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# ENGLISH FOR MASTER'S STUDENTS IN INNOVATION

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Предназначено для общеобразовательной и профессионально-ориентированной подготовки по английскому языку студентов магистрантов, обучающихся по специальности 27.04.02 «Управление качеством», 27.04.05 «Инноватика», 15.04.06 «Мехатроника и робототехника», 38.04.01 «Экономика»,38.04.02 «Менеджмент». Тесная взаимосвязь между английским языком и профильными дисциплинами обеспечивает успешность освоения иноязычной терминологии, выработку навыков чтения, реферирования, формирование умений иноязычной речи по темам данных специальностей, а также позволяет использовать иностранный язык в производственной и научной деятельности.

Структура пособия предусматривает поэтапное освоение учебного материала, углубляя знания магистрантов по специальности и нацеливая их на повышение индивидуальной активности в процессе обучения. Сквозной принцип изучения профессионально-ориентированной лексики и представление ее в едином глоссарии повышает эффективность освоения материала в рамках данного блока. Пособие поможет расширить кругозор студентов, повысить уровень их культуры и владения английским языком.

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# Contents

# Part 1

## Unit 1. Scientific and technical progress

**Task 1. Match the following keywords and definitions:**

| | | |
|---|---|---|
| 1 | up-to-date | to keep the data |
| 2 | to grow rapidly | the authorities are responsible for doing smth |
| 3 | peculiarities | to make an impact on |
| 4 | to store the information | to increase quickly |
| 5 | IT | breakout |
| 6 | social values | to provide jobs for the people |
| 7 | unemployment | characteristic features |
| 8 | to create workplaces | basic arithmetic, such as adding numbers |
| 9 | routine calculations | important aspects of social system playing the main role in maintaining the social order |
| 10 | to give access to smth | modern |
| 11 | to be enforced by the government | to destroy environment |
| 12 | individual enter-prises | computer viruses block important programs |
| 13 | intellectual terrorism | joblessness |
| 14 | to harm nature | to create the opportunity for smth |
| 15 | breakthrough | private companies |
| 16 | to have influence on | Information Technology |



**Task 2. Read the text:**

### Scientific and technical progress

The basis of scientific and technical progress of today is a new informational technology which is very different from all the previous technologies. Thanks to up-to-date software and robots new informational technologies can make many processes much faster and transmit information more quickly. It is important today because the quantity of information grows rapidly.

New informational society has its peculiarities. Firstly, more and more employees work in the sphere of service and information. Secondly, more and more huge databases appear to collect and store the information. And finally, information and IT become goods and start playing important part in the country's economy.

These processes affect social structures and values.

It becomes important to learn to get new knowledge quickly and sometimes to change your qualification. IT can first lead to unemployment, but later create even more workplaces especially for highly qualified professionals. While the hardest work can be performed by robots and routine calculations by computers, in the future people with the most creative mind and numerous fresh ideas will get better career chances.

On one hand technology development gives more access to professional and cultural information and leads to new forms of individual enterprises, but on the other hand there is a danger of total control of private life unless special laws are enforced by the government.

Another danger is «intellectual terrorism» when computer viruses block important programs.

There are other directions of technical and scientific progress of today.

One of them is the development of new ecologically clean sources of energy using sun, gravitation, winds or rain. New kind of transports and new agricultural methods that do not harm our nature are being developed today.

Breakthroughs in science have led to creation of artificial viruses for new medicines and products, body organs for transplantation and productive soils for growing vegetables and crops. Many new materials and technologies are being used in our everyday life.

All these innovations may have influence on our life, social relations and globally on our Earth.

The influence can be very different: from psychological and health problems of children who spend too much time online to an opportunity to prevent genetic diseases for future generations.

**Task 3. Answer the questions:**

1. Why is it important today to transmit information quickly?
2. What are the peculiarities of the new informational society?
3. What is IT's influence on your future career?
4. What does technology development give us? Name its progressive features and dangers.
5. What have breakthroughs in science led to?
6. Think about advantages and disadvantages of the scientific and technical progress. What are the perspectives of its future development?



**Task 4. Give the Russian equivalents to the following phrases:**

– informational technology;
– thanks to up-to-date software and robots;
– to transmit information;
– the quantity of information;
– huge databases;
– to start playing important part in the country's economy;
– to affect social structures and values;
– highly qualified professionals;
– to get better career chances;
– new forms of individual enterprises;
– a danger of total control of private life;
– intellectual terrorism;
– new ecologically clean sources of energy;
– creation of artificial viruses for new medicines and products;
– an opportunity to prevent genetic diseases for future generations.

**Task 5. Find in the text the English equivalents for the following expressions:**

– в основе современного научно-технического прогресса…;
– сильно отличаться от предшествующих технологий;
– работать в сфере информационных услуг;
– выполнить самую сложную работу;
– творческие люди со множеством новых идей;
– с одной стороны…, с другой стороны;
– направления развития научно-технического прогресса;

– развитие новых методов ведения сельского хозяйства;

– плодородные почвы для выращивания овощных и зерновых культур;

– проблемы со здоровьем / психологического характера;

– в повседневной жизни;

– для будущих поколений.

**Task 6. Use the phrases given in Tasks 4 and 5 to make up your own sentences.**

**Task 7. Complete the sentences with the words and expressions from the box:**

| | |
|---|---|
| information and IT's | up-to-date software |
| ecologically clean sources of energy | "intellectual terrorism" |
| service and information | importance |
| to change your qualification | to collect and store |
| genetic diseases for future generations | robots |

1. Sun, gravitation, winds and rain are used to develop new …. … … ….

2. Opportunity to prevent … … … … is one of the positive examples of influence innovations may have on our life.

3. The danger of blocking important programs by computer viruses is called … ….

4. Many processes are becoming much faster and information is transmitted more quickly due to … … and … .

5. The peculiarities of the new informational society are the following: employees' work in the sphere of … …, databases' ability … … … the information and … … … becoming goods, the increase of their … in the country's economy.



6. Nowadays it is very important to learn to get new knowledge quickly and even … … …

**Task 8. Translate the sentences from Russian into English.**

1. Современный научно-технический прогресс способен обеспечить прорыв в науке, способствующий развитию всего общества.

2. Обеспечивая доступ к профессиональной и культурной информации с одной стороны, развитие технологий, с другой стороны, таит опасность появления всеобщего контроля над жизнью каждого и «интеллектуального терроризма» – блокировки программ компьютерными вирусами.

3. Сегодня важным является ускорение технологических процессов и быстрая передача информации, т.к. объем информации постоянно растет.

4. Развитие информационных технологий может сначала привести к безработице, но в дальнейшем будет способствовать созданию новых рабочих мест для высококвалифицированных специалистов.

5. Шансы получить хорошую работу будут у творческих людей со множеством новых идей.

**Task 9. Summarize the text in 5-6 sentences.**

**Task 10. Give synonyms from the text:**

| | |
|---|---|
| 1. to influence | 6. personal company |
| 2. quickly, speedily | 7. complete dominance |
| 3. discovery, advancement | 8. at last, eventually |
| 4. fertile soil | 9. modern, contemporary |
| 5. the most difficult work | 10. experts in smth |

**Task 11. Give antonyms from the text:**

| | |
|---|---|
| 1. outdated | 6. to have no impact on |
| 2. in the beginning | 7. unfruitful |
| 3. the easiest work | 8. absence of absolute power |
| 4. regress | 9. joint ventures |
| 5. unskilled specialists | 10. slowly |

**Task 12. Speaking**

Discuss the latest trends in scientific and technical progress. What are the reasons for their importance?

**Task 13. Writing**

Write a short essay (8–10 sentences) on the topic "The contribution to scientific and technical progress that I admire". Mind the essay structure: introductory paragraph (1–2 sentences), main paragraph (5–8 sentences), and concluding paragraph (1–2 sentences).



# Unit 2. Networking overview

**Task 1. Match the following keywords and definitions:**

| | | |
|---|---|---|
| 1 | to bypass | Local Area Network |
| 2 | networking | a special computer designed for technical or scientific applications |
| 3 | workstation | network adapters |
| 4 | to be authenticated | a room where electrical connections are made |
| 5 | LAN | a direct chain of command from the top to the bottom |
| 6 | WAN | an application layer protocol that facilitates communication in the form of text |
| 7 | a network room (= wiring closet) | a website that allows users to communicate with one another |
| 8 | NOS | to be authorized to use the network |
| 9 | utility | the interconnection of two or more computers |
| 10 | NICs | an online platform used to have relations with other people who share similar interests or backgrounds |
| 11 | hierarchical structure | to skip, to miss |
| 12 | Discussion Board | Network Operating System |
| 13 | Social Networking | a tool, special program |
| 14 | Internet Relay Chat | Wide Area Network |

## Task 2. Read the text:

### Networking overview

A ***network*** is two or more devices that can communicate with one another and share resources. A network allows computer users to share files; communicate via e-mail; browse the Internet; share a printer, modem, or scanner; and access applications and files.

