

КАЗАНСКИЙ ФЕДЕРАЛЬНЫЙ УНИВЕРСИТЕТ

Кафедра английского языка
в сфере высоких технологий

COUNTRY-SPECIFIC IT PROJECTS

Учебное пособие для студентов ИВМиИТ- ВМК

Казань - 2016

УДК 372.881.111.1

ББК 81.2 Англ.

*Печатается по рекомендации учебно-методической комиссии
Ученого совета Института международных отношений,
истории и востоковедения КФУ*

Протокол № 1 от 26 октября 2016 года

кафедры английского языка в сфере высоких технологий

Протокол № 11 от 29 июня 2016 г.

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Country Specific IT Projects: учебное пособие / А. Р. Баранова,
Г, Р. Еремеева, Д. Ф. Хакимзянова. – Казань: Казан. ун-т, 2016. – 124 с.

Данное учебное пособие предназначено для занятий со студентами 1 и 2 курсов Института вычислительной математики и информационных технологий Казанского Федерального Университета, продолжающих обучение английского языка на базе программы средней школы, а также будет полезным любому читателю, интересующемуся англоговорящими странами (Канада, США, Австралия, Шотландия) в целом и IT изобретениями, сделанными в этих странах, в частности.

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Введение

Учебное пособие “Country Specific IT Projects” предназначено для занятий со студентами 1 и 2 курсов Института вычислительной математики и информационных технологий Казанского Федерального Университета, продолжающих обучение английского языка на базе программы средней школы, а также будет полезным любому читателю, интересующемуся англоговорящими странами (Канада, США, Австралия, Шотландия) в целом и IT изобретениями, сделанными в этих странах, в частности.

Пособие отвечает программным требованиям и охватывает такие важные темы как географическое положение, природные ресурсы, климат, традиции и обычаи, национальные праздники, символика, местные жители и другие. Дается подробная информация о столицах. Отличительной особенностью данного пособия являются технические тексты об информационных проектах, специфичных для каждой из рассматриваемых стран, историей их создания и областью применения.

Целью учебного пособия является расширение словарного запаса, развитие у студентов навыков поискового и просмотрового чтения, а также правильного понимания и перевода оригинальных материалов по специальности.

Учебное пособие состоит из 4 разделов (Units), которые в свою очередь делятся на две части: первая часть сфокусирована на страноведческом компоненте, во второй части представлены тексты, соответствующие специальности студентов. Каждый раздел посвящен определенной стране и содержит аутентичные тексты для развития различных навыков коммуникативного чтения, сопровождаемые до- и послетекстовыми заданиями, упражнениями на усвоение лексики, словообразование, формирование умения работать с определениями, отработку навыков перевода, в том числе и письменного.

Тексты, на которых основано пособие, заимствованы из оригинальных источников, опубликованы в зарубежных научных изданиях, а также

современных Интернет-источниках. При отборе текстов учитывалась их познавательная ценность.

Все разделы по своей структуре идентичны, даны четкие формулировки заданий, что позволяет достичь искомой цели.

Материалы пособия прошли апробацию на занятиях со студентами и могут быть использованы как для аудиторной, так и для самостоятельной работы.

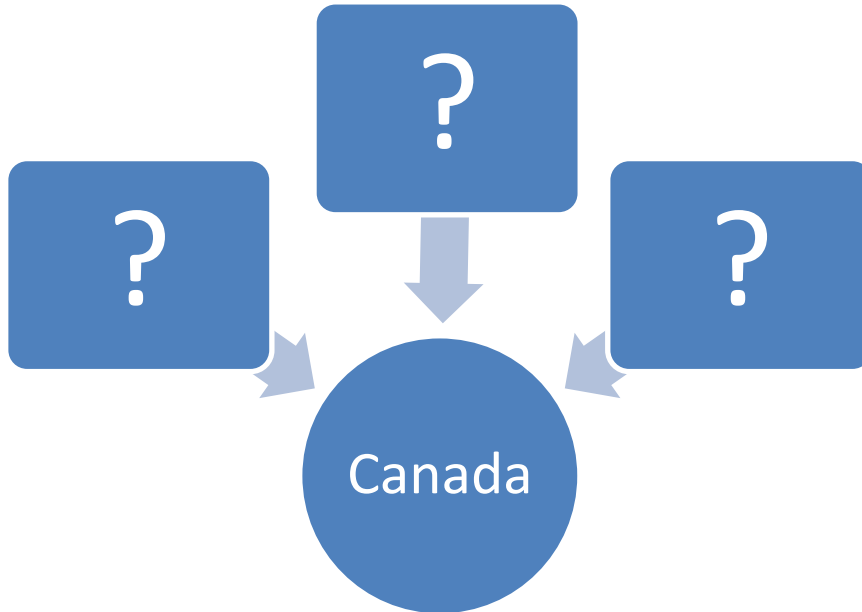
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Unit 1. CANADA

Part 1.

1. Before reading the text about Canada in pairs discuss your associations with this country.



2. Read the text and compare your answers with information in the text.

Canada

Canada is the world's 2nd largest nation by complete area after Russia and it



has the longest shoreline in the world. Its area is about 10 mln sq km. As Canada extends for thousands of miles from the Arctic Ocean to the United States and from the Atlantic Ocean to the Pacific Ocean, all kinds of weather conditions and scenery are to be

found there. The capital is Ottawa in the province of Ontario; the main cities are Toronto, Montreal and Vancouver.

The word Canada comes from one of the Red Indian languages – "Kannata", meaning "a number of huts". Canada is often called the "Land of the Maple Leaf". The maple leaf is the national emblem of Canada. The story of Canada goes back over 400 years. The French were the first settlers to this country. In 1759 Canada became a part of the British Empire. In 1931 became independent from Britain. Today Canada is an independent federative state, consisting of 10 provinces (Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland and Labrador, Nova Scotia, Ontario, Prince Edward Island, Quebec, Saskatchewan) and 3 territories Northwest Territories, Nunavut, Yukon.

Canada is a federal state governed as a parliamentary democracy and a constitutional monarchy. It is a member of the Commonwealth, headed by the Queen of Great Britain. Canadian economy is the 11th largest economy in the world. The Canadian economy is to rule over by the service industry, which provides employment for about three-fourths of the nation's manpower. But logging and petroleum industries performs very important role in Canadian economy.

As per 2011 census, it has a population of 33.4 million (approx). Canada ranks the world's 12th for Internet users with over 28 million users (approximately 84% of its population are internet users). People of Canada are very much interested in dance and music. So, it obviously reflects in traditional and modern dance groups, symphony orchestras, opera companies, and live theater, which are pretty common in Canada. The famous theaters are the Stratford Shakespeare Festival in Stratford, Ontario, and the Shaw Festival in Niagara-on-the-Lake, Ontario. English and French are the official languages (Quebec speaks mainly French, and New Brunswick is officially bilingual, whereas the rest of Canada speaks mostly English). Though Basketball was invented in Canada, Ice-Hockey is the biggest sport here (Hockey is officially the national winter sport, whereas Lacrosse is the official national summer sport).

Education is compulsory ranges between the ages of 14-18 in every province in Canada contributing to an adult literacy rate of 99 percent. Higher taxes offer better quality of life, including free healthcare covered by taxes.

Canadians love Poutine, which is French fries topped with cheese curds and hot gravy.

Taken from: <http://canada.eimc.ru/canada/geo.html>

3. Close the text and tell whether the following sentences are true or false, correct the false statements.

1. Canada is the world's largest nation.
2. Prime minister is the head of Canada.
3. Poutine is a famous Canadian dessert.
4. Internet is not very popular in Canada.
5. Colours of Canadian flag are red and white.
6. French is spoken only in Quebec.
7. Population of Canada is literate.
8. Canada provide free healthcare.
9. Canada is washed by two oceans.
10. Canada comprises 13 provinces.

4. Find the missing prepositions using the text.

Go ..., consist ..., contribute ..., provide employment ..., be headed ..., reflect ..., be interested ..., be topped ..., covered ..., come ..., independent ..., extend

5. Find the words in the text that have the similar meaning.

Entire, about, obligatory, workforce, apparently, rather, major, view, sauce, stretch.

6. Use the words from the previous two exercises in the sentences of your own.

7. Read the information below on how Canada day is celebrated and compare Canada Day with Russian national day. Is there much difference?

Canada Day

Happy Canada Day! On July 1, 1867, the nation was officially born when the Constitution Act joined three provinces into one country: Nova Scotia, New Brunswick, and the Canada province, which then split into Ontario and Quebec. However, Canada was not completely independent of England until 1982. The holiday called Dominion Day was officially established in 1879, but it wasn't observed by many Canadians, who considered themselves to be British citizens. Dominion Day started to catch on when the 50th anniversary of the confederation rolled around in 1917. In 1946, a bill was put forth to rename Dominion Day, but arguments in the House of Commons over what to call the holiday stalled the bill.

The 100th anniversary in 1967 saw the growth of the spirit of Canadian



patriotism and Dominion Day celebrations really began to take off. Although quite a few Canadians already called the holiday Canada Day (Fête du Canada), the new name wasn't formally adopted

until October of 1982.

Other Canada Day traditions that are gaining footholds are picnics, festivals, sporting events, and fireworks.

Many Canada Day events are planned all over the country, including Vancouver, Ottawa, Calgary, Toronto, Montreal, and Victoria.

Taken from: <http://mentalfloss.com/article/31069/what-exactly-canada-day>

8. Check how much information about Canada you remember. Answer the questions on the texts.

1. What is the meaning of Canada name?
2. What is the national emblem of Canada?
3. How old is Canada?
4. When did Canada become independent?
5. What are its main cities?
6. Is Canada a federative state?
7. When is Canada Day celebrated? What is the history of this celebration?
8. What are the main industries of Canada economy?
9. What do people in Canada do for leisure?
10. What sports are particularly popular in Canada?

9. Scan the text and make your top 5 of the most surprising facts about Canada that you did not know before. Compare your choice with your groupmates. Did these facts affect your idea of Canada?

53 Weird facts that prove Canada is a lot more interesting than previously thought

Canada has always been seen as the quieter and more gentle neighbor to the USA. While it is true hockey is revered and occupies a special place in the heart of every Canuck, there are other commonly held beliefs that are far from reality. For example, no Canadian lives in an igloo nor our friends to the North get around in dog sleds.

In this post, we have compiled a series of interesting facts that aimed at both expanding our limited knowledge about Canada as well as help us realize there is a lot more to the country that shares a border than we realize.

#1. Thanksgiving

Canada celebrates Thanksgiving much earlier than its American neighbors. Canadians give thanks the second Monday in October. Although the first version of

Thanksgiving was celebrated first in Canada in 1578 in Newfoundland as opposed to the Americans in 1621. Canada actually has this holiday changed several times until 1957, when Parliament finalized the day and month.

#2. Spare some change?

The Canadian Royal Mint created a coin with the face value of \$1 Million. The coin itself is made of 99.99% gold and weighs over 220 lbs.

#3. A bunch of tree huggers.

Roughly 30% of Canada's total landmass is occupied by forest. Makes for great photo ops.

#4. It's cold, eh?

'Eh' is not placed just anywhere in a sentence. It's at the end used as a confirmation, agreement or question.

#5. Maple Leaf

Canada's flag became official on February 15, 1965, almost 100 years after it became a country in 1867. Canada has used approximately 13 different flag designs since 1497 before the Maple Leaf.

#6. It's the garter snake capital of the world.

Narcisse Snake Dens is 130 km north of Winnipeg. Mid-April to early May you can see tens of thousands of garter snakes slithering from their dens. Viewing platforms are available for people to watch them from a distance.

#7. Crossing the border

The Canada/USA border is the longest international border in the world. It lacks military defense.

#8. British version

Canadians use English spelling so the following are spelled: colour, neighbour, centre, behaviour, labour.

#9. The Hotel de Glace in Quebec is built every year using 400 tons of ice and 12 000 tons of snow. Every summer it melts away, only to be rebuilt the following winter.

#10. Canadarm

The Canadarm or Shuttle Remote Manipulator System (SRMS) is a robotic arm used to repair, capture and deploy satellites. It also positioned astronauts, maintained equipment, and moved cargo. Named the Canadarm because it was developed by Canadian scientists. It was first launched in to space in 1981.

#11. Canada is the first country to build a UFO landing pad in St. Paul, Alberta.

Even the Minister of National Defense, Paul Hellyer, was there for the grand opening back in 1967.

#12. There are overpasses made for wildlife.

In Banff National Park in Alberta, highways are designed to create the perfect marriage between passing vehicles and overpasses for the wildlife including grizzly and black bears, wolves, coyotes, cougars, moose, elk, deer, bighorn sheep, wolverine and lynx.

#13. Polar Bear Swim

In Vancouver, British Columbia residents take a plunge in to freezing water in English Bay. This tradition takes place on new year's day at 2:30pm.

#14. Ogopogo

Canada has its own version of the Loch Ness monster located in the depths of Okanagan Lake. The sea creature has been spotted since the 19th century.

#15. Olympic gold

Canada holds two records: most gold medals won by a country in a winter Olympics as well as most gold medals won by a host country in the winter Olympics. Both accomplished in Vancouver 2010.

#16. Wolverine origin

The grouchy yet loveable comic book icon is from Alberta, Canada.

#17. First Europeans

The Vikings settled in the maritimes in 1000 AD.

#18. Loonies and Toonies

The \$1 bill was replaced by a coin with the face of a common loon (bird) on one side, Queen Elizabeth on the other. Hence, Canadians call one dollar a 'loonie.' When the \$2 bimetal coin was introduced it was called the toonie, after no animal.

#19. Parlez-vous Français?

After Paris, Montreal is the largest French speaking city in the world.

#20. Underground railroad to freedom.

Despite the name, the underground railroad was neither underground or a railroad but it did provide enslaved African Americans safe passage to freedom in Canada from 1840 to 1860.

#21. Michael Jordan thanks Canada.

The game so loved by Americans was invented by Canadian James Naismith in 1891.

#22. Actor Leslie Nielsen is Canadian. His brother, Erik, was the Deputy Prime Minister of Canada for two years, from 1984 to 1986.

#23. Canada is the most educated country in the world.

It has over 99% literacy rate and over half of Canadians have college degrees.

#24. Lakes, lakes and more lakes

Canada has the most lakes than any other country.

#25. Mars

There is a crater on Mars named after the town of Gander in Newfoundland commemorating its pioneering efforts in aviation and aerospace.

#26. Poutine is a popular food.

Poutine is a delicious, unhealthy treat consisting of french fries, cheese curds and gravy. It originated in Quebec and new versions of the original recipe have been added such as bacon, avocado and even turkey with stuffing as toppings during Thanksgiving.

#27. Winnie the Pooh

A bear cub named Winnipeg was exported from Canada to the London Zoo in 1915. A little boy named Christopher Robin Milne loved to visit Winnipeg, or

Winnie for short. His love for the bear cub inspired the stories written by his father, A.A. Milne, about Winnie-the-Pooh.

#28. Dinosaur world

Dinosaur Provincial Park, a UNESCO World Heritage Site, is one of the richest dinosaur fossil sites in the world. Over 40 dinosaur species have been found and over 500 specimens extracted.

#29. Where were you born?

Based on Statistics Canada, 6.8 million Canadians are foreign born. That is 20.6% or 1 out of 5 are born out of the country. This is the highest number of any G8 country.

#30. Universal health care

Canadians have a health care system predicated on a patient's medical need as opposed to the ability to pay.

#31. Canada produces 77% of the world's maple syrup.

#32. Practically everything is written in English and French.

#33. The man of steel is a Canuck. His creator was Canadian born comic born artist Joseph "Joe" Shuster.

#34. Rudolph the red-nosed caribou

People in the United States call them reindeer, in Canada they are called caribou.

#35. Polar bears

60% of the world's polar bear population of approximately 25,000 live in Canada.

#36. Hockey anyone?

Hockey is Canada's national winter sport. Although for Canadians hockey is a way of life. Take any calm Canadian and turn him in to a raving fanatic by simply criticizing their favorite team.

#37. Iceberg alert

Every spring, icebergs from Greenland float to Newfoundland and Labrador's coast. They are harvested to make wine, beer, vodka and skin care products.

#38. Canadian Hollywood

Often called Hollywood North, the west coast city is second behind Los Angeles in tv production and third in North America for feature film productions.

#39. Toronto

The rest of Canada accuses this very important city of thinking they are the 'center of the universe.' No tension at all.

#40. The name kanata is from the Iroquoian language meaning 'village.'

When French explorer Jacques Cartier was invited by the Iroquois to their village 'kanata,' he thought that was the name of the country.

#41. Canada spans 9 984 670 sq km and comprises 6 time zones.

#42. Canada is home to the longest street in the world. Yonge Street in Ontario starts at Lake Ontario, and runs north through Ontario to the Minnesota border, a distance of almost 2,000 km.

#43. The Canadian motto, *A Mari Usque ad Mare*, means "From sea to sea."

#44. Toronto's Rogers Centre, formerly known as the SkyDome, is home to the largest Sony big screen in the world, measuring 10 m x 33.6 m.

#45. The Blackberry Smartphone was developed in Ontario, at Research In Motion's Waterloo offices.

#46. The Big Nickel in Sudbury, Ontario is the world's largest coin. It is a huge reproduction of a 1951 Canadian nickel and measures nine meters in diameter.

#47. Canada has twice been invaded by the USA, first in 1775 and again in 1812.

#48. Canada's only desert in British Columbia is only 15 miles long and is the only desert in the world with a long boardwalk for visitors to walk on.

#49. Sandy Gardiner, a journalist with the Ottawa Journal in the 60s, coined the term 'Beatlemania' while he was writing a story about the Beatles.

#50. Famous Canadians include Pamela Anderson, Leonard Cohen, Avril Lavigne, Keanu Reeves and Jim Carrey. **#51.** The Mounted Police was formed in 1873, with nine officers. In 1920, the group merged with the Dominion Police to

become the famous Royal Canadian Mounted Police, which today has close to 30 000 members.

#51. Canada is home to approximately 55,000 different species of insects.

#52. Montreal is home to many beautiful churches and is often called The City of Saints or City of a Hundred Bell Towers.

#53. Ontario is believed to be home to the world's smallest jail, which measures only 24.3 sq metres.

Taken from: <http://www.lifebuzz.com/canada>

Part 2.

1. Before reading the text answer the following questions:

- What programming languages do you know?
- What do you know about Java language?

2. Read the text and find out more about Java and its inventor.

Java programming language

James Arthur Gosling, OC (born May 19, 1955) is a Canadian computer scientist, best known as the father of the Java programming language.



James Gosling received a Bachelor of Science from the University of Calgary and his M.A. and Ph.D. from Carnegie Mellon University. While working towards his doctorate, he wrote a version of Emacs called Gosling Emacs (Gosmacs). Before joining Sun Microsystems he built a multi-processor version of Unix for a 16-way computer system while at Carnegie

Mellon University. There, he also developed several compilers and mail systems.

Between 1984 and 2010, Gosling was with Sun Microsystems.

On April 2, 2010, Gosling left Sun Microsystems which had recently been acquired by the Oracle Corporation. Regarding why he left, Gosling cited reductions in pay, status, decision-making ability, change of role, and ethical challenges. On March 28, 2011, James Gosling announced on his blog that he had been hired by Google. Five months later, he announced that he joined a startup called Liquid Robotics.

Gosling is listed as an adviser at the Scala company Typesafe Inc., Independent Director at Jelastatic and Strategic Advisor for Eucalyptus.

Gosling is generally credited with having invented the Java programming language in 1994. He created the original design of Java and implemented the language's original compiler and virtual machine. Gosling traces the origins of the approach to his early graduate-student days, when he created a pseudo-code (p-code) virtual machine for the lab's DEC VAX computer, so that his professor could run programs written in UCSD Pascal. Pascal compiled into p-code to foster precisely this kind of portability. In the work leading to Java at Sun, he saw that architecture-neutral execution for widely distributed programs could be achieved by implementing a similar philosophy: always program for the same virtual machine.

The Java™ Programming Language is a general-purpose, concurrent, strongly typed, class-based object-oriented language developed by James Gosling and colleagues at Sun Microsystems in the early 1990s. Unlike conventional languages which are generally designed either to be compiled to native (machine) code, or to be interpreted from source code at runtime, Java is intended to be compiled to a bytecode, which is then run (generally using JIT compilation) by a Java Virtual Machine.

Java is a programming language, but there are several aspects to it. Java refers to the virtual machine that executes Java programs. Java refers to the environment in which source programs are developed and the tools that assist in development. Java also refers to the libraries of already developed code.

The language itself borrows much syntax from C and C++ but has a simpler object model and fewer low-level facilities, it bears a deeper resemblance to Ada and

Modula-3. Java is only distantly related to JavaScript, though they have similar names and share a C-like syntax.

Java was started as a project called "Oak" by James Gosling in June 1991. Gosling's goals were to implement a virtual machine and a language that had a familiar C-like notation but with greater uniformity and simplicity than C/C++. The first public implementation was Java 1.0 in 1995. It made the promise of "Write Once, Run Anywhere", with free runtimes on popular platforms. It was fairly secure and its security was configurable, allowing for network and file access to be limited. The major web browsers soon incorporated it into their standard configurations in a secure "applet" configuration. New versions for large and small platforms (J2EE and J2ME) soon were designed with the advent of "Java 2". Sun has not announced any plans for a "Java 3".