Networks can be divided into two major categories – LANs and WANs. A ***LAN (Local Area Network)*** is a group of devices that can share resources in a single area such as a room or a building. A ***WAN (Wide Area Network)*** is communication between LANs.

Internet is an example of a WAN as are two networks located in two cities. Networks are vital to businesses today. They can even be found in many homes. A technician must have a basic understanding of the devices that make up networks (computers, printers, modems, etc.) and then learn network devices. You cannot bypass computer repair and go straight into networking.

There are two basic types of LANs, a server-based network and a peer-to-peer network. With *a server-based network*, computer users login to a main computer called a server where they are authenticated (authorized to use the network). The server is a more powerful computer than a normal workstation. The server contains information about who is allowed to connect to the network, and to what network resources (files, printer, and applications) the network user is allowed access.

*A peer-to-peer network* does not have a central server. Instead, each computer is its own server. The computer user sets



up passwords to allow others access to the resources. A user uses the network to access the remote files, printer, applications, and so forth, from their own workstation. Server-based networks are more common in businesses, whereas peer-to-peer networks are more common in homes and very small businesses.

A server-based network is more secure than a peer-to-peer network. This is because the server is normally located in a locked network room or wiring closet. Also, the network users and what they are allowed to do (their network rights and permissions) are configured and stored on the network server. Servers have a special operating system loaded on them called a *NOS (Network Operating System)*. Examples of network operating systems are Novell's NetWare, Microsoft's NT Server, 2000 Server, and 2003 Server. A network operating system has utilities that allow computer user management (who is allowed onto the network), resource management (what network applications, files, printers, etc. a user can use), and security management (what a user is allowed to do with a resource such as read, write, read and write, etc.). One user ID and password is all a remote user needs to access many network resources located throughout the business organization. A network user can sit down at any computer in the organization, logon to the server, and start working with the network resources.

The server has a database of users, and their associated passwords. The server also has three applications loaded – Microsoft Excel, Microsoft Project, and Microsoft Word. These applications and associated documents are stored on the server. Whether or not the users can access these applications and documents and what they can do within each document is also stored on the server.

A server is more expensive than a regular workstation plus it requires operating system. A peer-to-peer network is not as secure as a server-based network because each computer must be configured with individual user IDs and passwords.

Management of network resources is much harder to control on a peer-to-peer network than on a server-based network. Each user is required to manage the network resources on one computer and password management can become very difficult. Remember with peer-to-peer networks, anyone who has the password can access the folder across the network.

The problem of having access to a workstation and all its resources simply by sitting down at a computer is not as much of a threat today because of the newer operating systems' features. NT Workstation and 2000 Professional cannot be accessed without a used ID and password.

In order to have a network, the following are required: network adapters (NICs), network cabling, and an operating system with network options enabled.

Some basic services computer network can offer are:

**1. Directory Services** are mapping between name and its value, which can be variable value or fixed. This software system helps to store the information, organize it, and provides various means of accessing it.

*Accounting* – in an organization, a number of users have their user names and passwords mapped to them. Directory Services provide means of storing this information in cryptic form and make available when requested.

*Authentication and Authorization* – user credentials are checked to authenticate a user at the time of login and/or periodically. User accounts can be set into hierarchical structure



and their access to resources can be controlled using authorization schemes.

*Domain Name Service* (DNS) is widely used and one of the essential services on which internet works. This system maps IP addresses to domain names, which are easier to remember and recall than IP addresses. Because network operates with the help of IP addresses and humans tend to remember website names, the DNS provides website's IP address which is mapped to its name from the back-end on the request of a website name.

**2. Communication Services**

*Electronic mail* (email) is a communication method, the basis of today's internet features. Email system has one or more email servers. All its users are provided with unique IDs. When a user sends email to other user, it is actually transferred between users with the help of email server.

*Social Networking* – you can find other known people or friends, can connect with them, and share thoughts, pictures, and videos.

*Internet Chat* provides instant text transfer services between two hosts. Two or more people can communicate with each other using text based Internet Relay Chat (IRC) services. These days, voice chat and video chat are very common.

*Discussion Boards* provide a mechanism to connect multiple people with same interests, enable the users to put queries, questions, suggestions etc. which can be seen by all other users. Others may respond as well.

*Remote Access* enables user to access the data residing on the remote computer. This feature is known as Remote desktop. This can be done via some remote device, e.g. mobile phone or home computer.

**3. Application Services** provide network based services to the users such as web services, database managing, and resource sharing.

*Resource Sharing* – to use resources efficiently and economically, network provides means to share them, may include Servers, Printers, and Storage Media.

*Databases* store data and information, process both, and enable the users to retrieve them efficiently by using queries, help organizations to make decisions based on statistics.

*Web Services* – used to connect to the internet, and access files and information services provided by the internet servers.

Computer systems help human beings to work efficiently and explore the unthinkable. When these devices are connected together to form a network, the capabilities are enhanced multiple times.

### Task 3. Answer the questions:

1. What is a network? Define its major categories.
2. What is the difference between a server-based network and a peer-to-peer network?
3. Why is a server-based network more expensive and secure?
4. What basic services can computer network offer?
5. When are the capabilities of computer systems enhanced multiple times?

### Task 4. Explain the following abbreviations:

LAN, WAN, NOS, NICs, IRC, DNS, IP, IDs.



### Task 5. Find in the text the English equivalents for the following expressions:

– общаться по электронной почте;
– локальная сеть;
– глобальная сеть;
– серверная сеть;
– одноранговая сеть;
– разрешить доступ к информации;
– закрытая сетевая комната;
– зайти на сервер;
– приложения и сопутствующие документы;
– сетевая операционная система;
– служба каталога;
– социальная сеть;
– доска обсуждений;
– удаленный доступ;
– служба доменных имен;
– служба приложений.

### Task 6. Make up sentences using expressions listed in Task 5.

### Task 7. Complete the sentences with the words and expressions from the box:

| | |
|---|---|
| network cabling | network options enabled |
| a peer-to-peer network | Remote Access |
| cryptic form | Microsoft Word |
| three applications | a central server |
| a more powerful computer | a server-based network |

1. There are two basic types of LANs, … … … and … … … .

2. Directory Services provide means of storing the information in … … and make available when requested.

3. … … enables user to access the data residing on the remote computer.

4. Network adapters, … …, and an operating system with … … … are required to have a network.

5. The server also has … … loaded – Microsoft Excel, Microsoft Project, and … ….

6. The server is … … … than a normal workstation.

7. A peer-to-peer network does not have … … .

**Task 8. Translate the sentences from Russian into English.**

1. Два или более устройства, взаимодействуя друг с другом и совместно используя ресурсы, образуют сеть, которая позволяет пользователям общаться по электронной почте, обмениваться файлами, обеспечивает доступ к приложениям и файлам.

2. Сетевая операционная система специально установлена на серверах.

3. На сервере хранится информация о возможности доступа пользователей к приложениям и документам.

4. Служба доменных имен предоставляет IP-адрес веб-сайта, сопоставляемый с его именем из серверной части по запросу имени веб-сайта пользователями, которые запоминают имена веб-сайтов, а не IP-адрес.

5. За хранение данных и информации отвечают базы данных. С помощью запросов пользователи извлекают



информацию, а организации принимают решения на основе статистики.

**Task 9. Summarize the text in 5-6 sentences.**

**Task 10. Find the sentences with modal verbs *can, may, be allowed to,* etc. in the text. Define what functional meaning they express in the sentences: *ability, possibility, certainty, permission, offer, request,* etc.**

e.g.: Social Networking – you ***can*** find other known people or friends, can connect with them, and share thoughts, pictures, and videos (possibility).

**Task 11. Speaking**

Interview

Work in pairs. Ask your partner about services and applications he has ever used. Make up a list of them. Summarize what you've learned and tell it to the class.

**Task 12. Writing**

Write 10 sentences about your computer/Internet problems and the possible reasons for this. Use the structure below.

e.g.: If you can't connect to the Internet, your router may be unplugged or powered down.

## Unit 3. Engineering as a profession

**Task 1. Match the following keywords and definitions:**

| | | |
|---|---|---|
| 1 | diverse | semiconductor electronics |
| 2 | an electronic circuit | relentless |
| 3 | a superconductor | various, versatile |
| 4 | solid-state electronics | a material that allows electrical current to flow unimpeded (free) |
| 5 | fibre optics | the ability of machines to exhibit traits associated with a human mind |
| 6 | direct current (DC) | a set of electronic circuits on one chip |
| 7 | alternating current (AC) | a branch of science concerned with the practical application of liquids in motion |
| 8 | the explosive rate of growth | a switch that cuts off the supply of electricity |
| 9 | unabated | a device composed of individual electronic components: resistors, transistors, etc., connected by wires through which electric current can flow |
| 10 | synchronization | a branch of physics that deals with heat and temperature and their relation to energy and work |
| 11 | timing | an electric current which periodically reverses direction |
| 12 | a capacitor | a branch of mechanics that deals with the mechanical properties of gases |



| | | |
|---|---|---|
| 13 | a vacuum tube | a field of engineering concerned with glass or plastic fibers used in long-distance communication |
| 14 | integrated circuits | an electric current which flows only in one direction |
| 15 | robotics | a passive two-terminal electronic component that stores electrical energy in an electrical field |
| 16 | artificial intelligence | a device that controls electric current flow in a vacuum between electrodes to which an electric potential difference has been applied |
| 17 | hydraulics | an occurrence or event |
| 18 | pneumatics | design, construction and use of machines to perform tasks traditionally done by humans |
| 19 | thermodynamics | the state of being happened at the same time |
| 20 | a cutoff switch | rapid increase of something |

**Task 2. Read the text:**

**Engineering as a profession**

The term *engineering* is derived from the word *engineer* meaning *one who operates an engine.* A modern engineer applies knowledge of science, mathematics and empirical evidence to the innovation, design, construction, operation and maintenance of structures, machines, materials, devices, systems, processes and organizations. A broad range of specialized fields of engineering emphasize on particular areas of science and types of application.

## Electrical and electronics engineering

Electrical and electronics engineering is the largest and most diverse field of engineering. It is concerned with the development and design, application, and manufacture of systems and devices that use electric power and signals. Among the most important subjects in the field are electric power and machinery, electronic circuits, control systems, computer design, superconductors, solid-state electronics, medical imaging systems, robotics, lasers, radar, consumer electronics, and fibre optics.

Despite its diversity, electrical engineering can be divided into four main branches: electric power and machinery, electronics, communications and control, and computers.

The field of *electric power and machinery* is concerned with the design and operation of systems for generating, transmitting, and distributing electric power. Engineers in this field have brought about several important developments since the late 1970s. One of these is the ability to transmit power at extremely high voltages in both the direct current (DC) and alternating current (AC) modes, reducing power losses proportionately. Another is the real-time control of power generation, transmission, and distribution, using computers to analyse the data fed back from the power system to a central station and thereby optimizing the efficiency of the system while it is in operation.

A significant advance in the engineering of electric machinery has been the introduction of electronic controls that enable AC motors to run at variable speeds by adjusting the frequency of the current fed into them. DC motors have also been made to run more efficiently this way.



*Electronics engineering* deals with the research, design, integration, and application of circuits and devices used in the transmission and processing of information. Information is now generated, transmitted, received, and stored electronically on a scale unprecedented in history, and there is every indication that the explosive rate of growth in this field will continue unabated.

Electronics engineers design circuits to perform specific tasks, such as amplifying electronic signals, adding binary numbers, and demodulating radio signals to recover the information they carry. Circuits are also used to generate waveforms useful for synchronization and timing, as in television, and for correcting errors in digital information, as in telecommunications.

Prior to the 1960s, circuits consisted of separate electronic devices – resistors, capacitors, inductors, and vacuum tubes – assembled on a chassis and connected by wires to form a bulky package. The electronics revolution of the 1970s and 1980s set the trend towards integrating electronic devices on a single tiny chip of silicon or some other semiconducting material. The complex task of manufacturing these chips uses the most advanced technology, including computers, electron-beam lithography, micro-manipulators, ion-beam implantation, and ultraclean environments. Much of the research in electronics is directed towards creating even smaller chips, faster switching of components, and three-dimensional integrated circuits.

Engineers in the field of *communications and control* work on control systems ranging from the everyday, passenger-actuated, such as those that run a lift, to the exotic, such as systems for keeping spacecraft on course. Control systems are used extensively in aircraft and ships, in military fire-control systems,

in power transmission and distribution, in automated manufacturing, and in robotics.

*Computer engineering* is now the most rapidly growing field. The electronics of computers involve engineers in design and manufacture of memory systems, of central processing units, and of peripheral devices. The field of computer science is closely related to computer engineering; however, the task of making computers more «intelligent» (artificial intelligence), through creation of sophisticated programs or development of higher level machine languages or other means, is generally regarded as the aim of computer science.

One current trend in computer engineering is microminiaturization. Engineers try to place greater and greater numbers of circuit elements onto smaller and smaller chips. Another trend is towards increasing the speed of computer operations through the use of parallel processors and superconducting materials.

### Mechanical engineering

Engineers in the field of mechanical engineering design, test, build, and operate machinery of all types; they also work on a variety of manufactured goods and certain kinds of structures. The field is divided into (1) machinery, mechanisms, materials, hydraulics, and pneumatics; and (2) heat as applied to engines, work and energy, heating, ventilating, and air conditioning. The mechanical engineer, therefore, must be trained in mechanics, hydraulics, and thermodynamics and must know such subjects as metallurgy and machine design. Some mechanical engineers specialize in particular types of machines such as pumps or steam turbines. A mechanical engineer designs not only the



machines that make products but the products themselves, and must design for both economy and efficiency. A typical example of modern mechanical engineering is the design of a car or an agricultural machine.

### Safety Engineering

Safety Engineering has as its object the prevention of accidents. In recent years safety engineering has become a specialty adopted by individuals trained in other branches of engineering. Safety engineers develop methods and procedures to safeguard workers in hazardous occupations. They also assist in designing machinery, factories, ships and roads, suggesting alterations and improvements to reduce the possibility of accident.

In the design of machinery, for example, the safety engineer tries to cover all moving parts or keep them from accidental contact with the operator, to put cutoff switches within reach of the operator and to eliminate dangerous sharp parts. In designing roads the safety engineer seeks to avoid such hazards as sharp turns and blind intersections that lead to traffic accidents.

## Task 3. Answer the questions:

1. What is engineering? What is the role of an engineer in the modern technological progress?
2. What are the fields of engineering?
3. What does electrical engineering include? Speak on its branches.
4. What is mechanical engineering? What is this field divided into?
5. Describe the duties of a safety engineer.

**Task 4. Give the Russian equivalents to the following phrases:**

– the direct current mode;
– the alternating current mode;
– the explosive rate of growth;
– semiconducting and superconducting materials;
– to form a bulky package;
– three-dimensional integrated circuits;
– ion-beam implantation;
– ultraclean environments;
– passenger-actuated control systems;
– electron-beam lithography;
– micro-manipulators;
– to safeguard workers in hazardous occupations;
– higher level machine languages;
– to generate, transmit, receive, and store information electronically;
– on a scale unprecedented in history.

**Task 5. Find in the text the English equivalents for the following expressions:**

– система управления пассажирским спуско-подъемным механизмом;
– складывать двоичные числа;
– трехмерные встроенные цепи;
– хронометраж;
– внедрение ионного пучка;
– полупроводниковая электроника;
– взрывные темпы роста;
– конденсатор;



– корпус;
– объемная упаковка;
– система обработки изображения в медицине;
– сверхпроводник;
– электронно-лучевая литография;
– сложный;
– искусственный интеллект.

**Task 6. Make up sentences using expressions listed in Tasks 4 and 5.**

**Task 7. Complete the sentences with the words and expressions from the box:**

| | |
|---|---|
| computer engineering | hazardous occupations |
| safety engineers | computer science |
| higher level machine languages | means |
| sophisticated programs | micro-miniaturization |
| modern mechanical engineering | artificial intelligence |

1. The field of computer science is closely related to …. .
2. The task of making computers more «intelligent» (… …), through creation of … … or development of … … … … or other …, is generally regarded as the aim of … … .
3. … develop methods and procedures to safeguard workers in … … .
4. An example of … … … is the design of a car or an agricultural machine.
5. Engineers try to place greater and greater numbers of circuit elements onto smaller and smaller chips. The process is called … … .

**Task 8. Translate the sentences from Russian into English.**

1. Профессия инженера требует не только знания математики, но и умения работать с различными приборами, системами, управлять процессами и современным оборудованием.