In 1997, Sun approached the ISO/IEC JTC1 standards body and later the Ecma International to formalize Java, but it soon withdrew from the process. Java remains a proprietary de facto standard that is controlled through the Java Community Process. Sun makes most of its Java implementations available without charge, with revenue being generated by specialized products such as the Java Enterprise System. Sun distinguishes between its Software Development Kit (SDK) and Runtime Environment (JRE) which is a subset of the SDK, the primary distinction being that in the JRE the compiler is not present.

Abridged from <http://www.freejavaguide.com/history.html>

3. Here is a list of abbreviations that you came across in the text. Do you know what they stand for?

M.A.

Ph.D.

ISO/IEC JTC1

DEC VAX

UCSD

JRE

SDK

J2EE

J2ME

JIT

JVM

p-code

4. Do you know why the languages mentioned in the text (C, Unix, Pascal, Ada) were given such names? What about other programming languages and software products? Find the explanation of the choice of their names.

5. Why the following names and numbers are mentioned in the text?

- March 28, 2011
- Oak
- Emacs
- Carnegie Mellon University
- Sun Microsystems
- Jelastic
- Ada
- Liquid Robotics

6. Match the words in two columns so that they should form word-combinations from the text.

architecture-neutral	notation
distributed	from source code
C-like	distinction
public	facilities
share	without charge

proprietary	a C-like syntax
available	programs
secure	implementation
primary	standard
to be compiled	"applet" configuration
be interpreted	execution
low-level	to native (machine) code

7. Before you read the text try to answer the question ‘Why is Java so popular in the world?’

8. Read the text and tell if information in the text corresponds to your answer.

Key features of the Java programming language

The first characteristic, object orientation ("OO"), refers to a method of programming and language design. Although there are many interpretations of OO, one primary distinguishing idea is to design software so that the various types of data it manipulates are combined together with their relevant operations. Thus, data and code are combined into entities called objects. An object can be thought of as a self-contained bundle of behavior (code) and state (data). The principle is to separate the things that change from the things that stay the same; often, a change to some data structure requires a corresponding change to the code that operates on that data, or vice versa. This separation into coherent objects provides a more stable foundation for a software system's design. The intent is to make large software projects easier to manage, thus improving quality and reducing the number of failed projects.

Another primary goal of OO programming is to develop more generic objects so that software can become more reusable between projects. A generic "customer" object, for example, should have roughly the same basic set of behaviors between

different software projects, especially when these projects overlap on some fundamental level as they often do in large organizations. In this sense, software objects can hopefully be seen more as pluggable components, helping the software industry build projects largely from existing and well-tested pieces, thus leading to a massive reduction in development times. Software reusability has met with mixed practical results, with two main difficulties: the design of truly generic objects is poorly understood, and a methodology for broad communication of reuse opportunities is lacking. Some open source communities want to help ease the reuse problem, by providing authors with ways to disseminate information about generally reusable objects and object libraries.

The second characteristic, platform independence, means that programs written in the Java language must run similarly on diverse hardware. One should be able to write a program once and run it anywhere.

This is achieved by most Java compilers by compiling the Java language code "halfway" to bytecode (specifically Java bytecode)—simplified machine instructions specific to the Java platform. The code is then run on a virtual machine (VM), a program written in native code on the host hardware that interprets and executes generic Java bytecode. Further, standardized libraries are provided to allow access to features of the host machines (such as graphics, threading and networking) in unified ways. Note that, although there's an explicit compiling stage, at some point, the Java bytecode is interpreted or converted to native machine instructions by the JIT compiler.

There are also implementations of Java compilers that compile to native object code, such as GCJ, removing the intermediate bytecode stage, but the output of these compilers can only be run on a single architecture. The first implementations of the language used an interpreted virtual machine to achieve portability. These implementations produced programs that ran more slowly than programs compiled to native executables, for instance written in C or C++, so the language suffered a reputation for poor performance. More recent JVM implementations produce programs that run significantly faster than before, using multiple techniques.

Portability is a technically difficult goal to achieve, and Java's success at that goal has been mixed. Although it is indeed possible to write programs for the Java platform that behave consistently across many host platforms, the large number of available platforms with small errors or inconsistencies led some to parody Sun's "Write once, run anywhere" slogan as "Write once, debug everywhere".

One idea behind Java's automatic memory management model is that programmers should be spared the burden of having to perform manual memory management. In some languages the programmer allocates memory to create any object stored on the heap and is responsible for later manually deallocating that memory to delete any such objects. If a programmer forgets to deallocate memory or writes code that fails to do so in a timely fashion, a memory leak can occur: the program will consume a potentially arbitrarily large amount of memory. In addition, if a region of memory is deallocated twice, the program can become unstable and may crash. Finally, in non garbage collected environments, there is a certain degree of overhead and complexity of user-code to track and finalize allocations.

In Java, this potential problem is avoided by automatic garbage collection. The programmer determines when objects are created, and the Java runtime is responsible for managing the object's lifecycle.

Comparing Java and C++, it is possible in C++ to implement similar functionality (for example, a memory management model for specific classes can be designed in C++ to improve speed and lower memory fragmentation considerably), with the possible cost of extra development time and some application complexity. In Java, garbage collection is built-in and virtually invisible to the developer. That is, developers may have no notion of when garbage collection will take place as it may not necessarily correlate with any actions being explicitly performed by the code they write. Depending on intended application, this can be beneficial or disadvantageous: the programmer is freed from performing low-level tasks, but at the same time loses the option of writing lower level code. The syntax of Java is largely derived from C++. However, unlike C++, which combines the syntax for structured, generic, and object-oriented programming, Java was built from the ground up to be virtually fully

object-oriented: everything in Java is an object with the exceptions of atomic datatypes (ordinal and real numbers, boolean values, and characters) and everything in Java is written inside a class.

Abridged from <http://www.freejavaguide.com/history.html>

9. Look through the text again and give Russian equivalents to the following words.

Implementation, compile, bytecode, deallocate, crash, library, explicit, language design, entity, corresponding, vice versa, beneficial, burden, roughly, lack, heap, consistently, correlate, disseminate, manual, primary.

10. Now make up 3 sentences of your own using these words.

11. Answer the questions on the text.

1. Is Java object-oriented language? What is object orientation?
2. What are the key features of Java programming language?
3. Why is Java a strongly typed language?
4. What is JVM? Why is Java called the “Platform Independent Programming Language”?
5. How is platform independence achieved in Java?
6. What is the Difference between JDK and JRE?
7. What is the purpose of garbage collection in Java, and when is it used?
8. What gives java it’s “write once and run anywhere” nature?
9. What do you mean by Java Applet?
10. What is in common between syntax of Java and C?

12. Translate these sentences.

1. Java - объектно-ориентированный язык программирования, разработанный компанией Sun Microsystems (в последующем приобретённой компанией Oracle). Приложения Java обычно транслируются в специальный

байт-код, поэтому они могут работать на любой виртуальной Java-машине вне зависимости от компьютерной архитектуры.

2. Изначально язык назывался Oak («Дуб») разрабатывался Джеймсом Гослингом для программирования бытовых электронных устройств. Впоследствии он был переименован в Java и стал использоваться для написания клиентских приложений и серверного программного обеспечения.

3. Другой важной особенностью технологии Java является гибкая система безопасности, в рамках которой исполнение программы полностью контролируется виртуальной машиной. Любые операции, которые превышают установленные полномочия программы (например, попытка несанкционированного доступа к данным или соединения с другим компьютером), вызывают немедленное прерывание.

4. Исходный файл на языке Java - это текстовый файл, содержащий в себе одно или несколько описаний классов. Транслятор Java предполагает, что исходный текст программ хранится в файлах с расширениями Java. Получаемый в процессе трансляции код для каждого класса записывается в отдельном выходном файле, с именем совпадающим с именем класса, и расширением class.

5. Транслятор создаст файл HelloWorld.class с независимым от процессора байт-кодом нашего примера. Для того, чтобы исполнить полученный код, необходимо иметь среду времени выполнения языка Java (в нашем случае это программа java), в которую надо загрузить новый класс для исполнения.

13. Skim the text about techniques to provide Java portability and summarize the advantages and disadvantages of each technique.

Techniques to provide Java portability

The first technique is to simply compile directly into native code like a more traditional compiler, skipping bytecodes entirely. This achieves good performance,

but at the expense of portability. Another technique, known as just-in-time compilation (JIT), translates the Java bytecodes into native code at the time that the program is run which results in a program that executes faster than interpreted code but also incurs compilation overhead during execution. More sophisticated VMs use dynamic recompilation, in which the VM can analyze the behavior of the running program and selectively recompile and optimize critical parts of the program. Dynamic recompilation can achieve optimizations superior to static compilation because the dynamic compiler can base optimizations on knowledge about the runtime environment and the set of loaded classes. JIT compilation and dynamic recompilation allow Java programs to take advantage of the speed of native code without losing portability.

The program or other objects can reference an object by holding a reference to it (which, from a low-level point of view, is its address on the heap). When no references to an object remain, the Java garbage collector automatically deletes the unreachable object, freeing memory and preventing a memory leak. Memory leaks may still occur if a programmer's code holds a reference to an object that is no longer needed - in other words, they can still occur but at higher conceptual levels.

The use of garbage collection in a language can also affect programming paradigms. If, for example, the developer assumes that the cost of memory allocation/recollection is low, they may choose to more freely construct objects instead of pre-initializing, holding and reusing them. With the small cost of potential performance penalties (inner-loop construction of large/complex objects), this facilitates thread-isolation (no need to synchronize as different threads work on different object instances) and data-hiding. The use of transient immutable value-objects minimizes side-effect programming.

Taken from <http://www.freejavaguide.com/history.html>

14. Find derivatives in the text for the following words. Explain their meaning or translate into Russian.

Refer, perform, optimize, reach, portable, mutable, assumption.

15. Explain the meaning of the following words and word combinations from the text.

Sophisticated, allocation, penalty, thread-isolation, prevent, memory leak, skip, at the expense of, incur, environment.

16. Discuss these questions in the group.

1. It has been noted that, among other qualities, good programmers are detail-oriented. Why might attention to detail be important in the programming process?

2. In addition to insisting on proper documentation, managers encourage programmers to write straight-forward programs that another programmer can easily follow. Discuss occasions when a programmer might have to work with a program written by another programmer. Under what circumstances might a programmer completely take over the care of a program written by another? If you inherited someone else's program, about which you knew nothing, would you be dismayed to discover minimal documentation?

3. Should students taking a computer literacy course be required to learn some programming?

17. Before reading the text about interesting facts about Java language try to answer the following questions.

- How is Java related to Shrek?
- Is it possible that in Java $3=12$?

18. Now scan the information below and check your answers.

Interesting facts about Java

Did you know that:

- Java was called Oak at the beginning



Original name for Java was Oak. Java legend has it that a big oak tree that grew outside the developer James Gosling's window. It was eventually changed to Java by Sun's marketing department when Sun lawyers found that there was already a computer company registered as Oak.

Another legend has it that Gosling and his gang of programmers went out to the local cafe to discuss names and wound up naming it Java. There seems to be some truth in this as the "0xCafeBabe" magic number in the class files was named after the Cafe where the Java team used to go for coffee.

- Java was invented by accident

James Gosling was working at Sun Labs, around 1992. Gosling and his team was building a set-top box and started by "cleaning up" C++ and wound up with a new language and runtime. Thus Java or Oak came into being.

- Java was originally designed for interactive TV

Java was originally designed for interactive TV, but the digital cable industry wasn't ready for the technology.

- It pays to learn Java

The median salary of a Java developer is \$83,975.00. Yes, it pays to be a Java developer and programmers are milking it. There are about 9 million Java developers in the world.

- Java is second most popular language after C.

Though many would argue that Java is all time favourite among developers, it is second most popular programming language after C. Java is ranked #2 in

popularity among programming languages, according to the programming languages popularity tracking website, tiobe.com.

- JUnit Testing Framework

The JUnit Testing Framework is currently the top used Java technology. Its stability and popularity can be deduced from the fact that almost 4 out of 5 Java developers or 70 % developers out there used JUnit Testing Framework.

- Java is the go to tool for enterprises

95 percent of enterprises use Java for programming. That is hell lot more than C and other languages put together.

- Current Java version

Java's latest major release is the Platform Standard Edition 8. Its features include improved developer productivity and app performance through reduced boilerplate code, improved collections and annotations.

- The Duke

The Java mascot, 'The Duke' was created by Joe Palrang. Palrang is the same guy who has worked on the Hollywood blockbuster, Shrek.

- Java and Android

Java practically runs on 1billion plus smartphones today because Google's Android operating system uses Java APIs.

- Final is not final in Java

Final actually has four different meanings in Java.

- 1) final class- The class cannot be extended
- 2) Final method- the method cannot be overridden
- 3) final field- The field is a constant
- 4) final variable- the value of the variable cannot be changed once assigned

Here are some additional facts about Java

- Java vs Google

Oracle is fighting a big courtroom battle with Google over the use of Java in Android operating system. If Oracle wins the lawsuit, it stands to make a cool \$8.8

billion. The courtroom battle headed for second hearing recently after the federal court ruled in favour of Oracle and told Google to approach district court for further ruling.

- Sun vs Microsoft

Sun's license for Java insists that all implementations be "compatible". This resulted in a legal dispute with Microsoft after Sun claimed that the Microsoft implementation did not support the RMI and JNI interfaces and had added platform-specific features of their own. In response, Microsoft no longer ships Java with Windows, and in recent versions of Windows, Internet Explorer cannot support Java applets without a third-party plug-in. However, Sun and others have made available Java run-time systems at no cost for those and other versions of Windows.

- In Java 3=12

In Java the output: `System.out.println(1+2+"") = "+1+2);`
3=12

Why? Apparently Java starts treating everything as a String once it has encountered a string in System.out statement.

Taken from: <http://www.techworm.net/2016/05/10-interesting-facts-java.html>

19. Search the Internet and using external resources prepare a short presentation on interesting facts about other programming languages.

Unit 2. THE USA

Part 1.

1. Refresh the information about the USA and try to answer the questions under the text.

The USA

The USA is one of the largest countries in the world after Russia, Canada and China. It occupies the southern part of North America and stretches from the Pacific to the Atlantic Ocean.

In the north the USA borders on Canada and in the south it borders on Mexico.

It is washed by the Atlantic Ocean in the east and by the Pacific Ocean in the west.

The country is divided into 50 states and each of them has its own capital, government, motto.

The capital of the whole country is Washington, D.C. (District of Columbia). It was named in honour of the first President, George Washington.

The population of the United States of America is nearly 250 million people. People of different nationalities live in the USA. In the past they came here from many European and other countries and brought to their new land a wonderful mixture of customs and traditions. For example, the Germans brought Christmas trees, the Irish – St. Patrick's Day celebrations, the Scots – Hallowe'en.

The USA is a young country and sometimes it's called the "New World". As a matter of fact its written history is only a few hundred years old. Russians were the first Europeans to settle in north-west America. Alaska is separated from Russia by only about 50 miles across the Bering Strait.

There are a lot of rich people in the USA, but the life of most coloured people is very difficult.

There are many big cities in the United States of America. They are: Washington, New York (the business centre of the USA), Chicago (the biggest industrial centre), Detroit (the biggest centre of the automobile industry), Hollywood (the centre of the USA film business) and others.

The USA is a federal republic, where the Congress is the American parliament.

The major political parties in the country are the Democratic Party and the Republican Party.

The USA is a highly developed industrial and agricultural country. At the beginning of the 20-th century the United States of America became the world leading country.

The famous places of interest in the US are: the Statue of Liberty in New York, the Golden Gate Bridge in San Francisco, Disneyland, etc.

The USA is a country of great differences. These differences are partly a result of the geography. One cannot generalize about the weather, the landscape, or even the way of living because the nation occupies nearly half of a continent. In it can be found high mountains and the flattest of prairies, tropical heat and arctic cold, fertile valleys and desert areas. All sorts of products are raised. And there are industries of every kind. Some of the most densely and most sparsely populated areas of the world are found in the United States.

Abridged from www.usatoday.com

2. Add a word to each of the ones given in order to name a geographical feature of North America.

1. Appalachian
2. Great
3. Colorado
4. Mojave
5. Death
6. Aleutian
7. Caribbean
8. Potomac
9. Great Canyon
10. Yukon

3. Find the missing prepositions using the text.

To separate ... , is washed ... , to divide ... , places ... interest, to come ... , to border , in honour ... , way ... living, a result ... , ... the south, to settle ... , a matter ... fact.

4. Find answers to the following questions.

1. Who lived in America before Columbus came?
2. Who discovered America?

3. Why is the country called “America”?
4. Who was the first President of the USA?
5. What great Americans do you know?
6. Each state has its symbol, doesn't it?
7. Why having looked at the American flag we can say how many states the USA has?
8. Is the American language distinguished from British English?
9. The Pentagon is a military centre, isn't it?
10. How long does the American President hold office?
11. What is the biggest state of the USA?
12. What is the “Bill of Rights”?
13. Are there really any differences between the Democratic and Republican parties?
14. Is Florida really a resort area?
15. Is the system of private schools very popular in the USA?
16. What do you know about baseball?
17. Are there any table manners at an American dinner?
18. What is the position of Negroes in American society?
19. What popular American Universities do you know?
20. Would you want to live in the United States of America?

5. Read the text below and decide which answer best fits each gap.

The Constitution of the US

The fundamental **1.** [**article, document, law, act**] of the US system of government is the Constitution which consists of a preamble, 7 articles and 27 amendments.

The Constitution sets up a **2.** [**political, democracy, republic, federal**] system and establishes a strong central government and three **3.** [**important, independent, main, major**] branches of government.

● The *legislative branch*, is made up of two **4.** [**parties, members, houses, parliaments**] which together form the Congress. The Congress makes laws and may also **5.** [**impeach, elect, nominate, choose**] the president.

● The *executive branch* is headed by the president who is elected every **6.** [**four, seven, five, two**] years. The president appoints the members of the executive departments. The **7.** [**Cabinet, Capitol, Convention, Ministry**] is the council formed by the heads (or secretaries) of the executive departments. The **8.** [**vice-president, secretary of state, secretary of defence, president**] serves as the commander in chief of the armed forces.

● The *judicial branch* is headed by a **9.** [**chairman, judge, Supreme Court, tribunal**] which may overturn a law by declaring it **10.** [**unjust, unconstitutional, illegal, cruel**].

6. Try to give an adequate translation of the sentences that follow.

1. США – государство в Северной Америке, раскинувшееся от берегов Тихого океана до побережья Атлантики. На юге граничит с Мексикой, на севере – с Канадой, на северо-западе – с Россией, на юго-востоке – с Кубой.

2. США – сильное современное государство, становление которого проходило под влиянием культурных, моральных и национальных устоев сотен тысяч переселенцев из многих стран мира, приехавших в Новый свет в поисках лучшей жизни.

3. В США есть немало уникальных природных творений, к которым можно отнести Большой Каньон, Великие Озера, Ниагарский водопад, многочисленные национальные парки. Одним из самых известных парков является Йеллоустонский с долиной гейзеров и большим количеством редких животных.

4. США – ведущая экономическая и военная держава, занимающая третье место в мире по численности населения и четвертое по площади.

5. Включенные в Конституцию поправки направлены, главным образом, на защиту прав человека, расширение избирательных прав, развитие полномочий федерального правительства.

6. Конституция распределила полномочия между центральной властью и властями штатов, создав федеральную систему государственного управления.

7. В соответствии с принципом разделения властей, каждая из трех ветвей власти (исполнительная, законодательная и судебная) функционирует относительно независимо от остальных. Вместе с тем, система сдержек и противовесов наделяет каждую ветвь способностью контролировать действия других.

8. Исполнительную власть осуществляет президент, являющийся главой государства и главнокомандующим вооруженными силами, а также министры, назначаемые президентом и подотчетные только ему.

9. Законодательный орган власти – Конгресс, состоит из двух палат – Сената и Палаты представителей. Сенат формируется из 100 сенаторов, представляющих штаты. Палата представителей формируется пропорционально количеству жителей штата.

10. Соединенные Штаты являются членом ООН, ЮНЕСКО, ВОЗ, МВФ, НАТО, Организации экономического сотрудничества и развития и др.

7. Share your opinions on the following.

1. In what way do the geographical position and physical features of the USA influence the development of the country?

2. Explain how the federal and state governments divide powers.

3. Can a country be governed without political parties, in your opinion? Why? Why not?

4. What was the basis for the formation of the American variant of the English language?

5. Perform a comparative analysis of the state structure of the USA, Britain and Russia.

8. What facts do you know about Washington D.C? What does the abbreviation 'D.C.' mean? Read the text and compare Washington DC with your country's capital.

A walk through Washington D.C.

With its impressive monuments and museums, its stately government buildings and mansions, Washington DC (District of Columbia) is easily recognizable as the United State's capital city, founded on July 16, 1790. Washington DC (commonly called the District, or simply DC) is the second most visited city in the United States (after New York) and among the top travel destinations in the world.

It is hard to believe, but the land on which Washington, DC's elegant National Mall and its splendid buildings stand was once a marshy swamp. George Washington created this special district as a federal power hub to avoid the problem of establishing the capital city in any one state.

Europeans first arrived along the Potomac River in the 16th century and the area quickly became prosperous. After the Revolutionary War Congress had to decide on the location of a new 'Federal Town'. The 10 square miles (26 sq km) between Maryland and Virginia, which is now the District of Columbia, was finally selected for its strategic location between North and South.

Originally designed by the French architect Pierre L'Enfant in 1791, Washington is a city of green parks, wide tree-lined streets and very few skyscrapers, all of which give it a European air. It is very much a purpose-built capital, a city of grand buildings (such as the White House and the US Capitol) and impressive monuments (the Washington Monument and the Lincoln Memorial, to name but two).