2. Инженер по охране труда и технике безопасности имеет квалификацию «инженер», разбирается в работе предприятия и отдельных процессах в частности. Он разрабатывает и внедряет мероприятия по предотвращению несчастных случаев на производстве, модернизации условий труда.

3. Знание механики, гидравлики, термодинамики, металлургии и машиностроения необходимо инженеру-механику для проектирования, изготовления и эксплуатации технологического оборудования.

4. Применение искусственного интеллекта в повседневной жизни все больше становится реальностью, однако ученые говорят об опасности этого. Умные роботы могут посчитать человека устаревшей формой и пожелать избавиться от него.

5. Электроэнергетика и машиностроение, электроника, связь и управление, компьютеры – отрасли электротехники, позволяющие разрабатывать, применять и производить системы и устройства, использующие электроэнергию и сигналы.

**Task 9. Summarize the text in 5-6 sentences.**



**Task 10. Create your CV (Resume) using the following template for Mechanical Engineer. Compare it with your group mates' ones and discuss its advantages and disadvantages while applying for a job.**

**Name, last name:** John Ashley
**Address:** flat, street, town, postcode
**e-mail:** name@hotmail.com / **telephone:** + 7 777 555 66 99

**Personal Statement**
Industrious, communicative, a team player who presents ideas effectively.
Mechanical Engineering degree in 2017.
Skilled in 3D CAD modeling and animation.

**Key Achievements**
Company: Recognized for initiative and rapid progress. Promoted to New Products Engineer

**Employment History**
01/2019 – Present
New Products Engineer, Company
Design hydraulic systems, pressure compensation systems and material selection

07/2017 – 12/2018
Commercial Vehicle Mechanic, Company
Responsible for diagnosing faults and completing servicing on a fleet of 120 tractor units and trailers, as well as being the face of the service team for the depot

**Education**
09/2012 - 06/2017
Mechanical Engineering
University, city, country

**Key Modules**: Engineering Mathematics, Electrical and Electronic Principles, Mechanical Principles, CAE and Programming, Theory of Machines and Thermodynamics, Solid Mechanics, Dynamics and Control

**Software**
Microsoft Office (Microsoft Power Point, Word, Excel and Project), SOLIDWORKS, Autodesk 3ds Max, Autodesk Simulation Mechanical, Autodesk Mudbox, Autodesk Inventor, MATLAB, Simulink, Midas NFX, Python, LabVIEW, PTC Mathcad Prime 3.1

**Personal Interests**
3D modeling and animation, classic car restoration and modification

**References on request**

### Task 11. Comment on the following attribute groups (the use of adjective + noun, adjective + noun + noun + noun and other structures). Find them in the text. Use them in the sentences of your own.

Higher level machine languages, the real-time control, passenger-actuated control systems, modern mechanical engineering, mechanical engineering design, the most rapidly growing field, electron-beam lithography, ion-beam implantation, ultraclean environments.

### Task 12. Speaking

Role play

A group of university students who study engineering is going to practice professional skills in a company. They ask



questions about future profession and their duties at work. The company's managing director, a leading specialist and other professionals are to answer their questions and make up a list of recommendations to them.

### Task 13. Writing

Write a short essay (8–10 sentences) on the topic "Engineering as a career that shapes the future". Mind the essay structure: introductory paragraph (1–2 sentences), main paragraph (5–8 sentences), and concluding paragraph (1–2 sentences).

## Unit 4. Automation and robotics

**Task 1. Match the following keywords and definitions:**

| | | |
|---|---|---|
| 1 | previously | shaft, arbour, axle, beam |
| 2 | sequences | to remind, to look like |
| 3 | an assembly plant | temperature regulating device used at home |
| 4 | nonmanufacturing systems | the amount of output (e.g. number of goods produced) per unit of input (e.g. labor, equipment, and capital) |
| 5 | automatic devices | succession, alternation |
| 6 | to resemble | parts processed by tools or machinery |
| 7 | production efficiency | to promote, to advance |
| 8 | workpieces | perforated, punctured paper |
| 9 | flyball governor | factory, where assembling or installation of parts is produced |
| 10 | steam engine | the manipulation of a spray-painting gun over the surface of the object to be coated |
| 11 | household thermostat | settlement, adjustment, pattern, design |
| 12 | a feedback device | systems referring to transport, communication, gas and electricity supply, etc. |
| 13 | to facilitate | measurements, proportions, size |
| 14 | punched paper | a process in which the robot moves the welding rod along the welding seam |
| 15 | CAD | the transfer of material and loading and unloading of the machines |



| | | |
|---|---|---|
| 16 | CAM | to grab, to seize |
| 17 | dimensions | the robot positions a spot welder against the automobile panels and frames to join them |
| 18 | FMS | the technology of computer-aided design |
| 19 | assembly | to use |
| 20 | material-handling | an apparatus for governing an engine's speed by linking the governor with the valve that controls the input of steam |
| 21 | to pick up | joining, molding, welding |
| 22 | arrangement | beforehand |
| 23 | to utilize | milling, crushing |
| 24 | a gripper | the flexible manufacturing systems |
| 25 | to grasp | shining, perfecting, refining |
| 26 | spot welding | a heat engine that performs mechanical work using steam as its working fluid |
| 27 | arc welding | dangerous, unsafe, risky |
| 28 | spray painting | a mechanism having ability to correct itself |
| 29 | manual labour | a clamping (grabbing) device |
| 30 | grinding | to take, to gather |
| 31 | polishing | the technology of computeraided manufacture |
| 32 | spindle | hand, physical work |
| 33 | hazardous | mechanical units |

**Task 2. Read the text:**

## Automation and robotics

*Automation* is the system of manufacture performing certain tasks, previously done by people, by machines only. The sequences of operations are controlled automatically. The most familiar example of a highly automated system is an assembly plant for automobiles or other complex products.

The term *automation* is also used to describe nonmanufacturing systems in which automatic devices can operate independently of human control. Such devices as automatic pilots, automatic telephone equipment and automated control systems are used to perform various operations much faster and better than could be done by people.

Automated manufacturing had several steps in its development. Mechanization was the first step necessary in the development of automation. The simplification of work made it possible to design and build machines that resembled the motions of the worker. These specialized machines were motorized and they had better production efficiency.

Industrial robots, originally designed only to perform simple tasks in environments dangerous to human workers, are now widely used to transfer, manipulate, and position both light and heavy workpieces performing all the functions of a transfer machine.

In the 1920s the automobile industry for the first time used an integrated system of production. This method of production was adopted by most car manufacturers and became known as Detroit automation.

The feedback principle is used in all automatic-control mechanisms when machines have ability to correct themselves.



The feedback principle has been used for centuries. An outstanding early example is the flyball governor, invented in 1788 by James Watt to control the speed of the steam engine. The common household thermostat is another example of a feedback device.

Using feedback devices, machines can start, stop, speed up, slow down, count, inspect, test, compare, and measure. These operations are commonly applied to a wide variety of production operations.

Computers have greatly facilitated the use of feedback in manufacturing processes. Computers gave rise to the development of numerically controlled machines. The motions of these machines are controlled by punched paper or magnetic tapes. In numerically controlled machining centres machine tools can perform several different machining operations.

More recently, the introduction of microprocessors and computers have made possible the development of *computer-aided design* and *computer-aided manufacture* (**CAD** and **CAM**) technologies. When using these systems a designer draws a part and indicates its dimensions with the help of a mouse, light pen, or other input device. After the drawing has been completed the computer automatically gives the instructions that direct a machining centre to machine the part.

Another development using automation are the *flexible manufacturing systems* (**FMS**). A computer in FMS can be used to monitor and control the operation of the whole factory.

Automation has also had an influence on the areas of the economy other than manufacturing. Small computers are used in systems called word processors, which are rapidly becoming a

standard part of the modern office. They are used to edit texts, to type letters and so on.

## Automation in Industry

Many industries are highly automated or use automation technology in some part of their operation. In communications and especially in the telephone industry dialing and transmission are all done automatically. Railways are also controlled by automatic signaling devices, which have sensors that detect carriages passing a particular point. In this way the movement and location of trains can be monitored.

Not all industries require the same degree of automation. Sales, agriculture, and some service industries are difficult to automate, though agriculture industry may become more mechanized, especially in the processing and packaging of foods.

The automation technology in manufacturing and assembly is widely used in car and other consumer product industries.

Nevertheless, each industry has its own concept of automation that answers its particular production needs.

Today most robots are used in manufacturing operations. The applications of robots can be divided into three categories:

1. material handling
2. processing operations
3. assembly and inspection.

*Material-handling* is the transfer of material and loading and unloading of the machines. Material-transfer applications require the robot to move materials or work parts from one to another. Many of these tasks are relatively simple: robots pick up parts from one conveyor and place them on another. Other transfer operations are more complex, such as placing parts in an



arrangement that can be calculated by the robot. Machine loading and unloading operations utilize a robot to load and unload parts. This requires the robot to be equipped with a gripper that can grasp parts. Usually the gripper must be designed specifically for the particular part geometry.

In robotic *processing operations*, the robot manipulates a tool to perform a process on the work part. Examples of such applications include spot welding, continuous arc welding and spray painting. *Spot welding* of automobile bodies is one of the most common applications of industrial robots. The robot positions a spot welder against the automobile panels and frames to join them. *Arc welding* is a continuous process in which the robot moves the welding rod along the welding seam. *Spray painting* is the manipulation of a spray-painting gun over the surface of the object to be coated. Other operations in this category include grinding and polishing in which a rotating spindle serves as the robot's tool.

The third application area of industrial robots is assembly and inspection. The use of robots in *assembly* is expected to increase because of the high cost of manual labour. But the design of the product is an important aspect of robotic assembly. Assembly methods that are satisfactory for humans are not always suitable for robots. Screws and nuts are widely used for fastening in manual assembly, but the same operations are extremely difficult for a one-armed robot.

*Inspection* is another area of factory operations in which the utilization of robots is growing. In a typical inspection job, the robot positions a sensor with respect to the work part and determines whether the part answers the quality specifications. In nearly all industrial robotic applications, the robot provides a

substitute for human labour. There are certain characteristics of industrial jobs performed by humans that can be done by robots:

1) the operation is repetitive, involving the same basic work motions every cycle;

2) the operation is hazardous or uncomfortable for the human worker (for example: spray painting, spot welding, arc welding, and certain machine loading and unloading tasks);

3) the workpiece or tool are too heavy and difficult to handle, the operation allows the robot to be used on.

**Task 3. Answer the questions:**

1. What is automation? Give the examples of highly automated systems.
2. What are the steps in automated manufacturing development?
3. What is Detroit automation?
4. What did James Watt invent? What principle did he use?
5. Characterize CAD and CAM technologies.
6. Why is automation a standard part of the modern office?
7. What is an industrial application of automation? Do all industries require the same degree of automation?
8. What are the categories of robots' applications? Define the terms of *spot welding*, *arc welding* and *spray painting*.
9. When can robots do industrial jobs previously performed only by humans?
10. What is the influence of automation and robotics on our life? What are the perspectives of their future development?



**Task 4. Give the Russian equivalents to the following phrases:**

– the sequences of operations;
– an assembly plant for automobiles;
– to operate independently of human control;
– to resemble the motions of a worker;
– light and heavy workpieces;
– an integrated system of production;
– automatic-control mechanisms;
– to be commonly applied to a wide variety of production operations;
– numerically controlled machining centres;
– automatic signaling devices;
– to detect carriages passing a particular point;
– consumer product industries;
– to pick up parts from one conveyor and place them on another;
– to place parts in an arrangement that can be calculated by the robot;
– to provide a substitute for human labour.

**Task 5. Find in the text the English equivalents for the following expressions:**

– погрузка и разгрузка механизмов;
– методы сборки, приемлемые для людей, но не всегда подходящие для роботов;
– высокая стоимость ручного труда;
– быть чрезвычайно сложным для однорукого робота;
– широко использоваться при креплении (деталей) в ручной сборке;

– определить, соответствует ли деталь спецификации качества;

– автопилоты;

– автоматическая телефонная аппаратура;

– автоматизированные системы управления;

– технологии автоматизированного проектирования и автоматизированного производства;

– станки с ЧПУ (числовым программным управлением);

– гибкая производственная система;

– автоматически подавать сигнал, заставляющий центр обработки обрабатывать деталь;

– набор (номера) и передача сигнала в телефонии;

– шлифовка и полировка;

– центробежный регулятор.

**Task 6. Use the phrases given in Tasks 4 and 5 to make up 5 sentences.**

**Task 7. Complete the sentences with the words and expressions from the box:**

| | |
|---|---|
| service industries | automatic pilots |
| material handling | design |
| sales | hazardous |
| repetitive | spot welding |
| steam engine | difficult |
| processing operations | automated control systems |
| FMS | agriculture |
| spray painting | assembly and inspection |
| heavy | arc welding |



1. Robots can be applied in … , … , … .

2. Robots are used when the operation is … or … , the workpiece or tool are too … and … to handle.

3. In … a computer can be used to monitor and control the operation of the whole factory.

4. The flyball governor was invented in 1788 by James Watt to control the speed of the … .

5. … , … , and some … … are difficult to automate.

6. Such devices as … … , automatic telephone equipment and … … … are used to perform various operations much faster and better than could be done by people.

7. An important aspect of robotic assembly is the … of the product.

8. The robot positions a spot welder against the automobile panels and frames to join them in … … .

9. … … is the manipulation of a spray-painting gun over the surface of the object to be coated.

10. A continuous process in which the robot moves the welding rod along the welding seam is called … … .

**Task 8. Translate the sentences from Russian into English.**

1. Первым шагом в развитии автоматизации стала механизация, способствовавшая повышению эффективности производства.

2. Робот заменяет труд человека и используется, если работа включает цикл повторяющихся действий, является опасной или сложной для выполнения человеком.

3. Текстовые редакторы, используемые для работы с документами, стали неотъемлемой частью деятельности современного офиса.

4. В результате внедрения микропроцессоров и компьютеров современная промышленность получила развитие технологии автоматизированного проектирования и автоматизированного производства.

5. Высокая стоимость ручного труда приводит к появлению все большего количества роботов, ускорению и упрощению технологических процессов.

6. Благодаря компьютерам станки с ЧПУ применяются во многих отраслях промышленности.

### Task 9. Summarize the text in 10 sentences.

### Task 10. Give synonyms from the text:

| | |
|---|---|
| 1. dangerous | 6. to use |
| 2. hand work | 7. milling |
| 3. to promote | 8. shining |
| 4. to remind | 9. shaft |
| 5. mechanical units | 10. to grab |

### Task 11. Give antonyms from the text:

| | |
|---|---|
| 1. afterward | 6. loading |
| 2. to differ from | 7. unfit, ineligible |
| 3. ineffectiveness | 8. sporadic, nonrepetitive |
| 4. to worsen | 9. unguided |
| 5. complexity | 10. reception |



### Task 12. Speaking

Create a presentation of a robot. Give it a name, tell about its functions, abilities, stages of development, price, etc.

### Task 13. Writing

Write an essay (10–12 sentences) on the topic “Automation and robotics – the future industrial progress and social stability”. Mind the essay structure: introductory paragraph (1–2 sentences), main paragraph (5–8 sentences), and concluding paragraph (1–2 sentences).

## Unit 5. Future trends

**Task 1. Match the following keywords and definitions:**

| | | |
|---|---|---|
| 1 | incoherent | a small piece of semiconductor fixed into the surface of some device |
| 2 | an ambulance crew | a gauge which resistance varies with applied force |
| 3 | to be distraught to provide information | a rigid bar resting on a pivot used to move a heavy fixed load |
| 4 | an embedded chip | science-fiction computer programs |
| 5 | lever | unclear, disordered, hard to follow |
| 6 | gear wheel | a device that has a small display optic in front of one or each eye (HMD = a head-mounted display) |
| 7 | gyro | to control a situation in a particular way |
| 8 | a strain sensor | to go around an area to check that it is free from danger |
| 9 | a gyroscopic attitude sensor | to involve oneself deeply into particular activity |
| 10 | sci-fi applications | to be upset and distressed to explain smth |
| 11 | head mounts | short for gyroscope or gyrocompass |
| 12 | to manoeuvre | a hand worn device with inbuilt sensors |
| 13 | to patrol | a device used to hold a desired attitude angle using a gyroscopic resistance force |
| 14 | to immerse | a toothed wheel in a set of gears |
| 15 | a sensor-equipped glove | a team of people providing medical help |



**Task 2. Read the text:**

### Future trends

#### Smart cards

A chip to save your life

If your friend suddenly had an accident and was unconscious or incoherent, could you provide any information to an ambulance crew? Would you know her blood type, her allergies, and the prescription drugs she takes? Probably not. Even family members may not have this information, or be too distraught themselves to provide needed medical information. Enter the MediCard, a plastic card that has an embedded chip containing all that patient information. Small computers that can read the cards are installed in ambulances and in hospital emergency rooms. This system is working successfully in some communities. The biggest problem is making sure that people carry their cards at all times.