Congress and the second president, John Adams, moved to Washington, DC in 1800, but it was a further six decades before it began to look like a capital city.

Pulsing with life and constantly in flux, America's capital is an eclectic entity, fueled by politics and tourism. The District centers on the Capitol and then spreads out into a variety of distinctive neighborhoods. They include colorful Adams-Morgan

and its diverse ethnic groups, Downtown with its art galleries and nightlife, Dupont Circle with its hip clubs and Connecticut Avenue shopping, and upscale Georgetown, whose rows of brick town homes shelter first-class restaurants and boutiques. Capitol Hill and the National Mall feature many of the city's most prominent buildings and museums, including stately presidential monuments and most branches of the world-famous Smithsonian Institution.

For history-lovers and culture fans, DC is replete with world-class museums and arts venues. The Smithsonian alone includes 15 distinct museums with vast collections of art and artifacts, including the Air and Space Museum and the Museum of American History. At the Kennedy Center for the Performing Arts, visitors can catch live theater and music performances, and the Folger Theatre stages classics that resonate with modern audiences.

Well-planned from its inception, the city was provided early on with beautiful parks, gardens and public spaces. The National Mall, in particular, grants lovely views of the Capitol on one end and the Lincoln Memorial on the other. Walking the length of the Mall, visitors can take in these green spaces and even relax on a park bench as the hustle and bustle of the big city continues beyond. Also showcasing DC's natural beauty are Rock Creek Park and the US Botanic Garden.

Since DC's population includes residents and visitors from around the globe, the city enjoys thriving and diverse dining, night-life and retail scenes. The bulk of this activity can be found in four neighborhoods – Downtown, Adams-Morgan, Dupont Circle and Georgetown. Great restaurants that highlight the town's multiculturalism and culinary quality include Luigi's Pizza, Ben's Chili Bowl, Obelisk and Citronelle. After-hours, nightlife awakens in the policy-making town, and folks flock to hot spots like 9:30 Club or 18th Street Lounge. Although most neighborhoods boast great restaurants and clubs, Georgetown leads the pack in shopping. Not only does it feature majestic antique stores, but it also independent boutiques, upscale chains and the much-frequented Shops at Georgetown Park.

If you relish physical activity, DC delivers that as well. For pro sports enthusiasts, the Washington Redskins get fans riled up when autumn approaches,

playing to packed houses at FedEx Field Stadium; the NBA Washington Wizards dominate headlines during basketball season; and 2005 saw Major League Baseball return to the capital thanks to the Washington Nationals.

Undeniably, the District is on the go. Its metro-area population exceeds 5 million, and thousands of visitors come for political matters or simply to marvel at museums, memorials and gardens, they find plenty to entrance and delight them. The city defines America and puts on a pedestal what makes it tick and what it holds dear.

It comes as no surprise, then, that DC has an allure all its own. The city unites politics, cosmopolitan energy and culture with first-class dining, shopping and nightlife, crafting a melting pot of international influence and homegrown practicality that's not only a perfect travel destination but a chunk of the American experience itself.

Abridged from: <http://www.10best.com>
<http://www.worldtravelguide.net>

9. Discuss the following questions.

1. Who created this special district as a federal power hub? Why?
2. When did Congress of the USA and the 2nd president move to Washington DC?
3. What is Washington DC famous for?
4. What can Washington DC allure its tourists with?
5. What can people who are keen on sport find in Washington DC?

10. Use the word given in brackets to form a word that fits in the gap in each sentence.

1. The first English (**settle**) in America was on Roanoke Island.
2. The Pequot were a (**power**) tribe that controlled the Connecticut Valley.
3. Tobacco, cotton and rice were grown on (**plant**).
4. Humans have inhabited the New World since (**history**).

5. In the 17th century the Indians (**number**) the settlers in North America.
6. The Ku Klux Klan was a (**race**) organization.
7. Millions of African-American moved to the North to seek (**employ**) opportunities.
8. In 1963 Dr King led the march on Washington for jobs and (**free**).
9. In 1965 the Voting Rights Act (**law**) the discriminatory voting practices adopted in many southern states.
10. The expansion of the US in the 19th century was rapid and (**success**).

11. Match each of the words from column A with the correct name in column B and the correct date in column C.

A	B	C
1. Abraham Lincoln	a. author of <i>The Declaration of Independence</i>	July 4 th , 1776
2. Barack Hussein Obama	b. defeated at The Battle of Little Big Horn	1620
3. Dr Martin Luther King	c. first American of African origin to become president of the US	1789
4. Founding Fathers	d. first president of the US	1787
5. General Custer	e. founders of the Plymouth colony	1880s
6. George Washington	f. framers of the Constitution	1876
7. Jim Crow	g. signed the Emancipation Proclamation	1898

8. Pilgrim Fathers	h. laws enforcing segregation in the South	1863
9. Queen Lilioukalani	i. leader of the Civil Rights Movement	1955-1968
10. Thomas Jefferson	j. last Queen of Hawaii	November 4 th , 2008

12. Answer the following questions. You should write 30/50 words for each answer.

1. What difference was there between the French and the English in colonizing the American continent?
2. When and how did Great Britain become the dominant power in North America?
3. When did the American colonists decide to separate from Great Britain? Why?
4. Why did the US decide to adopt a Constitution?
5. What were the reasons behind the ‘peculiar institution’ of slavery in the American South? Why was it particularly cruel? When and how was slavery abolished?
6. What economic reasons led to the Civil War?
7. Who were the native Americans? What kind of people were the pioneers? What was the impact of the US expansion west on the native Americans?
8. What ideas supported the rapid expansion of the US in the 19th century?
9. What was the Civil Rights Movement? What were its aims and methods? Who was its leader?
10. What happened on September 11th, 2001? Why did the US invade Afghanistan? What has happened to the war in Afghanistan?

13. Use the word given in brackets to form a word that fits in the gap in each sentence.

Two different university systems

The American and European university systems are **1. (radical)** different in both form and substance.

In the US when you are in the **2. (academy)** world you are considered a peer from the **3. (begin)**.

Being a scientific peer means that your ideas are as **4. (value)** as anybody else's.

A student has less experience, but at the same time he/she is recognized for having bright ideas and lots of energy.

There is a lot of **5. (admire)** for young brains. And, in general, people who have worked longer are more than willing to transmit their **6. (know)** to you. One particularly striking example is represented by the flourishing of **7. (web)** where universities publish their **8. (teach)** material for free. The wealth of **9. (science)** and technological advances accumulated in the US during the last one hundred years have been achieved through the **10. (share)** and exchange of knowledge.

This is probably one of the best ways in which American democracy has expressed its potential.

14. Use the word given in brackets to form a word that fits in the gap in each sentence.

Americas: the Caribbean

1. The Arawaks and the Caribs **(origin)** from South America.

2. For many years, the people living in the Americas put up a strong **(resist)** against the attempts of the Europeans to take over their land.

3. In their search for gold the Spanish **(slave)** and finally exterminated the Caribbean native peoples.

4. After the (**abolish**) of (**slave**), (**indent**) labourers were transported from China, India and Madeira to (**place**) slaves on the sugar plantations.

5. In the 20th century (**nation**) corporations moved into the Caribbean.

6. In Haiti poverty and (**forest**) form a vicious circle.

7. The earthquake of 2010 was (**catastrophe**).

15. In the following sentences there are ten factual mistakes. Underline the mistakes and correct them.

1. <i>Live</i> was the first album by Bob Marley.	.....
2. Bob Marley gave his last concert in Ethiopia.	.....
3. Rastas refer to Jamaica as the promised land (Zion).	.....
4. Usain Bolt won three gold medals at the Beijing Olympics of 1996.	.....
5. Veronica Campbell Brown won the 400 hurdles at the Beijing Olympics.	.....
6. Derek Walcott was awarded the Nobel Prize for poetry in 1992.	.....
7. Derek Walcott writes mainly in French.	.....
8. Carnival is the biggest event of the year in Jamaica.	.....
9. The main Carnival celebrations take place in Kingstone.	.....
10. Carnival was introduced by English settlers.	.....

Part 2.

1. Is a computer mouse useful thing for you? How often do you use it? Have you ever thought about its origin? If no, we'd like to introduce you this informative text.

2. Before reading the text study vocabulary.

rubber trackball – резиновый трекбол

surface – поверхность

binary code – двоичный код

to garner – получать

royalties – гонорар

equipment – оборудование

pervasiveness – распространенность

to encourage – призывать

integral part – неотъемлемая часть

embedded accelerometers – встроенные акселерометры

faithful service – достойная служба

3. Read and translate the text.

The Origin of the Computer Mouse

A little more than 40 years ago Douglas Engelbart introduced his "X-Y position indicator for a display system" more commonly known today as the computer mouse - during a 90-minute presentation on a "computer-based, interactive, multiconsole display system" at the Stanford Research Institute (SRI) in Menlo Park, Calif. This event attended by some 1,000 computer professionals would later be called by many the "mother of all demos" and would introduce a number of computing capabilities largely taken for granted today: the mouse, hypertext, object addressing and dynamic file linking.

Engelbart, now 84, filed the patent in 1967 but had to wait three years for the U.S. to acknowledge his technology, which provided the tool needed to navigate graphics-filled computer screens with a simple motion of the hand rather than by wading through screens filled with green-tinted text using keys or a light pencil pressed up against a computer monitor. "I don't know why we call it a mouse," he said during the demo. "It started that way, and we never did change it."

The original mouse, housed in a wooden box twice as high as today's mice and with three buttons on top, moved with the help of two wheels on its underside rather than a rubber trackball. The wheels one for the horizontal and another for the vertical sat at right angles. When the mouse was moved, the vertical wheel rolled along the surface while the horizontal wheel slid sideways. Mice grew more ergonomic over time and have adopted trackballs, lasers and LEDs, but the premise is the same—the computer records both the distance and speed at which the mouse travels and turns that information into binary code that it can understand and plot on a display screen.

Engelbart originally invented the mouse as a way to navigate his oNLine System (NLS), a precursor of the Internet that allowed computer users to share information stored on their computers. NLS, which Engelbart developed with funding from the U.S. Department of Defense's Advanced Research Projects Agency (ARPA—now DARPA), was also the first system to successfully use hypertext to link files (making information available through a click of the mouse).

Because his patent for the mouse expired before it became widely used with personal computers in the mid-1980s, Engelbart garnered neither widespread recognition nor royalties for his invention. Mouse technology found its way from Engelbart's lab to the Xerox Corp.'s Palo Alto Research Center (PARC) in 1971, when Bill English, a computer engineer who had worked for Engelbart at SRI, joined PARC. Xerox was the first to sell a computer system that came with a mouse—the 8010 Star Information System in 1981, but the term "mouse" wouldn't become a part of the modern lexicon until Apple made it standard equipment with its original Macintosh, which debuted in 1984. The emergence of the Microsoft Windows

operating system and Web browsers hastened the mouse’s pervasiveness throughout the 1990s and into the first decade of the 21st century.

Engelbart’s own work at SRI came to an end in 1989, when McDonnell Douglas Corp. (his ultimate employer there after his division at SRI had changed owners a few times) shut down his lab. That year, Engelbart formed the Bootstrap Institute (now known as the Doug Engelbart Institute), a consulting firm in Menlo Park through which he still encourages researchers to share findings and build on one another’s achievements.

Logitech claims to have manufactured one billion mice, which “speaks volumes for the success of this pointing device and the dominance of the graphical user interface of which it is an integral part,” *Gartner Blog Network* analyst Steve Prentice blogged in December. Still, he adds, mice don’t factor into a future where touch-screen smart phones, touch-pad laptops and video game controllers with embedded accelerometers (such as those shipped with Nintendo’s Wii) rule the day. His prediction: the mouse is an endangered species with less than five years before it joins the ranks of the green screen, punch cards and other computer technologies now honorably retired to technology museums after years of faithful service on desktops everywhere.

Taken from Larry Greenemeier “The Origin of the Computer Mouse”. *Scientific American*. Aug 18, 2009.

4. Match the words with similar meanings.

1	surface	A	installations
2	royalties	B	superficies
3	equipment	C	collect
4	pervasiveness	D	honorarium
5	garner	E	patent
6	modern	F	abundance

7	invention	G	contemporary
8	dominance	H	appearance
9	emergence	I	predecessor
10	precursor	J	prevalence

5. Match the words with their definitions.

1	Display	A	Common name of scientists engaged in science.
2	Patent	B	Geometric figure, that formed by two rays.
3	Angle	C	Protective document certifying the exclusive right of authorship and priority of invention.
4	Division	D	Transformation of a whole or in separate parts
5	Researchers	E	Electronic device for visual reproduction of data.
6	Browser	F	An electrical circuit linking one device, esp a computer, with another.
7	Hypertext	G	A statement that is assumed to be true for the purpose of an argument from which a conclusion is drawn.
8	Premise	H	A demonstration of a prototype system.
9	Interface	I	A software package that enables a user to find and read hypertext files, esp on the World

			Wide Web.
10	Demo	J	Computer software and hardware that allows users to create, store, and view text and move between related items easily and in a nonsequential way; a word or phrase can be selected to link users to another part of the same document or to a different document.

6. Match the first half of each sentence with the most appropriate second half.

1. It started that way, and	a. the vertical wheel rolled along the surface while the horizontal wheel slid sideways.
2. When the mouse was moved,	b. it joins the ranks of the green screen.
3. Because his patent for the mouse expired before	c. why we call it a mouse.
4. The mouse is an endangered species with less than five years before	d. it became widely used with personal computers in the mid-1980s.
5. I don't know	e. we never did change it.

7. Find equivalents to the following words and word combinations.

Для дисплейной системы, компьютерный специалист, вычислительные возможности, гипертекст, подать патент, деревянный ящик, под прямым углом, становиться более эргономичным, на экран монитора, изначально изобрел, способ навигации, предшественник Интернета, обмениваться информацией, компьютерный инженер, стандартное оборудование, побуждает исследователей, указательное устройство.

8. Answer the questions.

- 1) What invention was created by Douglas Engelbart?
- 2) How long did Douglas Engelbart have the patent for a computer mouse?
- 3) How can you describe the first mouse?
- 4) Why is the mouse considered to be an endangered species with less than five years?
- 5) What advantages and disadvantages of computer mouse do you know?

9. Make a plan to the text and retell it in short according to your plan.

Wireless Power

10. What do you know about wireless power? Where can it be used?

11. Study necessary vocabulary.

wireless - беспроводной

current - ток, поток

harness - использовать

tangible - осязаемый

induction coil - индукционная катушка

incandescent lamp - лампа накаливания

resonant inductive coupling - резонансный трансформатор

tuning - настройка, регулировка

setback - задержка, неудача, регресс

run out of funds - закончились средства

demolished - уничтоженный, разрушенный

air gap - воздушный зазор

alternating / direct current - переменный / постоянный ток

oscillating - колеблющийся

magnetic field - магнитное поле

copper wire - медный провод

within proximity - в непосредственной близости

electronic transmitter circuit - электронная схема передатчика

maintain - поддерживать

corrosion - коррозия

hermetically sealed - герметично запечатан

robust - крепкий

12. Read and translate the text.

Wireless Power

Wireless Power transfer was first demonstrated by Nikola Tesla in the 1890s, however it is only really in the last decade that the technology has been harnessed to the point where it offers real, tangible benefits to real world applications. Applications using resonant wireless power technology have been most noticeable in the Consumer Electronics market where wireless charging promises to deliver new levels of convenience for the charging of millions of everyday devices.

By 1891, Tesla had developed a high-tension induction coil, which he used to demonstrate wireless energy transmission. He successfully presented his technique to the American Institute of Electrical Engineers and the National Electric Light Association. By 1894 Tesla had developed the equipment to wirelessly light incandescent lamps at his New York laboratory. This method used resonant inductive coupling, which involves tuning two nearby coils to resonate at the same frequency.

By 1896 he had increased the range of transmission to 30 miles (~ 48 km). Tesla began construction on his Wardencllyffe Tower, designed for wireless broadcasting and power generation, in 1901. After several construction delays and technical setbacks, the project ran out of funds a few years later and was eventually demolished. After this, no significant advances were made for more than 50 years.

(Wireless) Inductive Power Transfer or IPT involves the transmission of energy from a power source to an electrical load, without connectors, across an air gap. The basis of a wireless power system involves essentially two coils – a

transmitter and receiver coil. The transmitter coil is energized by alternating current to generate a magnetic field, which in turn induces a current in the receiver coil.

The basics of wireless power involves the transmission of energy from a transmitter to a receiver via an oscillating magnetic field. To achieve this, Direct Current (DC) supplied by a power source, is converted into high frequency Alternating Current (AC) by specially designed electronics built into the transmitter. The alternating current energizes a copper wire coil in the transmitter, which generates a magnetic field. Once a second (receiver) coil is placed within proximity of the magnetic field, the field can induce an alternating current in the receiving coil. Electronics in the receiving device then converts the alternating current back into direct current, which becomes usable power.

The diagram below simplifies this process into four key steps.

1. The 'mains' voltage is converted in to an AC signal (Alternating Current), which is then sent to the transmitter coil via the electronic transmitter circuit.

2. The AC current flowing through the transmitter coil induces a magnetic field which can extends to the receiver coil (which lies in relative proximity)

3. The magnetic field then generates a current, which flows through the coil of the receiving device. The process whereby energy is transmitted between the transmitter and receiver coil is also referred to as *magnetic* or *resonant coupling* and is achieved by both coils resonating at the same frequency. Current flowing within the receiver coil is converted into direct current (DC) by the receiver circuit, which can then be used to power the device.

Researchers predict that wireless power will be making a significant contribution to energy supplies by the end of this decade.

Benefits of Wireless Power

Reduces costs associated with maintaining direct connectors.

Greater convenience for the charging of everyday electronic devices.

Safe power transfer to applications that need to remain sterile or hermetically sealed.

Electronics can be fully enclosed, reducing the risk of corrosion due to elements such as oxygen and water.

Robust and consistent power delivery to rotating, highly mobile industrial equipment.

Delivers reliable power transfer to mission critical systems in wet, dirty and moving environments.

Whatever the application, the removal of the physical connection delivers a number of benefits over traditional cable connectors, some of which aren't always obvious. Nowadays there is a concept of smartphones wireless charging.

Taken from: <http://powerbyproxi.com/wireless-power/>

13. Match the words with similar meanings.

1	decade	A	to draw out or be drawn out; stretch
2	incandescent	B	important, notable, or momentous
3	demolish	C	an electromotive force or potential difference expressed in volts
4	predict	D	nearness in space or time
5	robust	E	capable of being touched or felt; having real substance
6	significant	F	emitting light as a result of being heated to a high temperature; red-hot or white-hot
7	proximity	G	to state or make a declaration about in advance, esp on a reasoned basis; foretell
8	extend	H	a group or series of ten
9	tangible	I	strong in constitution; hardy; vigorous

10	voltage	J	to destroy
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14. Translate without referring to the text.

Induction, to induct; resonation, to resonate; tuning, to tune; direct, directly, directness; alternating, alternately, to alternate; oscillating, oscillative, to oscillate; power, powerful, powerfully; noticeable, noticeably, to notice; convenience, convenient, conveniently; transmission, to transmit, transmittable; to convert, conversion; construction, to construct, constructive, constructively; receiving, to receive; contribution, to contribute.

15. Find synonyms to the words given.

harness, tangible, cable, incandescent, tuning, setback, fund, use, hot, resource, equipment, variable, spread, demolished, fail, involve, eliminated, include, setting, wire, device, alternating, glowing, extends, benefit, noticeable, profit.

16. Find equivalents to the following word combinations.

Ощутимые преимущества, беспроводная зарядка, высоковольтный, передача энергии, лампы накаливания, беспроводная трансляция, выработка энергии, технические неудачи, полезная нагрузка (мощность), воздушный зазор, переменное(колеблющееся) магнитное поле, поддержание постоянных соединений, в непосредственной близости.

17. Answer the questions.

1. What did Nikola Tesla demonstrate in the 1890s?
2. What had he developed by 1891 to demonstrate wireless energy transmission?
3. Did his project run out of funds?
4. What does the transmission of energy involve from a power source to an electrical load, without connectors, across an air gap?
5. What does an AC induce flowing through the transmitter?

18. Do you agree with the statement that wired technologies are more useful and reliable than wireless? Why? Adduce at least 2 arguments.

Unit 3. AUSTRALIA

Part 1.

1. Read the poem by an Australian poet Dorothea Mackellar. Does it correspond to your vision of Australia?

I love a sunburnt country,
A land of sweeping plains,
Of ragged mountain ranges,
Of droughts and flooding rains.
I love her far horizons,
I love her jewel-sea,
Her beauty and her terror –
The wide brown land for me!”

2. Study the text and compare your ideas about Australia with information in the text.

Australia

Australia is world famous for its natural wonders and wide open spaces, its



beaches, deserts, "the bush", and "the Outback".

Australia is one of the world's most highly urbanised countries; it is well known for the attractions of its large cities such as Sydney, Melbourne, Brisbane and Perth.

Australia is the only nation to govern an entire continent and its outlying islands. Australia is the sixth-largest country by land area. It is comparable in size to

the 48 contiguous United States. Australia is bordered to the west by the Indian Ocean, and to the east by the South Pacific Ocean. The Tasman Sea lies to the southeast, separating it from New Zealand, while the Coral Sea lies to the northeast. Papua New Guinea, East Timor and Indonesia are Australia's northern neighbours, separated from Australia by the Arafura Sea and the Timor Sea.

Australia is the driest inhabited continent on earth. Its interior has one of the lowest rainfalls in the world and about three-quarters of the land is arid or semi-arid. Its fertile areas are well-watered, however, and these are used very effectively to help feed the world. Sheep and cattle graze in dry country, but care must be taken with the soil. Some grazing land became desert when the long cycles that influence rainfall in Australia turned to drought.



Australia is an independent Western democracy with a population of more than 22 million. It is one of the world's most urbanised countries, with about 70 per cent of the population living in the 10 largest cities. Most of the population is concentrated

along the eastern seaboard and the south-eastern corner of the continent.

Australia's lifestyle reflects its mainly Western origins, but Australia is also a multicultural society which has been enriched by over six million settlers from almost 200 nations. Four out of ten Australians are migrants or the first-generation children of migrants, half of them from non-English speaking backgrounds.

Most of the inland areas of the country are semi-arid. The national capital of Australia is Canberra. There are six (6) states; Queensland (QLD), New South Wales (NSW), Victoria (VIC), Tasmania (TAS), South Australia (SA) and Western Australia (WA). The Australian Capital Territory (ACT) is now self administrating

with its own legislature. The Northern Territory (NT), despite being self-administering, can still have its state laws overturned by the Federal Government. The most-populous states are Victoria and New South Wales, but by far the largest in land area is Western Australia.

While NSW, VIC and QLD are rarely referred to in the abbreviated form in daily speech, you'll often hear references to "the Aay See Tee" (ACT), "Ess-Ay" (South Australia), "Double-yew Ay" (Western Australia) and "Tas-ee" (spelled Tassie, for Tasmania). The state capital of QLD - Brisbane, will similarly be abbreviated to "Bris-ee" for Brissie.

Although they have local government elections, Lord Howe Island off the east coast of Australia in the Tasman Sea, is administered by NSW. The Australian External Territories include Norfolk Island in the Pacific Ocean and the Coral Sea Islands Territory, the Cocos (Keeling) Islands, Christmas Island and the Territory of Ashmore and Cartier Islands in the Indian Ocean, which are administered from Canberra.

Australia's most southerly territories, Heard Island and McDonald Islands, along with Macquarie Island, are conservation zones, while the Australian Antarctic Territory covers more than 30% of that continent, (which comprises 9.6% of the world's land surface area).

Australia has a federal system of government, with eight state and territory governments and a national government. Each of these governments has an elected parliament, with the leader of each government, known as the Premier, being the leader of the largest party represented in the lower house. The national parliament is based on the British "Westminster system", with some elements being drawn from the American congressional system.

Australia has a developed modern market economy and has had one of the most outstanding economies of the world in recent years with high-growth, low-inflation and low interest rates. Over the past decade, inflation has typically been 2–3% and the base interest rate 5–6%. There is an efficient government sector, a flexible labour market and a very competitive business sector.

Since 1992 Australia has averaged greater than 3 per cent economic growth and recorded over 17 consecutive years. This economic stability places Australia in the top echelon of developed countries in terms of sustained rates of growth.

The Australian economy is dominated by its service sector, representing 68% of Australian GDP. The agricultural and mining sectors account for 57% of the nation's exports.

With its abundant physical resources, Australia has enjoyed a high standard of living since the nineteenth century. Australia is a major exporter of agricultural products, particularly wheat and wool, minerals such as iron-ore and gold, and energy in the forms of liquefied natural gas and coal. It has made a comparatively large investment in social infrastructure, including education, training, health and transport.

According to the Reserve Bank of Australia, Australian per capita GDP growth is higher than that of New Zealand, US, Canada and The Netherlands. The past performance of the Australian economy has been heavily influenced by US, Japanese and Chinese economic growth.

Australia's national day, Australia Day, on 26 January, marks the date in 1788 when Captain Arthur Phillip, of the British Royal Navy, commanding a fleet of 11 ships, sailed into Port Jackson (Sydney Cove). Phillip formally took possession of the eastern part of the continent for England and established a settlement, now Australia's largest city, Sydney.

Air travel and the great variety of Australia's attractions are combining to bring more international tourists to Australia every year. Overseas tourists are drawn by Australia's sunshine, sandy beaches, the vast outback, rainforests, the Great Barrier Reef, unique flora and fauna, the Gold Coast of Queensland, and the attractions of the cities, Australia's friendly, multicultural society, and the safe and welcoming environment. Tourism is one of Australia's largest and fastest-growing industries. In 2007, 5.6 million international tourists visited Australia, tourism is an \$81 billion industry that employs around 500,000 people.

One of the earliest exports was wool, from which the expression 'Australia riding on the sheep's back' was born. Today, a more diverse export industry has

grown incorporating manufacturing products, services such as education and tourism, and high quality food and wine.

In 2007, Australia's largest export markets were Japan, China, the United States, Republic of Korea and New Zealand.

Australia's exports of goods and services grew by 3.8 per cent to \$218 billion in 2007, about 20 per cent of Gross Domestic Product (GDP). On average, Australia's exports have grown by 8.7 per cent per annum over the past five years.

While Australia's largest export sector is minerals and fuels, manufacturing is also a major part of the economy. Advanced manufactured items accounted for around 60% of Australia's total manufactured exports. Many of the companies producing these goods are integrated into global supply chains, one of the key manufacturing trends of the new millennium.

Taken from: <http://www.about-australia.com/facts/australia-in-brief/>

3. Look through the text again and give Russian equivalents to the following words.

Per annum, supply chain, fuel, sustained, account for, advanced, diverse, outback, represent, abundant, comprise, consecutive, in terms of, interest rate, semi-arid, legislature.

4. Why the following names and numbers are mentioned in the text?

1788

Great Barrier Reef

17

22 million

48

500,000 people

Port Jackson

Reserve Bank of Australia

5. Close the text and tell whether the following sentences are true or false, correct the false statements.

1. Australia's national day, Australia Day, is on 28 January.
2. Australia is the driest inhabited continent on earth.
3. Australia is the third-largest country by land area.
4. Wool is the main export of Australia.
5. Agricultural sector is the biggest part of the Australian economy.
6. 70 per cent of the Australian population lives in the 10 largest cities.
7. The national parliament is based on the British "Westminster system".
8. Australia is a multicultural society.
9. The Australian Capital Territory is now self administering with its own legislature.
10. Western Australia is the most-populous state.

6. Study information about Australia's flags and coat of arms and answer the questions.

- Why does Australia have several officially recognized flags?
- What animals are there on Australia's coat of arms? What is Commonwealth star?

Australia's Flags and Emblems



The Australian National Flag was first flown on September 3, 1901 over the Royal Exhibition Building in Melbourne. The date is still celebrated as 'Australian National Flag Day'. Today, the National Flag is a symbol of the Australian identity and serves as an important part of almost all our national events.

The National Flag is most often flown by the general public on celebrated days of Australian history such as Australia Day (January 26) or on days of remembrance such as ANZAC Day (April 25). On these days flags can be seen in the streets attached to cars, in shop windows and on an endless array of t-shirts, bumper stickers,

badges, fake and real tattoos and even face painted flags are commonplace. The Flag is also flown at international sporting events where Australia competes and it demonstrates the national pride and support of our competitors and sporting ambassadors.

The colours and symbols within the Australian Flag have great significance, there are three primary elements;

The Union Jack

The presence of the Union Jack in the upper hoist quadrant of Australia's Flag is an acknowledgment of Australia's connection and history with the United Kingdom.

The Southern Cross

Located in the second and fourth quarter (right hand side), the Southern Cross is a constellation of five stars that is a prominent feature of the night sky and only visible in the southern hemisphere. It is a significant navigational feature and intended to represent Australia's geographical location.

The Commonwealth Star

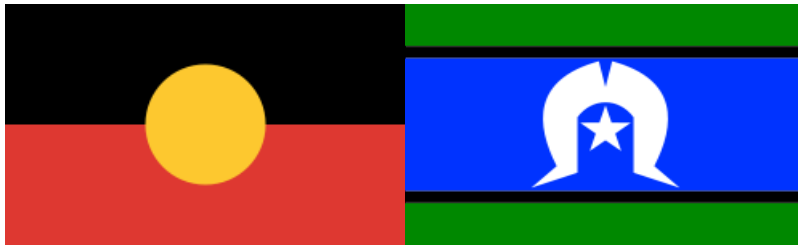
This large seven point star is placed centrally in the third quarter of the flag. The seven points denote the six states of Australia and the combined territories of the Commonwealth. The seventh point was an addition eight years after the original in 1909.

Proclamation

The Flags Act of 1953 proclaimed the Australian National Flag

Other National Flags

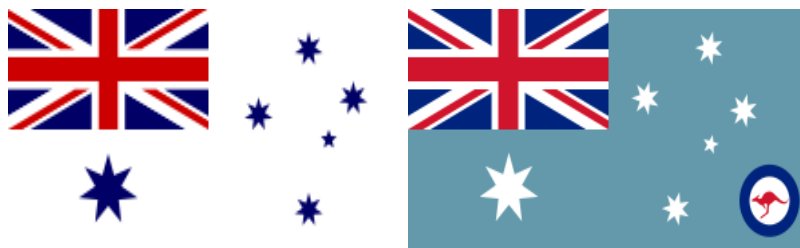
There are a number of other officially recognised flags in Australia, these include the Australian Aboriginal Flag, the Torres Strait Islander Flag and the ensigns of the Australian Defence Forces which include the Australian Red Ensign (Merchant ships) which is the official flag to be flown at sea, the Royal Australian Air Force Ensign (RAAF) and the Australian White Ensign for the Royal Australian Navy.



Australian Aboriginal Flag Torres Strait Island Flag



Australian Defense Force Ensign Australian Red Ensign



Australian White Ensign

Australian RAAF Ensign

The Australian Coat of Arms



Australia's current Coat of Arms was granted by King George V in September of 1912 and is the second Commonwealth Coat of Arms. The first version appeared in 1908 and although similar, it did not include any specific references to the Australian States. Recommendations of the Commonwealth Government by King George V led to a number of changes which resulted in the design we see today.

The Australian Government uses the coat of arms to authenticate documents and for other official purposes. Its uses range from embellishing the Australian passport to forming part of all Australian government departmental insignias.

The shield at the centre of the coat of arms is a symbol for the federation of the states and it depicts the badges of the six Australian states enclosed by an ermine border. The shield is supported by two native Australian animals, the red kangaroo and the emu.

Above the shield is the seven pointed gold Commonwealth Star, six of the points represent each of the six states and the seventh represents the territories.

Australia has never adopted any official motto or faunal emblem. By popular tradition, however, the kangaroo and emu are widely accepted as such.

Taken from: <http://www.about-australia.com/facts/australia-flags-emblems/>

7. Find words in the text with the similar meaning.

Important, stand for, specific characteristic, initial /first, show, present (adjective).

8. Using the previous two texts answer the questions about Australia.

1. What is the meaning of Australia?
2. Which animals carry its babies in a pouch?
3. When is Australia Day?
4. Which of the following is not a State: Queensland, Western Australia, South Australia, Northern Territory?
5. Which of the following is not a dependency of Australia: Christmas Island, Norfolk Island, Cook Islands, Cocos Islands?
6. How was Australia known in the 18th century: Rhodesia, Nyasaland, Bechuanaland, New Holland?
7. What does the coat of arms represent?
8. What is the structure of Australia's government?
9. Why is Australian economy considered to be prosperous?

10. What is an emblem of Australia?

9. Study the text about cultural aspects in Australia. Having read the text tell what is the politically correct way to refer to an indigenous Australian.

Indigenous Australians

It is best not to mention the name of a deceased person to an indigenous Australian. Though Aboriginal custom varies, it is best to avoid the possibility of offence.

Permission to photograph an Aboriginal person should always be asked, but in particular in the more remote areas such as Arnhem Land. There is an old belief among them that having their photograph taken will steal their soul.

Some areas of land are sacred to Aboriginal people, and require additional respect.

Many areas of Aboriginal land are free to enter. Some areas carry a request from the Aboriginal people not to enter, and you may choose yourself whether or not to honour or respect that request. An example of an Aboriginal request is climbing Uluru (Ayers Rock). No law prohibits people from climbing the rock (except in heat, rain or strong winds), however, local indigenous communities (The Anangu) request that you do not climb. Uluru holds great spiritual significance to the Anangu. The Anangu feel themselves responsible if someone is killed or injured on their land (as has happened many times during the climb) and request tourists not to place themselves in harm through climbing. Many people who travel to Uluru do climb, however, so you certainly won't be on your own if you choose to do this.

Some Aboriginal land requires permission or a permit, and some areas are protected and illegal to enter. You should check before making plans to travel off the beaten track. Permits are usually just a formality for areas which regularly see visitors, or if you have some other business in the area you are travelling through. Often they are just an agreement to respect to the land you are travelling on as Aboriginal land. Some Aboriginal Land Councils make them available online.

If you need to refer to race, the politically correct term is *Indigenous Australians*. *Aboriginal people* is usually okay and referring to sacred sites and land as Aboriginal sites, or Aboriginal land is okay too. Avoid using *Aborigine* or *Aboriginal* as a noun to describe a person, as some people see negative connotations in these words. The contraction "Abo" is deeply offensive and should never be used. The word *Native* should also be avoided when referring to a person, as should colour-based terminology such as *Black* or *White* (the polite term for Australians of British or Irish descent is *Anglo-Celtic*).

Taken from: <http://www.bigvolcano.com.au/info/general.htm>

10. Study these facts about Australia. Which of them do you find the most interesting? Why?

Ask the question of what Australia is known for to Aussies and foreigners and you'll get answers like Hugh Jackman, Nicole Kidman, Kylie Minogue, kangaroos, koalas, cricket, swimming, Sydney Harbour Bridge, Sydney Opera House, Bondi Beach, Aborigines, Minerals, wine and vegemite. Australia is much more than these. Here are 40 interesting facts to share with family, friends and visitors about Australia.



1) It is the 6th largest country in the world, occupying an entire continent of some 7.6 million square kilometres.

2) It has the world's 3rd largest ocean territory, spanning three oceans and covering around 12 million square kilometres.

3) Vegetation covers nearly 7 million square kilometres or 91 percent of Australia.

4) The largest Greek population in the world beside Athens in Greece can be found in Melbourne Victoria.

5) Most of Australia's exotic flora and fauna cannot be found anywhere else in the

world.

6) The Indigenous 'Dream Time' is the foundation for tens of thousands of years of spiritual aboriginal art, traditions, legends, myths, folklore and culture.

7) The only nation-continent of 20 million people in the world.

8) The wattle was adopted as the national floral emblem in 1912.

9) The first Australian Friendly Society with the motto of 'Advance Australia' was the Australian Natives' Association (ANA) formed in Victoria in 1871.

10) More than 80 percent of Australians live within 100 kilometres of the coast making Australia one of the world's most urbanised coastal dwelling populations.



11) Over 200 different languages and dialects are spoken in Australia including 45 Indigenous languages.

The most common non-English spoken languages are Italian, Greek, Cantonese, Arabic,

Vietnamese and Mandarin.

12) The world's highest proportion of migrant settlers in a developed nation with over 25% of Australians born in another country.

13) Today's Australia is very multicultural with Indigenous peoples and

migrants from some 200 countries.



14) Australia's first small step to a fully multicultural Australia was the result of immigrants from

Eastern Europe and the Mediterranean after 1945.

15) It contains an amazing ecosystem with unique flora and fauna including pristine rainforest, ancient rock formations and beautiful beaches.

16) The first Australian of the Year award was awarded to Professor Macfarlane Burnet who had won the Nobel Prize in the same year of 1960 for his groundbreaking physiology research.

17) Debate continues today on the calls to change the Australian flag because of the prominence of the British Union Jack, which does not reflect contemporary Australian society.

18) It has 16 world heritage listed sites including historic townships, cities and landscapes.

19) While 1988 was named a 'Year of Mourning' for Aboriginals, it was also regarded as a celebration of survival where the Aboriginal community staged a 5 kilometre march for "Freedom, Justice and Hope" in Sydney.

20) Australia used to be a beer-drinking nation but its quaffing plunged to a 65-year low in 2010-2011 with only 4.23 litres consumed per person.

21) Aboriginal leader, Lowitja O'Donoghue, a recipient of the Order of Australia in 1976 and Australian of the Year in 1984 delivered the first milestone national Australia Day address on 26 January 2000.

22) It is believed that the Aboriginal game of Mangrook inspired the rules for Australian Football, while invented in Sydney became popular in Victoria.

23) Australia was the second country in the world to give women the right to vote in 1902.

24) The largest cattle station in the world is Anna Creek Station in South Australia at over 34,000 square kilometres is the world's largest cattle station. It is even larger than Belgium.

25) It has the highest rate of gambling in the world with over 80 percent of Australian adults engaging in gambling of some kind and 20 percent of the pokie machines in the world are found in Australia.

26) Australia Day today is a celebration of diversity and tolerance in Australian society, embracing all ethnic backgrounds, racial differences and political viewpoints.

27) Kangaroo meat can be purchased from the supermarket, butcher and available on restaurant menus as a leaner and healthier alternative to beef or lamb with a 1-2 percent fat content.

28) Surprisingly Australia is the most obese country in the world as of 2012 with a 26 percent obesity rate despite being a sport loving nation.

29) Approximately 1.35 trillion bottles of wine are produced by Australia.

30) Former Prime Minister of Australia, Kevin Rudd's national apology to Indigenous Australians in 2007 is viewed by many as a major milestone in reconciliation.

31) The hold of the old White Australia Policy was broken by Gough Whitlam's Labor Government, which adopted a broader approach to citizenship and opening migration to Asia and the Middle East.

32) Australian TV networks love cooking shows, airing one after another upon viewership success of My Kitchen Rules and MasterChef.

33) Canberra was selected as the capital because Sydney and Melbourne could not stop arguing which city should be the capital of Australia.

34) Australians refer to English people as Pome, which is actually the acronym for Prisoners of Mother England.

35) Ugg boots or as local call them 'very ugly boots' are an Australian design where a sheepskin has been turned inside out and made into a boot.

36) Melbourne topped 140 rivals to be crowned the world's most liveable city 2 years in a row since 2011.

37) The only place in the world where you can still find the lung fish which is a living fossil from the Triassic period 350 million years ago.

38) The sports capital of the world has 70 percent of its total population participating at least once a week in a particular recreational activity or sport.

39) Despite having a convict colony history, Australia's homicide rate is 1.2 per 100,000 population compared to the 6.3 per 100,000 in the United States.

40) 80 percent of Australians believe Australia has a strong culture and identity characterised by being down to earth, mateship, honesty, sports and multiculturalism based on research organised by the Australia Day Council of NSW in 2008.

Taken from: <http://www.weekendnotes.com/interesting-facts-about-australia/>

Part 2.

1. Did you know that Rodney Brooks, a famous roboticist, comes from Australia? What do you know about him and his approach in robotics?

2. Read an extract from Rodney Brooks's report at IEEE Spectrum.

I am a machine. So are you

Of all the hypotheses I've held during my 30-year career, this one in particular has been central to my research in robotics and artificial intelligence. I, you, our family, friends, and dogs--we all are machines. We are really sophisticated machines made up of billions and billions of biomolecules that interact according to well-defined, though not completely known, rules deriving from physics and chemistry. The biomolecular interactions taking place inside our heads give rise to our intellect, our feelings, our sense of self.

I'm far from alone in my conviction that one day we will create a human-level artificial intelligence, often called an artificial general intelligence, or AGI. I expect the AGIs of the future--embodied, for example, as robots that will roam our homes and workplaces--to emerge gradually and symbiotically with our society. At the same time, we humans will transform ourselves. We will incorporate a wide range of advanced sensory devices and prosthetics to enhance our bodies. As our machines become more like us, we will become more like them.

And I'm an optimist. I believe we will all get along.

Like many AI researchers, I've always dreamed of building the ultimate intelligence. As a longtime fan of *Star Trek*, I have wanted to build Commander

Data, a fully autonomous robot that we could work with as equals. Over the past 50 years, the field of artificial intelligence has made tremendous progress. Today you can find AI-based capabilities in things as varied as Internet search engines, voice-recognition software, adaptive fuel-injection modules, and stock-trading applications. But you can't engage in an interesting heart-to-power-source talk with any of them.

At this point, I can guess what you're wondering. What will AGIs look like and when will they be here? What will it be like to interact with them? Will they be sociable, fun to be around?

I believe robots will have myriad sizes and shapes. Many will continue to be simply boxes on wheels. But I don't see why, by the middle of this century, we shouldn't have humanoid robots with agile legs and dexterous arms and hands. You won't have to read a manual or enter commands in C++ to operate them. You will just speak to them, tell them what to do. They will wander around our homes, offices, and factories, performing certain tasks as if they were people. Our environments were designed and built for our bodies, so it will be natural to have these human-shaped robots around to perform chores like taking out the garbage, cleaning the bathtub, and carrying groceries.

Will they have complex emotions, personalities, desires, and dreams? Some will, some won't. Emotions wouldn't be much of an asset for a bathtub-cleaning robot. But if the robot is reminding me to take my meds or helping me put the groceries away, I will want a little more personal interaction, with the sort of feedback that lets me know not just whether it's understanding me but how it's understanding me. So I believe the AGIs of the future will not only be able to act intelligently but also convey emotions, intentions, and free will.

So now the big question is: Will those emotions be real or just a very sophisticated simulation? Will they be the same kind of stuff as our own emotions? All I can give you is my hypothesis: the robot's emotional behavior can be seen as the real thing. We are made of biomolecules; the robots will be made of something else.

From there it's only a short step to the question I'm asked over and over again: Will machines become smarter than us and decide to take over?