#### Robotics

What is a micro-machine?

One of the most important steps in computing technology in the coming years is likely to be a return to mechanical methods. Using the same process used to create chips, it's possible to fabricate mechanical parts - levers, gear wheels, and small motors.

The best known example of a micro-machine was created by Sandia Laboratories in New Mexico in the US. It's a complete motor developing 50W of power in one square millimeter – still a bit big for some of the micro-machines planned for the future.

What are micro-machines going to be used for? Obvious applications are sensors, gyros, and drug delivery. The idea is that a micro-machine could have a strain sensor or a gyroscopic attitude sensor and electronics built into a single chip-sized package. The idea of using a micro-machine to deliver drugs is getting a bit closer to more sci-fi applications. Only a step further is the idea of building insect-sized robots that could do difficult jobs in very small places. Swallowing an ant-sized machine to cure you or putting one inside some failed machinery seems like a really good idea!

## Virtual Reality

Getting practical

Here are some applications of virtual reality under development. Wearing head mounts, consumers can browse for products in a "virtual showroom". From a remote location a consumer will be able to manoeuvre and view products along rows in a warehouse. Similarly, from a convenient office a security guard can patrol corridors and offices in remote locations.

Air traffic controllers may someday work like this. Microlaser scanner glasses project computer-generated images directly into the controller's eyes, immersing the controller in a three-dimensional scene showing all the aircraft in the air. To establish voice contact with the pilot of the plane, the controller merely touches the plane's image with a sensor-equipped glove.

Using virtual reality headsets and gloves, doctors and medical students will be able to experiment with new procedures on simulated patients rather than real ones.



**Task 3. Answer the questions:**

1. How can smart cards save your life in case of emergency? What is the biggest problem with them?
2. What are micro-machines going to be used for?
3. What applications of virtual reality are being developed?
4. Have you ever used micro-machines or applications described in the text?
5. What other useful applications can be developed in future?

**Task 4. Comment on the size of devices and their power:**

Small computers, micro-machine, insect-sized robots, an ant-sized machine, microlaser, a three-dimensional scene, power in one square millimeter.

**Task 5. Find in the text the English equivalents for the following expressions:**

– неожиданно попасть в аварию;
– находиться без сознания;
– принимать лекарство, прописанное врачом;
– находиться в состоянии стресса;
– быть установленным в карете скорой помощи;
– постоянно иметь при себе пластиковые карты;
– важные этапы в развитии вычислительной техники;
– в ближайшее время;
– вероятные способы использования;

– смогут выполнять сложные задачи в ограниченном пространстве;

– находиться в разработке;

– заниматься поиском товаров в виртуальном выставочном зале;

– планировать на будущее;

– авиадиспетчеры;

– проецировать компьютерные изображения;

– установить голосовой контакт с пилотом.

**Task 6. Make up 3–5 sentences using expressions listed in Task 5. Summarize the text in 4–5 sentences.**

**Task 7. Complete the sentences with the words and expressions from the box:**

| | |
|---|---|
| ”virtual showroom” | to swallow |
| putting an ant-sized machine inside | small computers |
| the MediCard | a sensor-equipped glove |

1. A plastic card that has an embedded chip containing all that patient information is … .

2. … is the place consumers can browse for products.

3. If you want to repair some failed machinery you should … .

4. A patient is … an ant-sized machine to be cured.

5. Ambulances and hospital emergency rooms install … that can read the cards.

6. One can touch the plane’s image with … to establish voice contact with the pilot.



**Task 8. Translate the sentences from Russian into English.**

1. Пластиковая карта со встроенным чипом может помочь спасти жизнь человеку в экстренной ситуации благодаря имеющейся на ней информации о пациенте.

2. Технологии будущего успешно применяются в ряде стран в медицине и технике.

3. Мини-приборы используются в медицине для лечения пациентов и проведения операций.

4. Приложения виртуальной реальности позволят студентам-медикам освоить лечение имитируемых пациентов.

5. Совершить покупки в магазине, не выходя из дома, отследить безопасность офиса на расстоянии – это возможности, ставшие реальностью.

**Task 9. Find Participle I and Participle II forms in the text.**

**Replace the underlined words with Participle I/II forms from the text.**

1. In case of emergency one should provide necessary medical information.

2. A fixed chip with all the patient information is a future trend in medicine.

3. Small computers that can read the cards are put in ambulances and in hospital emergency rooms.

4. A micro-machine could have electronics included into a single chip-sized package.

5. With virtual reality headsets and gloves, doctors and medical students will be able to experiment with new procedures on imitated patients rather than real ones.

**Task 10. Give synonyms from the text:**

| | |
|---|---|
| 1. a tendency | 6. illogical |
| 2. distant areas | 7. a very small device |
| 3. senseless | 8. to involve |
| 4. a dilemma, difficulty | 9. a customer, user |
| 5. to take in, to stomach | 10. fortunately, triumphantly |

**Task 11. Give antonyms from the text:**

| | |
|---|---|
| 1. to neglect, ignore | 6. logical, comprehensible |
| 2. a large mechanism | 7. absence of difficulty |
| 3. nearby places | 8. sensible, alive |
| 4. ineffectively, unproductively | 9. to spit out, to expel |
| 5. a producer, seller | 10. without any direction |

**Task 12. Speaking**

In groups of 4-5 discuss advantages and disadvantages of the use of science for the future development of the nation. Prove your idea.

**Task 13. Writing**

Write a short essay (8-10 sentences) on the topic "The most important invention of the future". Mind the essay structure: introductory paragraph (1–2 sentences), main paragraph (5–8 sentences), and concluding paragraph (1–2 sentences).



# Part 2

## Unit 6. The organization for economic co-operation and development

**Task 1. Study the following keywords and definitions:**

| | | |
|---|---|---|
| 1 | account (n) | a record or statement of business transactions |
| 2 | amply (adv) | more than enough |
| 3 | comparative (adj) | related to measuring one thing against another thing |
| 4 | corruption (n) | loss of honesty or purity |
| 5 | effective (adj) | useful; able to accomplish its purpose |
| 6 | taxation (n) | an act of collecting money from people and businesses for the government |
| 7 | backlash (n) | a strong or violent reaction; a sudden backward movement |
| 8 | disclosure (n) | the telling of something confidential or secret |
| 9 | audience (n) | the people who gather to see or hear a concert, play, speech or other performance |
| 10 | guidelines (n) | a description of rules or policies |
| 11 | investment (n) | a temporary donation of money in hope of making a profit |
| 12 | enterprises (n) | a business organization |
| 13 | environment (n) | an organism and everything around it including other organisms and non-living things |
| 14 | developing (v) | to grow or become more advanced |
| 15 | concentrate (v) | to give attention to the thing you are doing |

## Task 2. Read the text:

### The organization for economic co-operation and development

*Organization for Economic Co-operation and Development* (**OECD**) is an international organization whose membership comprises mainly the economically advanced countries of the world. The OECD provides a regular forum for discussions amongst government finance and trade ministers on economic matters affecting their mutual interests, particularly the promotion of economic growth and international trade, and it coordinates the provision of economic aid to the less developed countries. The OECD is a main source of international economic data and regularly compiles and publishes standardized inter-country statistics.

The Organization for Economic Co-operation and Development has published a new set of guidelines for multinational enterprises, setting out the ways in which its member countries would like these global corporations to behave. It would do better to concentrate on effective co-ordination among member governments than creating wish lists for companies.

The OECD is updating its guidelines for multinationals, first published in 1976, covering information disclosure, employment relations, the environment, taxation and corruption. But good companies already take account of the working conditions or environmental impact of their operations around the world, as part of their mission to give their shareholders a good return. Companies that, say, damage the environment face pressure group campaigns that are bad for business.

The OECD"s guidelines are therefore largely a public relations exercise. But its audience has changed. In the mid-1970s,



the guidelines were first introduced amid concern in the rich countries about a backlash in developing countries against multinationals. During the 1980s, almost all of the developing world opened up to international trade and investment.

Now, multinationals are welcomed in most poor countries. Today's backlash is from groups within the OECD member countries. This was amply demonstrated on the streets of Seattle during the failed launch of a new round of World Trade Organization negotiations. Poor countries do not want to force up their labor costs and undermine their comparative advantage. Nor do they want trade sanctions to be used in the pursuit of environmental goals.