I don't think so. To begin with, there will be no "us" for them to take over from. We, human beings, are already starting to change ourselves from purely biological entities into mixtures of biology and technology. My prediction is that we are more likely to see a merger of ourselves and our robots before we see a standalone superhuman intelligence.

Our merger with machines is already happening. We replace hips and other parts of our bodies with titanium and steel parts. More than 50 000 people have tiny computers surgically implanted in their heads with direct neural connections to their cochleas to enable them to hear. In the testing stage, there are retina microchips to restore vision and motor implants to give quadriplegics the ability to control computers with thought. Robotic prosthetic legs, arms, and hands are becoming more sophisticated. I don't think I'll live long enough to get a wireless Internet brain implant, but my kids or their kids might.

And then there are other things still further out, such as drugs and genetic and neural therapies to enhance our senses and strength. While we become more robotic, our robots will become more biological, with parts made of artificial and yet organic materials. In the future, we might share some parts with our robots.

We need not fear our machines because we, as human-machines, will always be a step ahead of them, the machine-machines, because we will adopt the new technologies used to build those machines right into our own heads and bodies. We're going to build our robots incrementally, one after the other, and we're going to decide the things we like having in our robots--humility, empathy, and patience--and things we don't, like megalomania, unrestrained ambition, and arrogance. By being careful about what we instill in our machines, we simply won't create the specific conditions necessary for a runaway, self-perpetuating artificial-intelligence explosion that runs beyond our control and leaves us in the dust.

When we look back at what we are calling the singularity, we will see it not as a singular event but as an extended transformation. The singularity will be a period in which a collection of technologies will emerge, mature, and enter our environments and bodies. There will be a brave new world of augmented people, which will help us

prepare for a brave new world of AGIs. We will still have our emotions, intelligence, and consciousness.

And the machines will have them too.

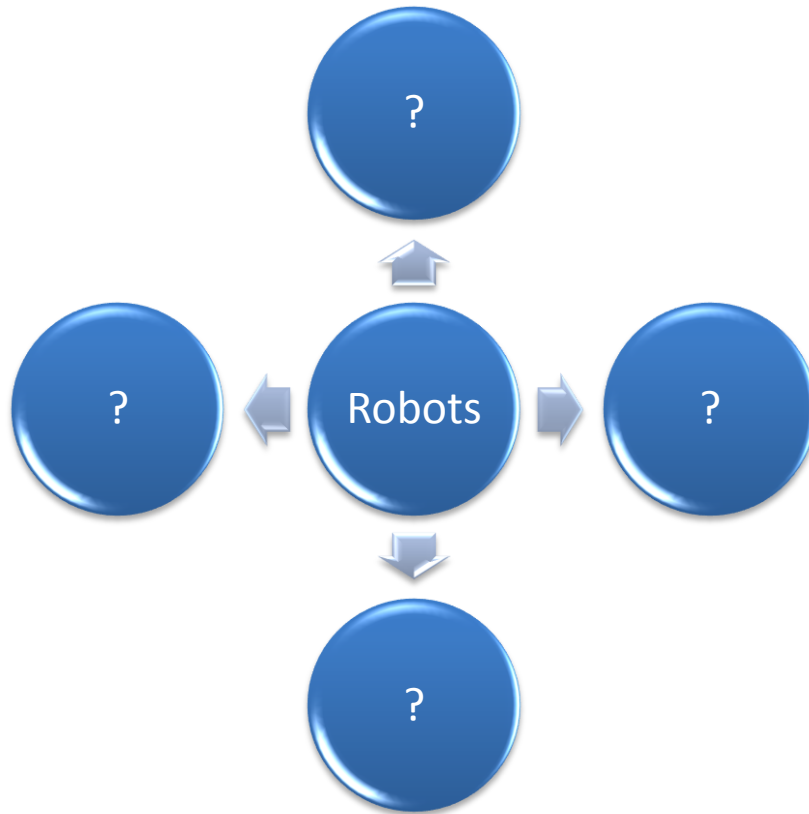
*RODNEY BROOKS is a machine. Or so he says in his article. A professor at the Massachusetts Institute of Technology, he researches the engineering of intelligent robots capable of operating in real-world environments and how to understand human intelligence by building humanoid robots. Brooks is also the chief technical officer of iRobot Corp.

Taken from: <http://spectrum.ieee.org/computing/hardware/i-rodney-brooks-am-a-robot>

3. Make up a plan to the text and try to write a short summary of the text, using one sentence for each item of the plan.

4. Using external resources find information about famous roboticists and prepare a presentation for you group.

5. *What words come to your mind when you hear the word 'robot'.*



6. *Before reading the text about Artificial intelligence and robots discuss in small groups what movies that feature robots you remember and which of them are your favourite ones.*

Artificial intelligence

What is artificial intelligence? This is a legitimate question. We most certainly will develop neural networks that are intelligent before we develop nets that become conscious. So in attempting to create neural networks that are intelligent or demonstrate intelligence, what criteria should one use to determine if this goal has been achieved? Alan Turing, a British mathematician, devised an interesting procedural test that is generally accepted as a valid way to determine if a machine has intelligence. The test is conducted as follows: A person and the machine hold a conversation by typing messages to one another via a teletype. If the machine can carry on a conversation without the person being able to determine whether a machine or person exists at the other teletype, the machine can be classified as

intelligent. This is called the Turing test and is one criteria used to determine AI. Although the Turing test is well accepted, it isn't a definitive test for AI.



There are a number of “completely dumb” language processing programs that come close to passing the Turing test. The most famous program is named ELIZA, developed by Joseph Weizenbaum at the Massachusetts Institute of Technology (MIT). ELIZA simulates a psychologist, and you are able to conduct a conversation with ELIZA. For instance, if you typed to ELIZA that you missed your father, ELIZA might respond with “Why do you miss your father?” or “Tell me more about your father.” These responses may lead you to believe that ELIZA understands what you have said. It doesn't. The responses are clever programming tricks constructed from your statements. Therefore, if we like, we could do away with the Turing test and consider a different criterion. Perhaps consciousness or selfawareness would be a better signpost of intelligence. A self-aware machine would certainly know that it is intelligent. Another criterion, more simple and direct is the ability to learn from experience. Of course, we could abandon logical approximations entirely and state that intelligence is achieved in systems that develop a sense of humor. As far as I know humans are the only animals that laugh. Perhaps humor and emotion will end up being the truest test of all.

As for intelligence packed in a robot, it takes one or two forms: rule-based (expert) or neural. It's possible for both forms of intelligence to work in tandem. This synthesis of intelligence will be commonly used in robotics to create a robust intelligence system. Expert (rule-based) intelligence programs are familiar to most people; these are programs written in high-level or low-level languages like C, BASIC, and assembly. Neural systems on the other hand do not have a central processing unit (CPU), rather they function on a neural stimulus-response mechanism. The robotic stimulus-response mechanism goes by a number of names, including neural network, behavioral-based robotics, subsumption architecture, and nervous network. William Grey Walter pioneered behavioral-based robotics in the late 1940s. Independent of Walter's work, neural-based robotic response was academically explored and developed in the 1980s by Valentino Braitenberg in his book *Vehicles: Experiments in Synthetic Psychology*. Rodney Brooks at the Massachusetts Institute of Technology (MIT), inspired by work accomplished by Walter, developed his own derivative of stimulus responses he calls "subsumption architecture." Mark Tilden, inspired by work done by Rodney Brooks, founded BEAM robotics, which uses "nervous nets." Behavioral-based robotics is a hot topic and one that will continue to get hotter in the future. In these architectural schemes the stimulus-response mechanisms can be layered on top of one another. A multilayer stimulus-response mechanism can exhibit what appears as strikingly intelligent behavior. One approach is called "topdown intelligence" and the other is called "bottom-up intelligence. The top-down approach attempts to create an expert system or program to perform a controlled search and discover. The bottom-up approach creates "artificial" behavior in the robot and then causes it to explore and discover. At first glance you may not see much of a difference in either approach, but there is one and it's quite significant. If the expert system approaches a situation (or terrain) it hasn't been programmed to handle, it will falter. The behavior system on the other hand isn't looking for any template "programmed" situation to calculate procedures and couldn't care less about the situation; it just goes on exploring. Robotists have

found over the last 30 years of experimentation that bottom-up programming (behavioral-based) is successful many times where top-down programming fails.

Abridged from “[Robots, androids and animatrons](#)” by John Lovine

7. Give Russian equivalents to the words and word combinations below and explain their meaning in your own words.

Indispensable, enhanced, disposal, deposit, limb, margin, surveillance, hazardous, facilitate, remotely, wire, assessment, capacity, precise, resemble, missile, accurate, versatile, day in and day out, appreciate, grab, target, detect, switch, put out, emulate, solder, installation, lever, surgery.

8. Choose 3-5 words that you find hard to memorize and use them in sentences of your own.

9. Questions for class discussion.

1. Is there a difference between a machine, like a microwave, and a robot?
2. Where did the word ‘robot’ come from?
3. How did first robot appear?
4. Do you know who is Isaac Asimov? What did he do?
5. In what sphere (from the ones mentioned in the text) do you think the usage of robots is of special importance?
6. Can you think of any sphere (e.g. nanotechnology) that could exist nowadays without robots?
7. Have you seen usage robots in industry/ design/ maintenance/ medical spheres? What were your impressions? Were you satisfied with their work?
8. Can a robot completely replace a human in some work?
9. Do you think robots will cause unemployment in the future or make more work?
10. Is there a strong robotics industry in your country?
11. Do you feel comfortable with the idea of AI (that robots can think)?
12. Do you think we create a new problem with each invention? Think of examples.

13. Is there anything that does not yet exist that you would like to see invented? What is it?

14. Imagine the job you wish to hold in the future or the one that you are doing now – could a robot be programmed to do that job as well as you?

15. A film like The Matrix has explored the idea that we might be living in virtual reality. But what evidence is there for or against this hypothesis? And what are its implications?

10. What do you know about BEAM robotics? Read the extract from Mark Tilden's letter about the history of robotics and translate it using the dictionary if necessary.

Первый BEAM-робот был сделан после того, как я присутствовал 29 октября 1989 года на лекции Рода Брукса [Родни Брукс - директор Лаборатории искусственного интеллекта в MIT, сооснователь iRobot - прим. myROBOT.ru.] в Университете Ватерлоо (University of Waterloo, Ontario, Canada). Доктор Брукс изложил тогда свой фешенебельный проект "Категориальной архитектуры" ("Subsumption architecture") для управления роботами. Хотя его подход был проще, чем обычные системы искусственного интеллекта (AI), но базировался на серьезных компьютерных вычислениях. Я, помню, нагло спросил: "Если упростить робота, то насколько далеко можно пойти в этом упрощении?" Доктор Брукс ответил, что он уверен в том, что сложность необходима для существования достаточной компетенции в поведении машины. Я имел доказательства иной точки зрения, но не стал настаивать.

Удача сопутствует подготовленному уму. Та лекция только катализировала концепции, навыки и проекты, которые я рассматривал на протяжении многих предыдущих лет. Я задавал себе вопрос: существуют ли минималистичные, элегантные, эффективные, малобюджетные решения для управления автономным роботом? Сколько времени потребуется, чтобы увидеть, как автономный робот в реальном мире разовьется от простого одноклеточного организма до человеческого уровня компетенции?

В следующие месяцы в обители "Биоморфного проекта" (науки, предшествовавшей распространению образовательной базы BEAM) началась суматоха создания роботов, IEEE-лекций, публикаций на досках объявлений и ночных размышлений, которым помогала врожденная склонность к кофе.

Solarover 1.0 появился как эксперимент, предназначенный для того, чтобы увидеть, как недорого можно было построить приводимый в действие светом и ищущий свет автономный ровер из б/у частей, а заодно посмотреть, как он будет собирать пыль на полу в результате своих брайтенбергообразных странствий.

Первый из многих в том году, я продолжал строить множество подобных роботов, основанных на примитивных нейронах и солнечных двигателях, которые привели к появлению BEAM International Robot games, международным лекциям в 1992 году на Конференции по Искусственной жизни в Санта Фе (Santa Fe Artificial Life conference), где я читал лекции рядом с Бруксом; публикациям, книгам, телевизионным передачам, комплектам Соларботикс, исследованиям в Лос-Аламосовской лаборатории (Los Alamos National Laboratory) и NASA, а затем к широкой линии роботов в компании WooWee, которых было продано около 20 миллионов до настоящего времени. К этому надо прибавить тысячи самодельных BEAM-роботов, созданных коллегами, энтузиастами и приверженцами стимпанка по всему миру.

В это Рождество можно будет увидеть презентацию быстрого и забавного гуманоидного робота Joebot на полках магазинов игрушек во всем мире. Joebot способен ходить, говорить, видеть, слышать и будет стоять меньше, чем один единственный сервомотор от Asimo. Прототип Joebot был создан полностью по BEAM-технологии, прежде чем его поведение было переведено в микропроцессор для массового изготовления: биоморфная нейронная сеть (the Biomorphic Nervous network), включающая менее 80 транзисторов в симметрическом, самоорганизующемся множестве изготовленных на заказ печатных плат.

Taken from: http://myrobot.ru/articles/hist_first_beambot.php

11. Imagine that you are a magazine interviewer, you are to write an article about robots. Include an imaginary interview with a robot.

Unit 4. SCOTLAND

Part 1.

1. What can you tell immediately about Scotland? What facts occur to you when you hear “Scotland”?

Scotland – what does it look like?

1. Geographical position

Scotland, administrative division of the kingdom of Great Britain, occupying the northern third of the island of Great Britain. Scotland is bounded on the north by the Atlantic Ocean; on the east by the North Sea; on the southeast by England; on the south by Solway Firth, which partly separates it from England, and by the Irish Sea; and on the west by North Channel, which separates it from Ireland, and by the Atlantic Ocean.

As a geopolitical entity Scotland includes 186 nearby islands, the majority of which are contained in three groups-namely, the Hebrides, also known as the Western Islands, situated off the western coast; the Orkney Islands, situated off the northeastern coast; and the Shetland Islands, situated northeast of the Orkney Islands. The largest of the other islands is the Island of Arran. The area, including the islands, is 78,772 sq km (30,414 sqmi).

Scotland has a very irregular coastline. The western coast in particular is deeply penetrated by numerous arms of the sea, most of which are narrow submerged valleys, known locally as sea lochs, and by a number of broad indentations, generally called firths. The principal firths are the Firth of Lorne, the Firth of Clyde, and Solway Firth.

Scotland is characterized by an abundance of streams and lakes (lochs). Notable among the lakes, which are especially numerous in the central and northern regions, are Loch Lomond (the largest), Loch Ness, Loch Tay, and Loch Katrine.

Many of the rivers of Scotland, in particular the rivers in the west, are short, torrential streams, generally of little commercial importance. The longest river of Scotland is the Tay; the Clyde, however, is the principal navigational stream, site of the port of Glasgow. Other chief rivers include the Forth, Tweed, Dee, and Spey.

2. Climate

Like the climate of the rest of Great Britain, that of Scotland is subject to the moderating influences of the surrounding seas. As a result of these influences, extreme seasonal variations are rare, and temperate winters and cool summers are the outstanding climatic features. Low temperatures however, are common during the winter season in the mountainous districts of the interior. In the western coastal region, which is subject to the moderating effects of the Gulf Stream, conditions are somewhat milder than in the east.

3. Plant and Animal Life

The most common species of trees indigenous to Scotland are oak and conifers-chiefly fir, pine, and larch. Large forested areas, however, are rare, and the only important woodlands are in the southern and eastern Highlands. Except in these wooded areas, vegetation in the elevated regions consists largely of heather, ferns, mosses, and grasses. Saxifrage, mountain willow, and other types of alpine and arctic flora occur at elevations above 610 m (2000 ft). Practically all of the cultivated plants of Scotland were imported from America and the European continent.

The only large indigenous mammal in Scotland is the deer. Both the red deer and the roe deer are found, but the red deer, whose habitat is the Highlands, is by far the more abundant of the two species. Other indigenous mammals are the hare, rabbit, otter, ermine, pine marten, and wildcat. Game birds include grouse, blackcock, ptarmigan, and waterfowl. The few predatory birds include the kite, osprey, and golden eagle. Scotland is famous for the salmon and trout that abound in its streams

and lakes. Many species of fish, including cod, haddock, herring, and various types of shellfish, are found in the coastal waters.

4. Natural Resources

Scotland, like the rest of the island of Great Britain, has significant reserves of coal. It also possesses large deposits of zinc, chiefly in the south. The soil is generally rocky and infertile, except for that of the Central Lowlands. Northern Scotland has great hydroelectric power potential and contains Great Britain's largest hydroelectric generating stations. Beginning in the late 1970s, offshore oil deposits in the North Sea became an important part of the Scottish economy. The most important city here is Aberdeen which is the oil centre of the country. Ships and helicopters travel from Aberdeen to the North Sea oil rigs. Therefore, Scotland is rather rich in natural resources and sometimes can even condition to England.

5. Population

The people of Scotland, like those of Great Britain in general, are descendants of various racial stocks, including the Picts, Celts, Scandinavians, and Romans. Scotland is a mixed rural-industrial society. Scots divide themselves into Highlanders, who consider themselves of purer Celtic blood and retain a stronger feeling of the clan, and Lowlanders, who are largely of Teutonic blood.

6. Scotland's government.

Government in Scotland is in four tiers. A new Scottish Parliament was elected in 1999, following devolution of powers from the United Kingdom Parliament in London. This is the first time Scotland has had its own parliament in 300 years. The Scottish Parliament, which sits in Edinburgh, is responsible for most aspects of Scottish life. The national parliament in Westminster (London) retains responsibility for areas such as defence, foreign affairs and taxation. The European Parliament in Brussels (Belgium) exercises certain powers vested in the European Union.

The Scottish Parliament is supported by the Scottish Executive also based in Edinburgh. The Scottish Government is led by a First Minister. A Secretary of State for Scotland remains part of the UK Cabinet, and is supported by the Scotland Office

(previously the Scottish Office) based in Glasgow, with offices in Edinburgh and London.

Local government is divided into 29 unitary authorities and three island authorities, having been subject to a major reorganization in 1995.

Scotland has its own legal system, judiciary and an education system which, at all levels, differs from that found “south of the border” in England and Wales.

Scotland also has its own banking system and its own banknotes. Edinburgh is the second financial centre of the UK and one of the major financial centres of the world.

2. Check how much information about Scotland you remember. Answer the questions on the texts.

1. Where exactly are the Western Islands, the Shetland Islands and the Orkney Islands situated?
2. What do firths and lochs mean?
3. How can you describe the climate of Scotland? Recall 5 adjectives that can describe it.
4. How do Scotland’s flora and fauna differ from the Russian’s one?
5. What natural resources is Scotland famous for?
6. Who in Scotland consider themselves of purer Celtic blood?
7. When was a new Scottish Parliament elected?
8. What is the Scottish Parliament responsible for?

Scotland’s beautiful capital.

Edinburgh, the capital of Scotland, is one of the most beautiful cities in Europe. This distinction is partly an accident of Nature, for the city is built upon jumble of hills and valleys; however, during the eighteenth and nineteenth centuries the natural geography was enhanced by the works of a succession of distinguished Georgian and Victorian architects.

Evidence that Stone Ages settlers lived in Edinburgh has been found on Calton Hill [7] , Arthur's Seat [8] and Castlehill, and the town's early history centres around Castlehill. Some historians believe that this volcanic hill was a tribal stronghold as early as 600 BC.

One tribe who definitely made their mark were a group of Nothumbrians, whose 7th -century king Edwin [9], is thought to have given his name to the castle and town. "Burgh" is a Scottish word for borough (a small town).

Where life is one long festival.

Edinburgh may be called the Athens of the North, but from mid-August to early September that's probably because it's hot, noisy and overpriced – and crawling with foreign students.

Over the next three weeks the population will double as half a million visitors invade Britain's most majestic city.

If you are a theatre buff or a comedy fan, Edinburgh at Festival time [15] will be your idea of heaven. But the city is a centre for culture all year round.

In the run-up to Christmas there are hundreds of shows, including Noel Coward's *Relative Values* at the King's Theatre and the Anatomy Performance Company's dance theatre at the Traverse. *Romeo and Juliet* is at the Traverse, *Les Miserables* at the Playhouse and *The Recruiting Officer* at the Lyceum. And outside Festival time, you'll find it a lot easier to get tickets.

As for the visual arts, Edinburgh's museums more than match any of the special exhibitions mounted during the Festival.

Most attractive is the Scottish National Gallery of Modern Art, in a stately home on the outskirts of the city. Here you can find unbeatable masterpieces created by Picasso, Matisse and Hockney.

If shopping is more your style, Jenners [16], on Princes Street, is Edinburgh's answer to Harrods. And the Scottish Gallery on George Street is a happy hunting ground for collectors of fine art. Edinburgh is full of good hotels but its dramatic skyline is dominated by two enormous hostelryes at either end of Princes Street. The

Caledonian and the Balmoral (formerly the North British) were built by rival railway companies in the days when competing steam trains raced from London.

You can also have a look at the Gothic monument to Sir Walter Scott, which stands in East Princes Street Gardens and was begun in 1840. It is rather high, and narrow staircase (a total of 287 steps in several stages) offers spectacular views of the city. Not far from the monument in Princes Street Gardens one can find the oldest Floral Clock in the world, built in 1903, consisting of about 25,000 flowers and plants.

Like all the best capitals, Edinburgh boasts cosmopolitan influences. Asian shopkeepers sell Samosas and Scotch (mutton) pies in the same thick Scots brogue, and the city is littered with Italian restaurants.

The city has three universities: the University of Edinburgh (1583), Herriot-Watt [17] (established in 1885; received university status in 1966) and Napier [18] University.

Edinburgh is also an industrial centre. Its industries include printing, publishing, banking, insurance, chemical manufacture, electronics, distilling, brewing.

“Scottishness”

Oh Scotia! My dear, my native soil!

Robert Burns

Scotland is a country of great variety with its own unique character and strong tradition. Its cities offer a mixture of designer lifestyle and age old tradition, while the countryside ranges from Britain’s highest mountains and waterfalls to the most stunning gorges and glens.

Scotland’s national tradition is rather intense and much alive even now and is rather rare in the modern world. Scotland is part of Britain. But it is not England. The Scottishness is a real thing, not an imaginary feeling, kind of picturesque survival of the past. It is based on Scot’s law which is different from the English. Scotland has its

own national heroes fought in endless battles against the English (William Wallace, Sir John the Grahame , Robert Bruce and others).

'A wee dram'

Scots have their own national drink, and you need only ask for Scotch, and that's quite enough, you get what you wanted. More than half of Scotland's malt whisky distilleries are in the Grampian Highlands, and thus a third of the world's malt whisky is distilled here. A combination of fertile agricultural land, a sheltered, wet climate and the unpolluted waters of the River Spey and its tributaries, combined with the obvious enthusiasm of the locals for the work (and the product!) mean it is an ideal place to produce malt whisky. Many distilleries are open to visitors, and often offer samples!

The Scots are fond of the following joke about scotch:

A young man arrives in a small village situated near Loch Ness. There he meets an old man and asks him:

- When does the Loch Ness Monster usually appear?
- Usually it appears after the third glass of Scotch, - answered the man.

Scottish national dress

There is also a distinctive national dress, the kilt. Strictly speaking it should be worn only by men; it is made of wool and looks like a pleated skirt. The kilt is a relic of the time when the clan system existed in the Highlands. But its origin is very ancient. The Celtic tribes who fought Caesar wore kilts. When the Celts moved north up through Cornwall, and Wales, and Ireland, and eventually to Scotland, they brought the kilt with them. A thousand years ago, there was nothing specially Scottish about it. Now it has become the Highland's national dress and is worn in many parts of Scotland. It is probably the best walking-dress yet invented by man: there is up to 5 metres of material in it; it is thickly pleated at the back and sides; it is warm, it is airy, leaves the legs free for climbing; it stands the rain for hours before it gets wet through; it hangs well above the mud and the wet grass; briefly it is warm for a cold day, and cool for a warm one. And, what is more, if a Highlander is caught

in the mountains by the night, he has but to unfasten his kilt and wrap it around him – 5 metres of warm wool – he'll sleep comfortably enough the night through.

A few words about tartan

Every Scottish clan had its own tartan [19]. People in Highlands were very good weavers. They died their wool before weaving it; the dyes were made from various roots and plants which grew in this or that bit of land. Therefore one clan dyed its wool in reddish colours, another in green, and so on. And they decorated them differently so as to distinguish the clansmen in battle (especially between neighboring clans which happened rather often).

On the subject of shopping for tartan, the choice is wide. Some designs are associated with particular clans and retailers will be happy to help you find “your” own pattern. By no means all tartans belong to specific clans – several are “district” tartans, representing particular areas. The fascinating story of the tartan itself is told at the Museum of Scottish Tartans.

The museum possesses lots of rare exhibits. One of them is the remarkable woman's Plaid or Arisaid, the oldest dated in the world: 1726. The Arisaid, worn only by women, reached from head to heels, belted at the waist and pinned at the breast.

The oldest piece of Tartan found in Scotland dates back from about 325 AD. The cloth was found in a pot near Falkirk [20], a simple check in two shades of brown, a long way from the checked and coloured tartans that came to be worn in the Highlands of Scotland in the 1550s. There are now over 2,500 tartan designs, many of them are no more than 20 years old.

The national musical instrument of the Scots

Scotland has its own typical musical instrument, the pipes (sometimes called the bagpipes). The bagpipe was known to the ancient civilizations of the Near East. It was probably introduced into Britain by the Romans. Carvings of bagpipe players on churches and a few words about them in the works of Chaucer and other writers show that it was popular all over the country in the Middle Ages.

In Scotland the bagpipe was first recorded in the 16th century during the reign of James I, who was a very good player, and probably did much to make it popular. For long it has been considered a national Scottish instrument. Even now it is still associated with Scotland.

The sound of the bagpipes is very stirring. The old Highland clans and later the Highland regiments used to go into battle to the sound of the bagpipes.

The bagpipe consists of a reed pipe, the “chanter”, and a wind bag which provides a regular supply of air to the pipe. The wind pipe is filled either from the mouth or by a bellows which the player works with his arm. The chanter has a number of holes or keys by means of which the tune is played.

Highland’s dances and games

You can also find in Scotland its own national dances, Highland dances and Scottish country dances; its own songs (some of which are very popular all over Britain), its poetry (some of which is famous throughout the English-speaking world), traditions, food and sports, even education, and manners.

Speaking about sports we can’t but mention Highland Gatherings or Games held in Braemar. They have been held there since 1832, and since Queen Victoria visited them in 1848 the games have enjoyed royal patronage. The Games consist of piping competitions, tugs-of-war (a test of strength in which two teams pull against other on a rope, each trying to pull the other over the winning line), highland wrestling and dancing, and tossing the caber [21].

The famous Loch Ness

Fact or fiction, the Loch Ness monster is part of Loch Ness’s magnetic appeal to visitors. But there is much more to do and see around the shores of this famous waterway than just monster-spotting, and a pleasant day, or even longer, can be spent exploring the many activities. 24 miles long, a mile wide and up to 700 feet deep Loch Ness is a land-locked fresh water lake lying at the eastern end of the Great Glen [22], a natural geological fault which stretches across the width of Scotland. The loch forms part of the Caledonian Canal completed by the celebrated civil engineer Thomas Telford (1757 – 1841), in 1822. Telford took 19 years to build the canal,

which spared coastal shipping and fishing vessels a voyage through the waters of the Pentland Firth [23].

The story of Nessiteras Rhombopteryx or Nessie for short in Loch Ness has persisted down the centuries. The monster was first mentioned in AD 565 when St Columba allegedly persuaded it not to eat someone. Since records began, in 1933, more than 3000 people have claimed to have seen it, but others are skeptical. They point out that no good photographs exist of the monster, that there have been no eggs found, no dead monsters (can it really be 2563 years old?) nor any other compelling evidence. Believers think the monster is a plesiosaur, an otherwise extinct sea-dwelling reptile. Anyone who did prove conclusively the monster's existence would be hailed as a pioneer, so it is no surprise to learn that monster-spotting is a popular pastime!

The Official Loch Ness Monster Centre is opened all year round and has exhibits showing geology, prehistory and history of Scotland, along with SONAR records and underwater photography relating to the monster.

The Original Visitor Centre offers a half hour video of the monster detailing the research that has taken place, along with a video about Bonnie Prince Charlie.

The loch has been surveyed for decades, by the RAF [24], eminent scientists, cranks, crackpots, mini-submarines and millions of pounds worth of high technology, including NASA [25] computers. And still there is no proof...

Saint Andrew's cross

The Church of Scotland, a Presbyterian [26] denomination, is the official state church. The Roman Catholic church is second in importance. Other leading denominations are the Episcopal Church in Scotland, Congregationalist, Baptist, Methodist, and Unitarian. Jews are a small minority.

St. Andrew's cross is the national flag of Scotland. It consists of two diagonal white stripes crossing on a blue background. The flag forms part of the British national flag (Union Jack).

The flag of Presbyterian Church differs a little bit from that of Scotland. It is also St. Andrew's cross but with a little addition: it has a burning bush centered, which signifies presbyterianism.

The symbol comes from the motto of the Presbyterian Church, *nec tamen consumebatur* (neither was it consumed) referring the bush that burnt, but was not consumed, so will be the church that will last for ever.

St. Andrew is the patron saint of Scotland. He was a New Testament apostle who was martyred on an X-shaped cross. He was said to have given the Pictish army a vision of this cross at the battle of Athenstoneford between King Angus of the Picts and King Authelstan of the Angles. St. Andrew was foisted upon Scotland as its patron when the old Celtic and Culdee centres were superseded by the new bishopric of St. Andrew's. His feast-day is 30 November. On this day some Scotsmen wear a thistle [27] in the buttonhole.

One of the greatest treasures of Huntly House Museum (Edinburgh) is the national Covenant, signed by Scotland's Presbyterian leadership in 1638. Covenanters are 17th century Scottish Presbyterians who bound themselves by covenants to maintain Presbyterianism as the sole religion of Scotland and helped to establish the supremacy of Parliament over the monarch in Scotland and England. Early covenants supporting Protestantism were signed in 1557 and in 1581. In 1638 the covenant of 1581 was revived, and its signatories added a vow to establish Presbyterianism as the state religion of Scotland.

Scotland for every season

If you hunt for the real Scotland, there will be many times when you know you have found it: when you hear your first Highland Piper with the backdrop of Edinburgh Castle; on some late, late evening on a far northern beach as the sun sets into a midsummer sea; or with your first taste of a malt whisky, peat-smoked and tangy; or when you sit in a café with the real Scots. By the way, the Scots are very sociable people. They like to spend their free time together, drinking coffee or scotch and talking. Scottish people are fond of singing at the national music festivals in

chorus, at the fairs and in the parks. Most of Scotsmen are optimists. They don't lose their heart and smile in spite of all difficulties.

The real Scotland is not found in a single moment – nor is it contained in a single season. Though the moorlands turn purple in summer, Scotland in spring is famed for its clear light and distant horizons, while autumn's colours transform the woodlands... and what could be more picturesque than snow-capped hills seen from the warmth of your hotel room?

Scenery, history, hospitality, humour, climate, traditions are offered throughout the year.

Even if you can feel it now you should visit Scotland all the same, and see and enjoy this magic country with your own eyes!

Taken from "Discovering Britain" Pavlozky V. M., St Petersburg, 2000.

3. Find the words in the text that have the similar meaning.

Differentiation, improve, remarkable, distinctly, town, costly, imposing, attractiveness, title, represent, remote, great, colourful, detached.

4. Check how much information you remember. Answer the questions on the texts.

1. What was the Beaker civilization famous for?
2. Why was it so difficult to control the Highlands and islands?
3. To whom does Scotland owe its clan system?
4. Why did Edward I stole the Stone of Destiny?
5. What do the words written on Edward's grave mean?
6. Can you explain the name of Scotland's capital, Edinburgh?
7. What giant thing can Edinburgh Castle boast?
8. What did the Military Tattoo originally mean?
9. Who brought St. Giles' Cathedral into great prominence?
10. What is the emblem of Scotland? Where can it be seen?
11. Why are the Royal Museum and the Museum of Scotland worth visiting?
12. Which museum in Scotland is the "noisiest" in the world? Why?

13. Why do they call Edinburgh “the Athens of the North”?
14. What is Edinburgh’s answer to London’s Oxford Street?
15. Where did the national Scottish dress come from?
16. Why was it so important to decorate wool differently?
17. What is the real origin of the bagpipe?
18. What does the motto of the Presbyterian Church mean?

Part 2.

1. Answer the questions.

1. Do you know what fax is? What’s it for?
2. Have you ever used it?
3. Can you describe how fax works?
4. Do you know anything about its origin?

2. Study the following vocabulary.

facsimile [fæk'simɪlɪ] - факсими́ле

bitmap - битовая карта

receiving - принимающий

commercial - коммерческий

require [rɪ'kwaɪə] - требовать

manual plotting – начерченный вручную

widespread – широко-распространенный

competitor [kəm'pɛtɪtə] - конкурент

verification [vɛrɪfɪ'keɪʃən] - проверка

suitable - уютный

increasing - повышение

graphemic reasons – по причинам, связанных с графикой

ubiquitous [ju:'bɪkwɪtəs] - вездесущий

occasionally – время от времени

ISDN (Integrated Services Digital Network) - цифровая сеть с интеграцией служб

3. Read the text.

Fax

Fax (short for facsimile), sometimes called telefax, is the telephonic transmission of scanned printed material (both text and images), normally to a telephone number connected to a printer or other output device. The original document is scanned with a fax machine, which processes the contents (text or images) as a single fixed graphic image, converting it into a bitmap, and then transmitting it through the telephone system in the form of audio-frequency tones. The receiving fax machine interprets the tones and reconstructs the image, printing a paper copy. Early systems used direct conversions of image darkness to audio tone in a continuous or analog manner. Since the 1980s, most machines modulate the transmitted audio frequencies using a digital representation of the page, which is compressed to quickly transmit areas which are all-white or all-black.

Scottish inventor Alexander Bain worked on chemical mechanical fax type devices and in 1846 was able to reproduce graphic signs in laboratory experiments. He received patent 9745 on May 27, 1843 for his “Electric Printing Telegraph.” Frederick Bakewell made several improvements on Bain's design and demonstrated a telefax machine. The Pantelegraph was invented by the Italian physicist Giovanni Caselli. He introduced the first commercial telefax service between Paris and Lyon in 1865, some 11 years before the invention of the telephone.

In 1881, English inventor Shelford Bidwell constructed the scanning phototelegraph that was the first telefax machine to scan any two-dimensional original, not requiring manual plotting or drawing. Around 1900, German physicist Arthur Korn invented the Bildtelegraph, widespread in continental Europe especially, since a widely noticed transmission of a wanted-person photograph from Paris to London in 1908, used until the wider distribution of the radiofax. Its main competitors were the Bélinographe by Édouard Belin first, then since the 1930s the Hellschreiber, invented in 1929 by German inventor Rudolf Hell, a pioneer in mechanical image scanning and transmission.

The 1888 invention of the telautograph by Elisha Grey marked a further development in fax technology, allowing users to send signatures over long distances, thus allowing the verification of identification or ownership over long distances.

On May 19, 1924, scientists of the AT&T Corporation “by a new process of transmitting pictures by electricity” sent 15 photographs by telephone from Cleveland to New York City, such photos suitable for newspaper reproduction. Previously, photographs had been sent over the radio using this process.

The Western Union “Deskfax” fax machine, announced in 1948, was a compact machine that fit comfortably on a desktop, using special spark printer paper.

Although businesses usually maintain some kind of fax capability, the technology has faced increasing competition from Internet-based alternatives. In some countries, because electronic signatures on contracts are not yet recognized by law, while faxed contracts with copies of signatures are, fax machines enjoy continuing support in business. In Japan, faxes are still used extensively for cultural and graphemic reasons and are available for sending to both domestic and international recipients from over 81% of all convenience stores nationwide. Convenience-store fax machines commonly print the slightly re-sized content of the sent fax in the electronic confirmation-slip, in A4 paper size.

In many corporate environments, freestanding fax machines have been replaced by fax servers and other computerized systems capable of receiving and storing incoming faxes electronically, and then routing them to users on paper or via an email (which may be secured). Such systems have the advantage of reducing costs by eliminating unnecessary printouts and reducing the number of inbound analog phone lines needed by an office.

The once ubiquitous fax machine has also begun to disappear from the small office and home office environments. Remotely hosted fax-server services are widely available from VoIP and e-mail providers allowing users to send and receive faxes using their existing e-mail accounts without the need for any hardware or dedicated fax lines. Personal computers have also long been able to handle incoming and outgoing faxes using analogue modems or ISDN, eliminating the need for a stand-

alone fax machine. These solutions are often ideally suited for users who only very occasionally need to use fax services. There are 17 million fax machines in the US, about one every 4.47 square miles.

4. Try to match the definition with the correct word with your partner.

1	available	A	the state or quality of being suitable or opportune
2	advantage	B	to change the tone, pitch, or volume of
3	reduce	C	the number of times that an event occurs within a given period; rate of recurrence
4	eliminate	D	establishment of the correctness of a theory, fact, etc.
5	recipient	E	to continue or retain; keep in existence
6	frequency	F	to make or become smaller in size, number, extent, degree, intensity, etc.
7	maintain	G	a person who or thing that receives
8	modulate	H	superior or more favourable position or power
9	verification	I	to remove or take out; get rid of
10	convenience	J	obtainable or accessible; capable of being made use of; at hand

5. Fill in the missing words.

verb	noun		noun	adjective
recognize			culture	

	elimination			necessary
reduce			commerce	
	introduction			superior
confirm			security	
	interpretation			available
exist			disappear	

6. Fill in the missing words.

1) Fax (short for facsimile) _____ called telefax, is the telephonic transmission of scanned printed material.

- a) usually b) sometimes c) anytime

2) Frederick Bakewell made _____ improvements on Bain's design and demonstrated a telefax machine.

- a) another b) some c) several

3) The Western Union "Deskfax" fax machine, announced in 1948, was a compact machine that fit comfortably on a desktop, using special _____ printer paper.

- a) spark b) white c) pure

4) The once _____ fax machine has also begun to disappear from the small office and home office environments.

- a) widespread b) ubiquitous c) omnipresent

5) These _____ are often ideally suited for users who only very occasionally need to use fax services.

- a) addressing b) judgment c) solutions

7. Match the sentence halves.

1) He introduced the first commercial	a) eliminating the need for a
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telex service between Paris and Lyon in 1865,	stand-alone fax machine.
2) Its main competitors were the Béliographe by Édouard Belin first, then since the 1930s the Hellschreiber	b) invented in 1929 by German inventor Rudolf Hell, a pioneer in mechanical image scanning and transmission.
3) In many corporate environments, freestanding fax machines have been replaced by fax servers and other computerized systems capable of receiving and storing incoming faxes electronically,	c) some 11 years before the invention of the telephone
4) Personal computers have also long been able to handle incoming and outgoing faxes using analogue modems or ISDN,	d) and then routing them to users on paper or via an email (which may be secured).
5) In Japan, faxes are still used extensively for cultural and graphemic reasons and	e) are available for sending to both domestic and international recipients from over 81% of all convenience stores nationwide.

8. Find English equivalents from the text to the following words and word combinations.

Телефонная передача; как правило; принтер или другое устройство вывода; обрабатывать содержание; воспроизводить графические знаки; сделать несколько улучшений; не требует ручного чертежа или рисунка; широко-распространенные передачи; дополнительно; отправлять подписи; слегка; стоящий отдельно факс-аппарат; неограниченные телефонные линии; входящие и исходящие факсы; автономные; квадратные мили.

9. Answer the questions.

- 1) When was fax invented?
- 2) Who invented fax?
- 3) What do you think fax is a necessary technology for humanity?
- 4) What kind of technology did fax continue?
- 5) What is the most important difference between fax and telephone?
- 6) Do you think fax will exist in the nearest future?

Text 1. A short history of Canada

By Tim Lambert

The discovery of Canada

The first people in Canada crossed the Bering Straits from Asia. In the north the Inuit lived by hunting seals, walruses and whales. They also hunted caribou. On the west coast people hunted deer, bear and beaver. They also fished. On the plains people lived by hunting buffalo. In the east people grew crops of beans, squash, maize and sunflower seeds.

The first Europeans to reach Canada were the Vikings. In 986 a Viking called Bjarni Herjolfsson was blown off course by a storm and he spotted a new land. However he sailed away without landing. In 1001 a man named Leif Eriksson landed in the new land, which he named Vinland (it was part of Canada). However Eriksson did not stay permanently. Later the Vikings did establish a colony in North America but they abandoned it because of conflict with the natives.

However after the Vikings Canada was forgotten until the end of the 15th century. In 1497 the English king Henry VII sent an Italian named Jean Cabot on an expedition across the Atlantic to Newfoundland. Cabot discovered rich fishing waters off the coast of Canada.

Then in 1534 and in 1535-36 a Frenchman named Jacques Cartier (1491-1557) sailed on two expeditions to Canada. On 10 August 1535 (St Lawrence's Day) he sailed into the St Lawrence River, which he named after the saint.

Canada in the 17th century

However no permanent European settlements were made in Canada until the early 17th century. In 1603 a Frenchman named Samuel de Champlain (1567-1635) sailed up the St Lawrence River. In 1604 he founded Port Royal in Acadia (Nova Scotia). In 1608 de Champlain founded Quebec. (The name Quebec is believed to be an Algonquin word meaning a narrow part of a river). In 1642 the French founded Montreal. The new colony in Canada was called New France. By 1685 the population of New France was about 10,000. By 1740 it was 48,000.

In the early 17th century French missionaries such as the Jesuits attempted to convert the natives of Canada to Christianity - without much success. Meanwhile the French settlers traded with the natives for furs and farmed the land. Unfortunately they also brought European diseases like smallpox, to which the natives had no resistance.

However the English were also interested in Canada. In 1610 Henry Hudson discovered Hudson Bay. (In 1611 his crew mutinied and set him adrift). In 1631 Thomas James led another expedition. James Bay is named after him. Then in 1629 the English captured Quebec. However it was returned to France in 1632.

In 1670 the English founded the Hudson Bay Company. The company was given exclusive rights to trade with the inhabitants of the Hudson Bay area. They traded with the natives for skins and furs. Meanwhile rivalry between the British and the French in Canada continued.

Canada in the 18th century

After the War of the Spanish Succession (1701-1713) France was forced to recognize British control of Hudson Bay and Newfoundland. The French were also forced to cede Nova Scotia to Britain.

However more conflict between Britain and France was inevitable. During the Seven Years War (1756-1763) the two nations fought for control of Canada. In 1758 the British captured the French fortress of Louisbourg on Cape Breton Island. Then in 1759 General Wolfe captured the city of Quebec. (Wolfe's victory at Quebec ensured that Canada would become British rather than French). Then in 1760 the British captured Montreal. Finally in 1763 the French were forced to surrender all their territories in Canada to Britain by the Treaty of Paris.