Yet a world economy in which borders, time and distance are less and less important reduces the ability of national governments to interfere in the market – for good or ill. It raises new and legitimate concerns over the regulation of companies, competition policy and the like. In some cases, global agreements may be needed. But in the end, national governments must take the responsibility for ensuring good behaviour by companies.

An example is the OECD's convention on bribery and corruption. The OECD took a subject that many countries would rather ignore. Now there is a legally binding treaty. Governments now encourage each other to put an end to practices which, for example, allow foreign bribes to be tax deductible.

Such co-ordination between governments in setting an appropriate policy framework is far better than non-binding advice to multinationals.

**Task 3. Answer the questions:**

1. Suggest a different title for this text. Why do you think that this would make a good title?

2. What connections can you make between the text and other texts, information, or experiences?

3. If you were asked to edit this text down to half its length, what details would you remove?

4. What is the main idea of this text? What details from the text support the main idea?

5. Write 3–5 sentences summarizing the text.

**Task 4. Give the Russian equivalents to the following phrases:**

– economically advanced countries;
– information disclosure;
– a legally binding treaty;
– allow foreign bribes to be tax deductible;
– coordinates the provision of economic aid;
– force up their labor costs;
– less developed countries;
– standardized inter-country statistics;
– damage the environment;
– take the responsibility for ensuring good behaviour;
– multinational enterprises;
– employment relations;
– public relations exercise;
– raises new and legitimate concerns;
– convention on bribery and corruption.



**Task 5. Find in the text the English equivalents for the following expressions:**

– организация экономического сотрудничества и развития;
– акционеры;
– экономически развитые страны;
– свод руководящих принципов;
– содействие экономическому росту;
– инвестиции;
– основной источник международных экономических данных;
– налогообложение;
– стандартизированная статистика;
– связи с общественностью;
– многонациональные предприятия;
– раскрытие информации;
– коррупция;
– условия труда;
– трудовые затраты.

**Task 6. Make up sentences using expressions listed in Tasks 4 and 5.**

**Task 7. Use the word bank to identify the word that best completes the sentence:**

| | | | | |
|---|---|---|---|---|
| account | amply | comparative | corruption | effective |
| taxation | backlash | disclosure | audience | guidelines |
| investment | enterprises | environment | developing | concentrate |

1. Cities depend on _____ to pay for police and firefighters.

2. All the company's _____s were lost in the fire.

3. We need to _____ on this problem.

4. The _____ of a turtle includes the pond it lives in, the other organisms in the pond, and all the non-living things in the pond.

5. There was a public _____ against the tax increase.

6. This new coat is very _____ at keeping me warm.

7. He made an _____ in a new business.

8. New York _____ from a small village into a big city.

9. She wrote a _____ article about which TV was better.

10. Police _____ is a problem in some cities.

11. There was a small _____ for the play.

12. The show store is a small _____, but it is growing.

13. They are _____ stocked with food.

14. The _____ of his having two wives made his families angry.

15. All new students were given the school's _____.

**Task 8. Write the letter of word that matches the definition on the line. If it helps, feel free to also draw a line between the definition and the matching word.**

A. account
B. amply
C. comparative



D. corruption
E. effective
F. taxation
G. backlash
H. disclosure
I. audience
J. guidelines
K. investment
L. enterprises
M. environment
N. developing
O. concentrate

1. _____ An act of collecting money from people and businesses for the government.

2. _____ A record or statement of business transactions.

3. _____ To give attention to the thing you are doing.

4. _____ An organism and everything around it including other organisms and non-living things.

5. _____ A strong or violent reaction; a sudden backward movement.

6. _____ Useful; able to accomplish its purpose.

7. _____ A temporary donation of money in hope of making a profit.

8. _____ To grow or become more advanced.

9. _____ Related to measuring one thing against another thing.

10. _____ Loss of honesty or purity.

11. _____ The people who gather to see or hear a concert, play, speech or other performance.

12. _____ A business organization.

13. _____ More than enough.

14. _____ The telling of something confidential or secret.

15. _____ A description of rules or policies.

**Task 9. For each of the words in the box, write an original sentence using the word. Circle the vocabulary word in each sentence. Be sure to write a sentence that would help the reader better understand the meaning of the word.**

| | | | | |
|---|---|---|---|---|
| account | amply | comparative | corruption | effective |
| taxation | backlash | disclosure | audience | guidelines |
| investment | enterprises | environment | developing | concentrate |

**Task 10. Find in the text synonyms for the following words:**

1. readership
2. generously
3. company
4. manual
5. looseness
6. bribery
7. efficient
8. tax collection
9. surroundings
10. contrastive

**Task 11. Translate sentences from Russian into English**

- ОЭСР – это международная организация, объединяющая, в основном, экономически развитые страны.



- В сферу общих интересов экономически развитых стран входят такие проблемы как стимулирование экономического роста, развитие международной торговли, а также предоставление экономической помощи менее развитым странам.
- ОЭСР регулярно публикует статистические данные об экономическом положении в различных странах мира.
- В настоящее время мировая экономика, для которой границы, время и расстояние не имеют большого значения, снижает способность национальных правительств вмешиваться в рынок.
- Хорошие компании уже принимают во внимание условия труда или воздействие своей деятельности на окружающую среду по всему миру, как часть их миссии, чтобы дать своим акционерам хорошую отдачу.
- Правительства различных стран поддерживают друг друга в идее положить конец практике, которая позволяет иностранным взяткам облагаться налогом.

**Task 12. Speaking**

Watch the latest news on economic cooperation and development and discuss it in groups.

**Task 13. Writing**

Write a short essay (8–10 sentences) on the topic “The economic situation of my country”. Mind the essay structure: introductory paragraph (1–2 sentences), main paragraph (5–8 sentences), and concluding paragraph (1–2 sentences).

## Unit 7. Management in Europe

**Task 1. Study the following keywords and definitions:**

| | | |
|---|---|---|
| 1 | comparison (n) | measure one object against another |
| 2 | complex (adj) | hard to understand or do |
| 3 | conservative (adj) | resists change |
| 4 | corporate (adj) | belonging to a corporation |
| 5 | emphasis (n) | any special attention put on a particular action, thought or part of speech |
| 6 | enhance (v) | to improve, increase, or intensify |
| 7 | grandeur (n) | the quality of being big and beautiful |
| 8 | principle (n) | a general truth or proposition |
| 9 | success (n) | reaching desired goal |
| 10 | differentiate (v) | to show or see the difference between things |
| 11 | particularly (adv) | specifically; especially |
| 12 | remain (v) | to stay the same or in the same place |
| 13 | interests (n) | attention or concern for something or someone |
| 14 | can (v) | to have the ability to do something |
| 15 | tend (v) | more likely to do or be one thing than another |

**Task 2. Read the text:**

**Management in Europe**

It is difficult to generalize about management in Europe because, although in the latter half of the twentieth century Europe has become more integrated, there remain differences between countries. Nevertheless, generalizations can provide



some value, particularly when comparing management in Europe with management in the USA and Japan.

By comparison with Japan, management in Europe tends to be more individualist and more focused on the needs of corporations and individuals than on the needs of the country. The result is that those in Europe are not given to stoicism, preferring instead to articulate dissatisfaction. The European view of business is that economic success is meant to enhance the wealth and welfare of citizens, not the grandeur of the state. Managerial processes tend – by comparison with Japan, at least – to reflect the acts and decisions of individuals rather than being collectivist processes. There is a sharper separation between the interests of business and government; European corporations are distinct and identifiable, and are more strongly differentiated from the state sector. By the same principle, trade unions are based on an aggregation of individual interests.

Comparisons with management in the USA are more complex; European companies tend to be at one and the same time more conservative and less systematized than their US counterparts. They exhibit more complex and variable attitudes towards organizational conflict and change. There are also differences between the two in the ways in which corporate strategy is perceived and communicated, and European companies tend to have longer time horizons. There is less emphasis on management systems and more on individual judgment and discretion; attitudes towards measurement, in particular performance appraisal, are more sceptical in Europe than in the USA.

In personal terms, European managers tend to be less single – minded than their US counterparts and more likely to recognize secondary (non profit-related) goals; there is an emphasis

on “being” rather than “becoming”. Other differences include more variable and qualified attitudes to inter-company mobility, a more conditional view of the rights of the individual and less utilitarian attitudes to language, again all part of an outlook which is more conservative and less systematized.

In terms of relations with the external environment, European corporations are likely to have more relations with government and accept a degree of government involvement in the capitalist economy than are US companies. There is a greater acceptance of trade unionism and the recognition that unionism will contain an ideological component. There is also more acceptance of worker democracy. As a result, European companies are more likely to accept negotiation and compromise in labor relations.