The British were then left with the problem of how to deal with the French Canadians. Wisely they decided to treat them gently and the Quebec Act of 1774 allowed the French Canadians to practice their own religion (Roman Catholicism). The French Canadians were also allowed to keep French civil law alongside British criminal law. By 1775 Canada had a population of about 90,000. The colony was flourishing.

When the American Revolution began in 1775 the Americans hoped the French Canadians would join them. However they were disappointed. An American army entered Canada in September 1775 and captured Montreal in November. However an attempt to capture Quebec in December failed and the American soldiers retreated in 1776.

After the American Revolutionary War about 40,000 Americans who remained loyal to Britain migrated from the newly independent country to Canada.

Then in 1791 the British parliament passed another act, which divided the Lawrence River Valley into two parts, Upper and Lower Canada. (Nova Scotia and New Brunswick were not affected).

Meanwhile exploration continued. George Vancouver (1757-1798) sailed along the west coast of Canada in 1791-94. Vancouver Island is named after him. Alexander Mackenzie (1755-1820) traveled from Great Slave Lake along the Mackenzie River and reached the Arctic Ocean in 1789. In 1793 he crossed the continent by land and reached the Pacific.

During the American War of 1812 the Americans invaded Canada but they were repulsed.

Canada in the 19th century

Meanwhile in the early 19th century the population of Canada grew rapidly boosted by many migrants from Britain. A shipbuilding industry flourished in Canada and canals were built to help commerce.

However in the early 19th century many Canadians became dissatisfied with their government. In 1791 both Lower and Upper Canada were allowed an elected legislature. However the king appointed councils with executive powers. Yet both French and English speaking Canadians wanted a more democratic form of government.

Eventually in 1837 some Canadians rebelled. Louis Joseph Papineau led an uprising of French Canadians. However the rebellion was soon crushed. In Upper Canada William Lyon Mackenzie, who became the first Mayor of Toronto in 1834,

led the insurrection. In 1837 he led an uprising, which was quickly crushed. Mackenzie himself was killed.

However Canada finally gained democratic government in 1867 when Ontario, Quebec, Nova Scotia and New Brunswick were federated as the Dominion of Canada. Canada then had a strong central government, which ruled from Ottawa, the new capital. The first prime minister of Canada was Sir John Macdonald.

Manitoba was made a province in 1870. British Columbia joined the confederation in 1871. Alberta and Saskatchewan joined in 1905.

In the late 19th century and the early 20th century the population of Canada grew rapidly. The Canadian economy also expanded rapidly helped by the spread of railways. A transcontinental railway, the Canadian Pacific Railway was completed in 1885.

Many Britons migrated to Canada and in the early 20th century many Eastern Europeans also migrated there. Vast areas of land were turned over to farming and manufacturing industries boomed.

Meanwhile in 1896 gold was found in the Klondike district of the Yukon and a gold rush ensued.

Canada in the 20th century

More than 60,000 Canadian men died in the First World War. Meanwhile Manitoba was the first province of Canada to allow women to vote in provincial elections in 1916. Women in Canada were given the right to vote in federal elections in 1918. By 1925 all provinces except Quebec had granted women the right to vote in provincial elections. Quebec finally gave women that right in 1940.

The 1920s were, in general prosperous years for Canada. However like the rest of the world Canada suffered in the depression of the 1930s. Canada suffered from a huge drop in exports of timber, grain and fish. By 1933 unemployment had soared to 23%. The government introduced relief works but economic hardship continued throughout the 1930s. The depression only ended when the Second World War began in 1939. However during World War II 45,000 Canadians were killed.

In the late 20th century the population of Canada grew rapidly. In 1951 it was 16 million. By 1961 it had risen to 18 million. After 1945 people from Southern and Eastern Europe flocked to live in Canada. From the 1960s many immigrants came from South Asia.

Meanwhile during the 1950s and 1960s the Canadian economy boomed and Canada became an affluent society. Meanwhile television began in Canada in 1952. However things turned sour in the 1970s. In the early 1980s Canada suffered a deep recession and unemployment rose to 11%. There was another recession in the early 1990s. Yet Canada recovered.

In 1995 the people of Quebec voted in a referendum not to secede from Canada. Then in 1999 North West Territories was divided into two and a new territory called Nunavut was created.

Meanwhile in 1993 Kim Campbell became the first woman prime minister of Canada.

Taken from: <http://www.localhistories.org/canada.html>

Text 2. Canada geography

Almost 90% of Canadian population live at 160 km range from the boarder on the USA.

Though most of Canada's territory is occupied by lakes and wilderness forests, there are also vast mountain ranges, plains and even a small desert. Great Plains, or prairies, cover Manitoba, Saskatchewan and partly Alberta. These fertile territories are suitable for agriculture. Western Canada is famous for the Rocky Mountains. In Eastern Canada all the main cities as well as Niagara Falls are situated. The Canadian Shield, the ancient mountainous region which formed more than 2,5 billion years ago, covers the north of the country. In the Arctic region there is tundra which is divided to the north into many islands covered with ice all the year round. The tallest peak of Canada is Mount Logan. It is 6,050 m high above the sea level.

The main natural resources found in Canada are nickel, zinc, copper, gold, tin, silver, coal, oil and gas.

The territories suitable for cultivation occupy only 5% of Canada and 3% are used as pastures. 54% of the territory of Canada are covered with forests and cultivated land occupies only 7,100 sq.km.

Canada can be divided into 5 parts with different physical and geographical characteristics: the Appalachian Region (in the south-east), the Canadian Shield, the Prairies, the Great Lakes - St. Lawrence Lowlands (in the middle) and the Cordillera (in the west).

The lands of Canada have complicated geological structure with layers of different age. Near the oldest Canadian Shield there are newly formed Cordillera. Almost half of the country's territory is occupied by the St. Lawrence Plateau, which is a part of the Canadian Shield. It still has remained traces of the recent glacial period: smooth rocks, chains of lakes, etc. The Plateau is a sloping and undulating plain. It is the most unsuitable for living part of Canada, but it the richest one with mineral resources.

From the north and south the St. Lawrence Plateau is surrounded by vast lowlands - the Great Lakes and St. Lawrence Lowlands and the Hudson Bay Lowland. They represent the most typical Canadian landscape and made Canada famous as a vast country with good climate and geographical conditions.

Steppes occupy the largest part of Alberta, Saskatchewan and Manitoba. These are often called prairie provinces. The St. Lawrence Lowlands have climate favorable for agriculture as well as suitable soil. It is the economical center of Canada.

The Appalachian Mountains are situated in the South - East of the country. They are rich with mineral resources. The average height of this mountain range is about 600 metres. To the north-west of the Appalachians there is the Canadian Shield consisting mainly of granite and gneiss. There are also many swamps, lakes and mountain rivers there. From west and south the Canadian Shield is surrounded by the chain of lakes - from Great Bear Lake to Great Lakes. Great Bear Lake is the largest lake situated entirely in Canada.

To the west of the Canadian Shield there are Great Plains. Their southern part - the Lowlands - is the agricultural center of the country, they make 75% of all the

cultivated territories. The Cordillera Mountains run along the Pacific Coast of Canada - 2,500 km from north to south and 750 km from west to east. They are called the Rocky Mountains at the East and the Coastal Mountains at the West. Their average height is 2-3 thousand metres above the sea level.

The Western Coast of the country is high, steep and cut up by gulfs. Nearby there are a lot of islands, Vancouver Island, the Queen Charlotte Islands, etc. The Pacific Ocean is not covered with ice in winter.

The Eastern Coast is also steep and cut up by bays and gulfs. The deepest gulfs are the St. Lawrence and the Bay of Fundy. The Ocean is covered with ice only for a short period every year, but fogs and storms prevent regular navigation.

The Northern Coast has no gulfs and bays. The Arctic Ocean is covered with ice during 9-10 months a years, so navigation is possible only in summer.

Flora and Fauna

Tundra and taiga consist the major part of Canadian landmass. Only 8% of it is cultivated, 50% of the territory are covered with forests rich with valuable sorts of wood. The most valuable sorts are that of conifers: gigantic tuya, balm fir, larch, black and white fur-trees. In the south and southwest of the country poplar, yellow birch, oak and maple, which is the symbol of Canada, are widely represented. Hunting fur-bearing animals in taiga is a very important branch of Canadian economy.

On the stock of wood resources Canada is surpassed only by Russia and Brazil, but it is on the 1st place in the world on the stock of wood per one citizen.

Moss, grass and flowers grow in tundra only in summer. In the forest tundra one can see different sorts of dwarf trees. Prairies and lowlands are covered with feather-grass and wormwood.

Canada has a diversity of fauna on its territory. In tundra northern deer, tundra wolf, white bear, white hare, Arctic fox and some other species are occurred. Forests are inhabited by bear, wolf, fox, lynx, squirrel, hare, marten, beaver, elk and deer. Field mice, mole and gopher live in steppes. Many species of migratory birds inhabit the lakes and the Arctic islands in summer. In Canadian National Parks a lot of rare

species are preserved. Among them are buffalos, which were almost exterminated since the first Europeans had settled on the North American Continent. Coastal waters in the west are rich with salmon, gorbusha, chum salmon, etc., and in the east - with cod-fish and herring.

Lakes and Rivers

There are some two million lakes in Canada, covering about 7,6% of the Canadian landmass. The main lakes, in order of the surface area located in Canada (many large lakes are traversed by the Canada - U.S.A. border), are Huron, Great Bear, Superior, Great Slave, Winnipeg, Erie and Ontario. The largest lake situated entirely in Canada is Great Bear Lake (31 326 sq.km) in the Northwest Territories.

The St. Lawrence (3058 km long) is Canada's most important river, providing a seaway for ships from the Great Lakes to the Atlantic Ocean. The longest Canadian River is the Mackenzie, which flows 4241 km through the Northwest Territories. Other large watercourses include the Yukon and the Columbia (parts of which flow through U.S. territory), the Nelson, the Churchill, and the Fraser - along with major tributaries such as the Saskatchewan, the Peace, the Ottawa, the Athabasca, and the Liard.

Almost 2/3 of Canadian rivers belong to the Arctic Ocean basin. Everywhere except the southern part of the country rivers are covered with ice for a period from 5 to 9 months a year. The Niagara and the St. Lawrence rivers play a very important role in economy of Canada as they connect it to the U.S.A. and are a source of electrical power produced by numerous hydroelectric power stations on its banks. The Columbia is also used for producing electricity but it is not suitable for navigation.

There are about 4 million lakes, big and small in Canada. The biggest ones are Great Lakes, Great Bear Lake and some others. All the lakes are beautiful indeed due to clean transparent blue water and picturesque rocky banks. Lakes are the most popular place for spending weekends and vacations with Canadians.

Mineral Resources

Canada is very rich with mineral resources: non-ferrous metals, rare and precious metals, uranium, iron ore, natural gas, coal, asbestos, potash, potassium salts.

The Foothills of the Rocky Mountains, Alberta and the Appalachians and the coastal provinces are rich with coal deposits. Iron ore is occurred in the lake Superior district, Labrador Peninsula and the Cordillera mountains The Canadian Shield is a natural store of nickel, copper, iron, platinum, uranium and cobalt. In the Appalachians a lot of asbestos, coal, gold, silver and non-ferrous metals are occurred. The Cordillera mountains are rich with non-ferrous and precious metals.

Taken from: <http://canada.eimc.ru/canada/geo.html>

Text 3. A brief history of the United States

The demand for Asian spices, textiles, and dyes spurred European navigators to dream of shorter routes between East and West. Acting on behalf of the Spanish crown, in 1492 the Italian navigator and explorer Christopher Columbus sailed west from Europe and landed on one of the Bahama Islands in the Caribbean Sea. For the next 100 years English, Spanish, Portuguese, Dutch and French explorers sailed there for gold and riches, for honour and glory.

The first English colony was founded at Jamestown, Virginia, in 1607. A few years later, in July 1620, English Puritans, the Pilgrims, came to America to escape religious persecution for their opposition to the Church of England. They sailed on the 'Mayflower' among the first 102 colonists who wanted to set up a colony in America, to find there civil and religious freedom. They arrived in America with a strong will to create in the New World the so called 'City upon the Hill' - an ideal community based on Biblical Testament. Ever since, Americans have viewed their country as a great experiment, a worthy model for other nations to follow.

The Pilgrim leaders (Pilgrim Fathers) knew that in order to organize their lives in the new land they had to establish rules of their behaviour. So 41 men aboard the 'Mayflower' held a meeting and chose their first governor. They also signed a special

document known as the Mayflower Compact (1620) - the agreement about the creation of the civil political body with the aim of supporting order and security, making just and equal laws. That was the first arrangement for self-government in America.

Though the first English settlers were the largest group, there were also colonists from other countries (Holland, France, Germany and Sweden). Among the bulk of immigrants to North America, one group of people came unwillingly. These were Africans who were brought to the colonies as slaves. Importing slaves to the US became a crime in 1808, but slavery itself was eliminated after the Civil war, in 1865.

By the middle of the 18th century the English settlers had founded 13 colonies along the Atlantic coast. In May 1775 the Congress of Representatives of the colonies met in Philadelphia, and began to set up a national government. It organized the Continental Army and Navy under the command of G. Washington, printed its own money, and opened diplomatic relations with foreign countries. The Congress came to the conclusion that the colonies had the right to gain freedom and become independent. Th. Jefferson, G. Washington, B. Franklin, J. Madison, and A. Hamilton prepared the text of the Declaration of Independence adopted by the Congress on July 4, 1776. This document proclaimed the independence of the 13 colonies from Britain. It also proclaimed that all men are created equal and possess certain unalienable rights - life, liberty and the pursuit of happiness.

In the 18th century the colonies in North America were developing rapidly. Meanwhile their growing strength worried Britain, which began to take measures against the development of the colonies. This led to protest and then to the War of Independence (1775-83). As a result of intense military operations the British army surrendered and the British Government asked for peace. Britain finally recognized the independence of the US by signing the Treaty of Paris in 1783.

After winning the War of Independence, the new nation needed to devise a form of government that would bind the 13 states into an efficient and workable union. The first arrangement which gave much power to the states was the Articles of Confederation - the very first US Constitution. The Articles proclaimed

independence, determined the system of government of the former English colonies, and consolidated the weak points of the central authority. The Articles remained valid up to 1789.

The Constitution of the United States - the source of government authority and the fundamental law of the country was drawn up in 1787 in Philadelphia and became law in 1789. It set up a federal system with a strong central government, prescribed the structure of national government with three branches and listed its rights and fields of authority. However, the Constitution caused dissatisfaction of the Americans as it didn't contain guarantees of certain basic freedoms and individual rights. Thus, in 1791 the Congress was forced to adopt the first 10 amendments to the Constitution dealing with civil liberties: freedom of speech, the press and religion, the right of peaceful assembly, the right to own firearms, freedom from unreasonable search, arrest and seizure. They were called collectively the 'Bill of Rights'. Since then 17 other amendments have been added to the Constitution. Perhaps the most important of these are the Thirteenth and

Fourteenth, which outlaw slavery and guarantee all citizens equal protection of the laws, and the Nineteenth, which gives women the right to vote. Together with its 27 Constitutional Amendments, adopted from 1791 till 1992, the Constitution of 1789 is in force at the present time.

Though Britain recognized American independence in 1783, it did everything to hinder the development of the new nation. British interference with American trade and economy and other aggressive acts led to war in 1812. Military operations of the two countries were conducted with a varying success and the Second War of American Independence ended in a compromise by signing the Treaty of Ghent in 1814. The Treaty restored the pre-war status quo but didn't solve the territorial and economic matters having provoked the war.

In 1848 gold was discovered in California, and a great gold rush started. Thousands of settlers went there to find gold. The gold rush led to an intensive colonization of the west. The gold rush brought to the west not only gold-diggers, but also merchants, farmers and others, contributed to the building of post-roads and

railways, the development of engineering, the attraction of investments and the development of economy as a whole.

The American Civil War began in 1861 when the 11 Southern states supporting slavery decided to leave the American Union and proclaimed themselves an independent nation - the Confederate States of America with its own President, government and army. Though the Southern army fought well it could not win the war, because the Northern Army had the support of the industrial north and the people who were against slavery. The war was over in 1865. It put an end to slavery and made the USA a single united nation. Since the late 19th century the US is marked by a growth in big business, the emergence of labour as an organized economic and political force and the increasing role in world affairs.

More than 500-year-old history of the USA is rich in excitement and drama: the transformation of an untamed land into a mighty industrial power, the growth of a basically English colony into a complex multiethnic society. The history shows the American people on their way to the American Dream: independent, democratic, powerful state with the developed economy and equal rights for everybody. There have been moments of triumph and sadness, but there also has been remarkable faithfulness to the democratic ideals proclaimed at the moment of nation's birth.

Taken from Митрошкина Т.В., Савинова А.И. English cross-cultural studies. – Минск, 2011.

Text 4. American values

*Marian Bean, Director of the International Student Office,
described the major American values in the following way:*

Individuality: Americans are encouraged at an early age to be independent and to develop their own goals in life. They are encouraged not to depend too much on others including their friends, teachers and parents. They are rewarded when they try hard to reach their aims.

Privacy: Americans like their privacy and enjoy spending time alone. Foreign visitors will find American homes open but what is inside the American mind is considered to be private. They won't let anyone to intervene into their private affairs.

Equality: Americans believe that everyone was created equal and has the same rights. This includes women as well as men of all ethnic and cultural groups living in the USA. Managers, directors, presidents and university instructors are often addressed by their first name.

Time: Americans try to make the best use of their time. In the business world "time is money". Being "on time" for class, an appointment, or for dinner with your family is very important.

Informality: The American lifestyle is generally casual. Students go to class in shorts and t-shirts. Professors seldom wear a tie and some may even wear blue jeans. Greetings and farewells are usually short, informal and friendly. Students may greet each other with "hi", "how are you?" and "what's up?".

Achievement and hard work: A competitive spirit is often the motivating factor to work harder. Americans try to achieve efficiently the objectives they select and compete with others in their study and career. Americans seem to always be "on the go", because sitting quietly doing nothing is considered to be a waste of time.

Taken from <http://www.commondreams.org/>

Text 5. British and American English

English is an Indo-European language belonging to the West Germanic branch. It is the native language of over 300 million people and is acquired as a second language by many more. In the number of native speakers it is second only to Chinese. Speakers of English nowadays comprise a very large number of people across the globe. Figures vary considerably, but it is believed that nearly one quarter of the world's population, or between 1.2 and 1.5 billion people, is already fluent or competent in English.

Of all the people in the world who speak English as their mother tongue, more than 200 million people live in North America. American English reflects numerous

non-English cultures which colonists met in their conquest of the continent in the early 17th century.

First in importance come the words derived from the speech of various Indian tribes. This was caused by the necessity of talking about new things, qualities, operations, concepts, and ideas. Names had to be given to all these aspects of their new life. So, from the Indians were borrowed not only the many geographical names of rivers, lakes, mountains, but names for objects, plants, animals, as well as implements and food preparations of a new kind, such as *canoe*, *moccasin*, *wigwam*, *toboggan*, *tomahawk*, *totem*, *igloo*, *hammock*, etc. In the westward expansion of their territory, the English-speaking colonists soon came into contact with the French settlers. From them a considerable number of words were derived, e.g. *rapids*, *prairies*, etc. More substantial borrowings were made from the Spanish culture. The Spanish colonial occupation of North American territory is reflected through the words *rodeo*, *cafeteria*, *lasso*, *mulatto*, *canyon*, *sombrero*. The Dutch settlers contributed to American English the words *boss*, *cookie*, *Yankee*, *Santa Claus*. The words showing some aspects of German influence also found their way into the American form of the language: *frankfurter*, *semester*, *seminar*, etc. Thus, the borrowings from different languages and new meanings of words appeared due to the development of American way of life.

The American vocabulary during the 19th century began to be exported abroad, and by the 20th century, with its economic, political and technological prominence in the world, the United States of America and its language became one of the greatest forces for change and expansion of English. The increasing influence of the country caused a steady infiltration of American words and expressions into British English. The words *okay*, *cocktail*, *fan*, *egghead*, *disk jockey*, *show business*, *star*, once exclusively American, are today normal British ones. Americans are constantly inventing new words, many of which have found a permanent place first in American and then in British usage. In this category we have formations like *boyfriend*, *bookstore*, *brainstorm*, *chewing gum*, *credit card*, *feedback*, *know-how*, *home-made*,

to baby-sit, to sport-cast, etc. The use of nouns as verbs and vice versa has also given rise to new words. Thus we have *to park, to package, to program, to vacation*.

There are, however, a number of cases in which British and American people continue to use different words to mean the same thing. These words are still in constant use and have retained their national character. In the table below there are a few examples illustrating certain variations in the two languages.

Apart from the vocabulary distinctions, there are a number of basic differences between British and American pronunciation:

- American English intonation does not rise or fall as much as that of British English, it sounds more monotonous;

- American pronunciation is more nasalized;

- words ending in *-ary* and *-ory* have a stress on the next to last syllable in American English: *secretary, laboratory, monastery*;

- the Americans often pronounce [r] in position where it is not pronounced in British English: *car, here, farmer, bird, hurt, tear*;

- the Americans omit [j] in the words like *produce, stupid, duty, news*;

- in America they pronounce [æ] instead of [a:]: *class, bath, past, dance*;

- in such words as *direct, dynasty, vitamin, privacy* letters *i* and *yare* are pronounced [ai] in American English and [i] in British English.

In American English there is an increasing tendency to employ a simplified spelling. The commonest feature of this is the use of *-or* in all words that in English contain *-our*: *labor, honor, color*. Besides, the Americans write *thru* for *through*, *Marlboro* for *Marlborough*, *catalog* for *catalogue*, *program* for *programme*, *center* for *centre*, *theater* for *theatre*, *check* for *cheque*, *jewelry* for *jewellery*, *specialty* for *speciality*, etc. Nouns ending in *-ence* in British English, have ending *-ense* in American English: *defense, license, offense*. The Americans prefer to use endings *-ize, -yze* and *-ization* in place of British *-ise, -yse* and *-isation*: *realize, modernize, colonization*. But the words *advertise, compromise, surmise* have the same spelling in both languages.

The changes introduced into the American variety of English are also to be found in grammar and structure, but most of them would not cause any serious confusion as valid differences are not very numerous or very significant.

<i>Transportation and motoring</i>			
British	American	British	American
car	automobile	traffic lights	traffic signals
coach	bus	dual carriageway	divided highway
booking office	ticket window	lay by	rest area
bonnet (<i>of a car</i>)	hood	diversion	detour
windscreen	windshield	pavement	sidewalk
garage	service station	motorway	freeway
guard (<i>of a train</i>)	conductor	railway	railroad
goods train	freight train	underground, tube	subway
lift	elevator	filling station	gas station
lorry	truck	level crossing	grade crossing
tram	street-car	cul-de-sac	dead end
pram	baby-carriage	car park	parking lot
roundabout	traffic circle	petrol	gas, gasoline
<i>Post, telephone, telegraph</i>		<i>Food</i>	
British	American	British	American
post	mail	biscuit	cracker

post code	zip code	boiled sweets	hard candy
pillar box	mail box	dry martini	dry vermouth
parcel	package	high tea	supper
trunk call	long-distance call	knife and fork tea	light supper
personal call	person-to-person call	sweet biscuit	cookie
to reverse the charges	to call collect		
telegram	wire		
<i>Clothing</i>		<i>Others</i>	
British	American	British	American
suspenders	garters	autumn	fall
vest	undershirt	bill (<i>restaurant</i>)	check
waistcoat	vest	chemist	drug store
		cinema	movie theatre
		ring up	call up
		minister	secretary
		secondary school	high school
		form	grade
		cupboard	closet

Text 6. Early peoples of Scotland and their relations

Most historians agree that the first man appeared in Scotland as long ago as 6,000 BC. Bone and antler fishing spears and other rudimentary implements found along the western part of the country serve as evidence to support this theory. The Beaker civilization [2] arrived three thousand years later, and is notable for its henges (of which Stonehenge is one of the most famous). The Beaker people eventually spread as far north as Orkney.

As a result of its geography, Scotland has two different societies. In the center of Scotland mountains stretch to the far north and across to the west, beyond which lie many islands. To the east and to the south the lowland hills are gentler, and much of the countryside is like England, rich, welcoming and easy to farm. North of the “Highland Line” [3] people stayed tied to their own family groups. South and east of this line society was more easily influenced by the changes taking place in England.

Scotland was populated by four separate groups of people. The main group, the Picts, lived mostly in the north and northeast. They spoke Celtic as well as another, probably older, language completely unconnected with any known language today, and they seem to have been the earliest inhabitants of the land.

The non-Pictish inhabitants were mainly Scots. The Scots were Celtic settlers who started to move into the western Highlands from Ireland in the fourth century.

In 843 the Pictish and Scottish kingdoms were united under a Scottish king, who could also probably claim the Picts throne through his mother, in this way obeying both Scottish and Pictish rules of kingship.

The third inhabitants were the Britons, who inhabited the Lowlands, and had been part of the Romano-British world. They had probably given up their old tribal way of life by the sixth century.

Finally, there were Angels from Nothambria who had pushed northwards into the Scottish Lowlands.

Unity between Picts, Scots and Britons was achieved for several reasons. They shared a common Celtic culture, language and background. Their economy mainly depended on keeping animals. These animals were owned by the tribe as a whole, and for this reason land was also held by tribes, not by individual people. The common economic system increased their feeling of belonging to the same kind of society and the difference from the agricultural Lowlands. The sense of common culture may have been increased by marriage alliances between tribes. This idea of common landholding remained strong until the tribes of Scotland, called “clans” [4], collapsed in the eighteenth century.

The spread of Celtic Christianity also helped to unite the people. The first Christian mission to Scotland had come to southwest Scotland in about AD 400. Later, in 563, Columba, known as the “Dove of the Church”, came from Ireland. Through his work both Highland Scots and Picts were brought to Christianity. He even, so it is said, defeated a monster in Loch Ness, the first mention of this famous creature. By the time of the Synod of Whitby in 663, the Picts, Scots and Britons had all been brought closer together by Christianity.

The Angles were very different from the Celts. They had arrived in Britain in family groups, but they soon began to accept the authority from people outside their own family. This was partly due to their way of life. Although they kept some animals, they spent more time growing crops. This meant that land was held by individual people, each man working in his own field. Land was distributed for farming by the local lord. This system encouraged the Angles of Scotland to develop a non-tribal system of control, as the people of England further south were doing. This increased their feeling of difference from the Celtic tribal Highlanders further north.

Finally, as in Ireland and in Wales, foreign invaders increased the speed of political change. Vikings attacked the coastal areas of Scotland, and they settled on many of the islands, Shetland, the Orkneys, the Hebrides, and the Isle of Man

southwest of Scotland. In order to resist them, Picts and Scots fought together against the enemy raiders and settlers. When they couldn't push them out of the islands and coastal areas, they had to deal with them politically. At first the Vikings, or "Norsemen", still served the King of Norway. But communications with Norway were difficult. Slowly the earls of Orkney and other areas found it easier to accept the king of Scots as their overlord, rather than the more distant king of Norway.

However, as the Welsh had also discovered, the English were a greater danger than the Vikings. In 934 the Scots were seriously defeated by a Wessex army pushing northwards. The Scots decided to seek the friendship of the English, because of the likely losses from war. England was obviously stronger than Scotland but, luckily for the Scots, both the north of England and Scotland were difficult to control from London. The Scots hoped that if they were reasonably peaceful the Sassenachs [5] would leave them along.

Scotland remained a difficult country to rule even from its capital, Edinburgh. Anyone looking at a map of Scotland can see that control of the Highlands and islands was a great problem. Travel was often impossible in winter, and slow and difficult in summer. It was easy for a clan chief or noble to throw off the rule of the king.

II. "...we will never consent to subject ourselves to the dominion of the English."

England, Wales, Scotland and Ireland were once known as the British Isles. Nowadays this term is normally used only in Geography. In fact, the people of these isles have seldom been politically or culturally united. English kings started wars to unite the British Isles from the 12th century. These wars were wars of conquest and only the Welsh war was a success.

At that time England was ruled by several ambitious kings, who wanted to conquer more countries for themselves and to add more titles to their names. They had, as a rule, absolutely no interest in the people of the countries that they wished to conquer. It did not concern them that these wars brought misery to the people in

whose land they fought. The result was generally to create a strong, national, patriotic feeling in the invaded country, and a great hatred of the invader.

I don't have much space here to speak about the history of Scotland in details that is why I'd like to mention one historical episode which shows the Scottish attitude towards freedom and independence. (For the chronology of the events in the history of Scotland see Appendices)

Although Scottish kings had sometimes accepted the English king as their "overlord", they were much stronger than the many Welsh kings had been. Scotland owes its clan system partly to an Englishwoman, Margaret, the Saxon Queen of Malcolm III. After their marriage in 1069, she introduced new fashions and new ideas to the Scottish court – and among the new ideas was the feudal system of land tenure. Until that time, most of the country had been divided into seven semi-independent tribal provinces. Under the feudal system, all land belonged to the king, who distributed it among his followers in exchange for allegiance and service. But a Highland chieftain could easily ignore a far-off Lowland king and, as time went by, the clan chiefs became minor kings themselves. They made alliances with other clans, had the power of life and death over their followers.

By the 11th century there was only one king of Scots, and he ruled over all the south and east of Scotland. In Ireland and Wales Norman knights were strong enough to fight local chiefs on their own. But only the English king with a large army could hope to defeat the Scots. Most English kings did not even try, but Edward I was different.

The Scottish kings were closely connected with England. Since Saxon times marriages had frequently taken place between the Scottish and English royal families. At the same time the Scottish kings wanted to establish strong government and so they offered land to Norman knights from England in return for their loyalty.

In 1290 a crises took place over the succession to the Scottish throne. On a stormy night in 1286 King Alexander of Scotland was riding home along a path by the sea in the dark. His horse took a false step, and the king was thrown from the top of a cliff.

Disputes arose at once among all those who had any claim at all to the Scottish throne. Finally two of the claimants, John de Balliol and Robert Bruce, were left. Scottish nobles wanted to avoid civil war and invited Edward I to settle the matter. Edward had already shown interest in joining Scotland to his kingdom. He wanted his son to marry Margaret, the heir to the Scottish throne, but she had died in a shipwreck. Now he had another chance. He told both men that they must do homage to him, and so accept his overlordship, before he would help settle the question. He then invaded Scotland and put one of them, John de Balliol, on the Scottish throne.

De Balliol's four years as a king were not a success. First Edward made him provide money and troops for the English army and the Scottish nobles rebelled. They felt that Edward was ruining their country.

Then Edward invaded Scotland again, and captured all the main Scottish castles. During this invasion he stole the sacred Stone of Destiny from Scone Abbey. The legend said that all Scottish kings must sit on it. Edward believed that without the Stone, any Scottish coronation would be meaningless, and that his own possession of the Stone would persuade the Scots to accept him as king. However, neither he nor his successors became kings of Scots, and the Scottish kings managed perfectly well without the stone.

All this led to the creation a popular resistance movement. At first it was led by William Wallace, a Norman-Scottish knight. But after one victory against English army, Wallace's "people's army" was itself destroyed by Edward in 1297.

It seemed that Edward had won after all. Wallace was captured and executed. His head was put on a pole on London Bridge. Edward tried to make Scotland a part of England as he had already done with Wales. Some Scottish nobles accepted him, but the people refused to be ruled by the English king. Scottish nationalism was born on the day Wallace died.

A new leader took up the struggle. This was Robert Bruce, who had competed with John de Balliol for the throne. He was able to raise an army and defeat the English army in Scotland. Edward the I gathered another great army and marched against Robert Bruce, but he died on the way north in 1327. On Edward's grave were

written the words “Edward, the Hammer of the Scots”. He had intended to hammer them into the ground and destroy them, but in fact he had hammered them into a nation.

After Edward’s death Bruce had enough time to defeat his Scottish enemies, and make himself accepted as king of the Scots. He then began to win back the castles still held by the English. When the son of his old enemy Edward II invaded Scotland in 1314 Bruce destroyed his army at Bannockburn, near Stirling. Six years later, in 1320, the Scots clergy meeting in Arbroath wrote to the Pope in Rome to tell him that they would never accept English authority: “for as long as even one hundred of us remain alive, we will never consent to subject ourselves to the dominion of the English.”

In the long, bitter struggle for independence, Scotland never capitulated, and when at last it became part of the United Kingdom in 1707 it was by treaty, even if many Scots regarded the Act of Union [6] as a piece of treachery. It is still a land apart, with a very separate culture. Scotland retained its separate legal and ecclesiastical systems, and until well into the 20th century its separate system of free education was the most advanced and generous in Britain. Nowadays, it has its own Parliament.

Text 7. Edinburgh’s Castle

The Royal Castle of Edinburgh is the most powerful symbol of Scotland. For centuries, this mighty fortress has dominated its surroundings with a majesty, which has deeply impressed many generations.

The volcanic castle rock in Edinburgh was born over 340 million years ago following a violent eruption deep in the earth’s crust. Its story as a place of human habitation stretches back a mere 3,000 years, to the late Bronze Age. It was evidently a thriving hill-top settlement when Roman soldiers marched by in the first century AD.

The place had become an important royal fortress by the time of Queen Margaret’s [10] death there in November 1093. Throughout the Middle Ages

Edinburgh Castle ranked as one of the major castles of the kingdom and its story is very much the story of Scotland. But within the building of the Palace of Holyroodhouse in the early 16th century, the castle was used less and less as a royal residence, though it remained symbolically the heart of the kingdom.

Edinburgh Castle is the home of the Scottish Crown Jewels, the oldest Royal Regalia in Britain. The Honours of Scotland – the Crown, Sword and Sceptre – were shaped in Italy and Scotland during the reigns of King James IV and king James V and were first used together as coronation regalia in 1543.

After the 1707 Treaty of Union between Scotland and England, the Honours were locked away in the Crown Room and the doors were walled up. 111 years later, the Honours were rediscovered and immediately displayed to the public. Displayed with the Crown Jewels is the Stone of Destiny, returned to Scotland after 700 years in England.

Edinburgh Castle boasts having the giant siege gun Mons Meg in its military collection. Mons Meg (or simply “Mons”) was made at Mons (in present-day Belgium) in 1449. It was at the leading edge of artillery technology at the time: it weighs 6040 kilogrammes and its firing gunstones weigh 150 kilogrammes. It soon saw action against the English. But its great weight made it ponderously slow to drag around – it could only make 5 kilometres a day. By the middle of the 16th century it was retired from military service and restricted to firing salutes from the castle ramparts. It was returned to the castle in 1829.

The Military Tattoo

For many visitors the castle means nothing without the Edinburgh Military Tattoo [11], which is taking place at the Castle Esplanade. The esplanade had been a narrow rocky ridge until the middle of the 18th century when the present platform was created as a parade ground.

The signal (Tattoo) indicated that soldiers should return to their quarters and that the beer in the taverns should be turned off. This signal was transmitted by drum beat each evening. Eventually this developed into a ceremonial performance of military music by massed bands.

It began when the city held its first International Festival in the summer of 1947. The Army staged an evening military display on the Esplanade. The march and counter-march of the pipes and drums which was held near one of the most dramatic places anywhere in the world made it an immediate success. The Tattoo has been repeated every summer since on the same site. Each Tattoo closes with another “tradition”- the appearance of the lone piper on the battlements of the castle.

St. Giles’ Cathedral

If Edinburgh Castle has been at the centre of Scottish life for 9 centuries, St. Giles’ Cathedral, the High Kirk of Edinburgh, has been the religious heart of Scotland for even longer.

In 854 there was a church. It belonged to Lindisfarne, where Columba’s monks first brought the Gospel from Iona. In 1150, the monks of St. Giles’ were farming lands round about and a bigger church was built by the end of the century. The first parish church of Edinburgh was dedicated to St. Giles, a saint popular in France. It was probably due to the Auld Alliance of Scotland and France against the common enemy of England.

St Giles’ Cathedral is one of the most historic and romantic buildings in Scotland. Founded in 1100s, this church has witnessed executions, riots and celebrations. Its famous crown spire has dominated Edinburgh’s skyline for over 500 years. Scotland was a Catholic nation until the Reformation in the mid-16th century.

John Knox [12], the fiery “Trumpeter of God”, who preached against Popery, brought St. Giles into great prominence. Knox’s aim was to create a reformed Church of Scotland, to banish “popery”, to strengthen democracy and to set up a system of comprehensive education. The religious transition was to take 130 years of struggle to achieve.

Many of the famous Scots are commemorated in the church, including R. Burns and R. L. Stevenson.

The Giles is famous for its Thistle Chapel, which is home to the Order of the Thistle [13] and honours some of the greatest Scots of the last 300 years. This exquisite little room will take one’s breath away. Its magnificent carvings and

stonework evoke the ancient origins of the order and will amaze anyone with a wealth of details associated with Scotland, for example, the angel that plays the bagpipe.

Text 8. Edinburgh's Museums

In the field of arts, Edinburgh has a host of outstanding attractions for different tastes and interests. The Scottish National Portrait Gallery provides a unique visual history of Scotland, told through portraits of the figures who shaped it: royals and rebels, poets and philosophers, heroes and villains. All the portraits are of Scots, but not all are by Scots. The collection also holds works by great English, European and American masters. Since the Gallery first opened its doors, the collection has grown steadily to form a kaleidoscope of Scottish life and history. Among the most famous portraits are Mary, Queen of Scots, Ramsay's portrait of philosopher David Hume, Nasmyth's portrait of Robert Burns, and Raeburn's Sir Walter Scott. In addition to paintings, it displays sculptures, miniatures, coins, medallions, drawings, watercolours and photographs.

The Royal Museum and the Museum of Scotland are two museums under one roof. The Royal Museum is Scotland's premier museum and international treasure-house. It contains material from all over the world. A vast and varied range of objects are on display – from the endangered Giant Panda to working scale models of British steam engines. The Museum of Scotland tells the remarkable story of a remarkable country from the geological dawn of time to modern-day life in Scotland. The variety and richness of Scotland's long and vibrant history, is brought to life by the fascinating stories each object and every gallery has to tell.

At the heart of the museum is the Kingdom of the Scots. This is the story of Scotland's emergence as a distinctive nation able to take its place on the European stage. Here are the icons of Scotland's past – objects connected with some of the most famous events and best-known figures in Scottish history, from the Declaration of Arbroath [14] to Mary, Queen of Scots.

Described as “the noisiest museum in the world”, the Museum of Childhood is a favourite with adults and children alike. It is a treasure house, full of objects telling of childhood, past and present. The museum has five public galleries. A list of their contents makes it sound like a magical department store. There are riding toys, push and pull toys, doll’s prams, yachts and boats, slot machines, a punch and judy, a nickelodeon, a carousel horse, dolls’ houses, toy animals, zoos, farms and circuses, trains, soldiers, optical toys, marionettes, soft toys, games and much, much more.

In addition, the museum features a time tunnel (with reconstructions of a school room, street scene, fancy dress party and nursery from the days of our grandparents) an activity area, and video presentations. The museum opened in 1955 was the first museum in the world to specialize in the history of childhood. It also helps to find out how children have been brought up, dressed and educated in decades gone by.

“The People’s Story” is a museum with a difference. As the name implies, it uses oral history, reminiscence, and written sources to tell the story of the lives, work and leisure of the ordinary people of Edinburgh, from the late 18th century to the present day. The museum is filled with the sounds, sights and smells of the past – a prison cell, town crier, reform parade, cooper’s workshop, fishwife, servant at work, dressmaker, 1940s kitchen, a wash-house, pub and tea-room.

These reconstructions are complimented by displays of photographs, everyday objects and rare artifacts, such as the museum’s outstanding collections of trade union banners and friendly society regalia.

[1] In Scottish “loch” means “lake”.

[2] Beaker civilization – prehistoric people thought to have been of Iberian origin, who spread out over Europe from the 3rd millennium BC. They were skilled in metalworking, and are identified by their use of distinctive earthenware drinking vessels with various design.

[3] “Highland Line” – the division between highland and lowland

[4] Everybody in the clan had the same family name, like MacDonald or MacGregor (mac means “son of”). The clan had its own territory and was ruled by a chieftain.

[5] So they called the Saxons (and still call the English)

[6] Act of Union – 1707 act of Parliament that brought about the union of England and Scotland

[7] Calton Hill – overlooks Central Edinburgh from the east.

[8] Arthur’s Seat – hill of volcanic origin to the east of the centre of Edinburgh. It forms the core of Holyrood Park and is a dominant landmark: Castlehill is the rock of volcanic origin on which Edinburgh Castle is situated.

[9] Edwin (c585 – 633) – king of Northumbria from 617. He captured and fortified Edinburgh, which was named after him.

[10] St. Margaret (1045 – 1093) – Queen of Scotland. She was canonized in 1251 in recognition of her benefactions to the church.

[11] Tattoo – the word derives from the Dutch word “tap-toe”, which means “turn off the taps”.

[12] Knox, John (1513 (1514) – 1572) – Scottish reformer, founder of the Church of Scotland

[13] The Order of the Thistle – Scotland’s highest order

[14] Declaration of Arbroath – Declaration 26 April 1320 by Scottish nobles to their loyalty to King Robert I and of Scotland’s identity as a kingdom independent of England.

[15] Edinburgh Festival has annually been held since 1947. It takes place from August to September and includes music, drama, opera and art exhibition.

[16] Jenners – the oldest independent department store in the world.

[17] Heriot, George (1563 – 1624) – Scottish goldsmith and philanthropist; Watt, James (1736 – 1819) – Scottish engineer who developed the steam engine in 1760.

[18] Napier, John (1550 – 1617) – Scottish mathematician who invented logarithms in 1614.

[19] Tartan – it is traditional Scottish drawing which consists of wide and narrow cross stripes of different colour and size; the softest wool of vivid colouring.

[20] Falkirk – unitary authority, Scotland, 37 kilometres west of Edinburgh.

[21] Tossing the caber – Scottish athletic sport. The caber (a tapered tree trunk about 6 metres long, weighing about 100 kilograms) is held in the palms of the cupped hands and rests on the shoulder. The thrower runs forward and tosses the caber, rotating it through 180 degrees so that it lands on its opposite end and falls forward. The best competitors toss the caber about 12 metres.

[22] Great Glen – valley in Scotland following coast-to-coast geological fault line, which stretches over 100 kilometres south-west from Inverness on the North Sea to Fort William on the Atlantic coast.

[23] Pentland Firth – channel separated the Orkney Islands from the northern mainland of Scotland.

[24] RAF – Royal Air Force, the British airforce.

[25] NASA – National Aeronautics and Space Administration, a US government organization that controls space travel and the scientific study of space.

[26] Presbyterianism – a religion close to Protestantism

[27] Thistle is also the emblem of the whole Scotland.

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