These international comparisons highlight the fact that there remains a large degree of heterogeneity in management in Europe. The most obvious aspect of this heterogeneity is the difference between eastern and western Europe, itself in large part the legacy of communism. However, there are also many differences in management values, style and practice between western European countries, as evidenced by a number of empirical studies and surveys.

An important issue arising from this heterogeneity is the need to manage diversity. This is a concept particularly familiar to Europe: for the member countries international markets and exports have always been of primary importance, forcing cooperation and integration. Given this need, some measure of success must be acknowledged.



**Task 3. Answer the questions:**

1. What is the difference between European and Russian management?
2. What is the difference between management in the US and Europe?
3. Write 3–5 sentences summarizing the text.
4. What is the most obvious aspect of governance heterogeneity in Europe?
5. Briefly describe the features of management in Europe.

**Task 4. Give the Russian equivalents to the following phrases:**

– performance appraisal;
– non profit-related;
– given to stoicism;
– counterparts;
– welfare of citizens;
– grandeur of the state;
– accept negotiation;
– distinct and identifiable;
– trade unions;
– worker democracy;
– articulate dissatisfaction;
– time horizons;
– judgment and discretion;
– enhance the wealth;
– inter-company mobility.

**Task 5. Find in the text the English equivalents for the following expressions:**

– обобщения могут дать некоторую ценность;
– склонны к стоицизму;
– выражать недовольство;
– благосостояние граждан;
– возникающий из неоднородности;
– управление разнообразием;
– первостепенное значение;
– необходимо признать;
– профсоюзное движение;
– рабочая демократия;
– идеологическая составляющая;
– внешняя среда;
– служебная аттестация;
– временные горизонты;
– богатство, имущество, благосостояние.

**Task 6. Make up sentences using expressions listed in Tasks 4 and 5.**

**Task 7. Use the word bank to identify the word that best completes the sentence:**

| | | | | |
|---|---|---|---|---|
| comparison | complex | con-servative | corporate | emphasis |
| enhance | grandeur | principle | success | differentiated |
| particularly | remain | interests | can | tends |

1. The _____ that all people are equal by law is important to democracy.



2. The White House is beautiful but it cannot match the _____ of the Taj Majal.
3. His _____ in cars keeps him busy on week-ends.
4. Spices _____ the taste of food.
5. It can be hard to _____ real money from counterfeit.
6. His hair _____ed black until he was 60.
7. She _____ to work hard, but sometimes she relaxes.
8. Tom tried to fix the computer but the problem was too _____.
9. His taste in music is very _____ but he loves new movies.
10. I _____ read and write in English.
11. There is a lot of _____ on saving money in my house.
12. She made a _____ of the different com-puters before buying one.
13. Everyone had a good time – the party was a _____ !
14. This isn't my car, it's a _____ car.
15. They are all nice but this one is _____ well made.

**Task 8. Write the letter of word that matches the definition on the line. If it helps, feel free to also draw a line between the definition and the matching word.**

A. comparison
B. complex

C. conservative
D. corporate
E. emphasis
F. enhance
G. grandeur
H. principle
I. success
J. differentiated
K. particularly
L. remain
M. interests
N. can
O. tends

1. _____ A general truth or proposition.
2. _____ The quality of being big and beautiful.
3. _____ Attention or concern for something or someone.
4. _____ To improve, increase, or intensify.
5. _____ To show or see the difference between things.
6. _____ To stay the same or in the same place.
7. _____ More likely to do or be one thing than another.
8. _____ Hard to understand or do.
9. _____ Resists change.
10. _____ Have the ability to do something.
11. _____ Any special attention put on a particular action, thought or part of speech
12. _____ Measure one object against another.
13. _____ Reaching desired goal.
14. _____ Belonging to a corporation.
15. _____ Specifically; especially.



**Task 9. For each of the words in the box, write an original sentence using the word. Circle the vocabulary word in each sentence. Be sure to write a sentence that would help the reader better understand the meaning of the word.**

| | | | | |
|---|---|---|---|---|
| comparison | complex | conservative | corporate | emphasis |
| enhance | grandeur | principle | success | differentiated |
| particularly | remain | interests | can | tends |

**Task 10. Find in the text antonyms for the following words:**

1. dissatisfaction
2. failure
3. impoverishment
4. insignificance
5. individualist
6. connection
7. unrecognizable
8. disorganized, unordered
9. certain, convinced
10. impractical, unnecessary

**Task 11. Translate the sentences from Russian into English**

1. Европейский менеджмент, в отличие от японского, в большей степени сконцентрирован на интересах корпораций и отдельных личностей, нежели на интересах всего государства.

2. Европейские компании отличаются от американских тем, что они более консервативны и в то же время ме-

нее упорядочены, им присущи более сложные и разнообразные установки в отношении организационных конфликтов и перемен.

3. Взаимодействие европейских компаний с внешней средой характеризуется тем, что они имеют более интенсивные контакты с правительственными органами и не возражают против определенной доли участия государства в капиталистической экономике.

4. Вопрос управления разнообразием стратегий и стилей менеджмента особенно актуален для европейских стран, многие из которых стремятся к сотрудничеству и интеграции.

5. Наиболее ценные сведения, касающиеся различия систем управления в восточной и западной Европе, представлены в ряде практических разработок и научных исследований.

6. Европейские менеджеры, как правило, менее целеустремлены, чем их американские коллеги, и с большей вероятностью признают второстепенные (некоммерческие) цели.

### Task 12. Speaking

Imagine that you are a manager of a take-away pizza business company. Make up a plan of its future development.

### Task 13. Writing

Write a short essay (8–10 sentences) on the topic "What is effective management in the organization for me?" Mind the essay structure: introductory paragraph (1–2 sentences), main paragraph (5–8 sentences), and concluding paragraph (1–2 sentences).



# Unit 8. Marketing

**Task 1. Study the following keywords and definitions:**

| | | |
|---|---|---|
| 1 | contribution (n) | something given or offered; money given to something |
| 2 | effective (adj) | useful; able to accomplish its purpose |
| 3 | facilitate (v) | to make it easier to do something |
| 4 | fundamental (adj) | the beginning parts of something |
| 5 | philosophy (n) | the general principles or ideas that explain a way of thinking |
| 6 | technology (n) | knowledge of machinery, computers, etc. |
| 7 | deploy (v) | to bring something into action, to make use of |
| 8 | process (n) | the steps or actions needed to do something |
| 9 | improve (v) | to make better |
| 10 | ability (n) | skill or talent |
| 11 | provide (v) | to give or supply something |
| 12 | performance (n) | the quality of action |
| 13 | approach (n) | way of dealing with a person or problem |
| 14 | resources (n) | something that can be used |
| 15 | can (v) | to have the ability to do something |

### Task 2. Read the text:

**Marketing**

Marketing can be conceptualized as both a philosophy, which holds that an organization's human and physical resources should be deployed to serve customers, and as a technology which provides tools and techniques to improve business

performance. The fundamental domain of marketing is the exchange relationship, the core of which is the transaction between buyer and seller. Also within the subject of exchange, marketing concerns itself with the institutions and mechanisms which facilitate exchange, the social norms and implications of marketing activity for society, and the legal, moral and ethical dimensions of the marketing process.

The philosophy of any subject is the set of principles that provide the rationale for the existence of the discipline. In marketing, this philosophy can be viewed from different but related perspectives. First, there is the seller's perspective. The prominence of marketing in business is largely the result of its contribution to managerial performance and its ability to explain what, where, when and how sellers carry out their part of the exchange. This positivist approach has been supplemented by the development of marketing management as a process, or normative approach, which examines what firms and their managers should be doing in order to be more effective.

A second perspective is that of buyer behavior. Using this perspective, marketers seek to understand why, where, when and how buyers make purchases. Although this may seem to be part of the same process, it has been argued that consumer behavior and the study of the consumption patterns of individuals, groups and organizations should be an independent subject, separate from marketing management. The emergence of consumer protection legislation and consumer advocacy groups confirms there is often a mismatch between the parties in the exchange process, which needs to be addressed.

A third perspective examines the processes of marketing exchange from an interaction perspective, which views the



buyer and seller as interdependent rather than independent, appreciates the similarity of their tasks and assumes purchases are part of an ongoing relationship rather than single, discrete events. This perspective thus tries to reconcile the twin goals of individual consumer satisfaction with organizational needs for survival, growth and profitability. Although the concept of interaction has existed in industrial and organizational marketing for some time, it is receiving increased attention as a way of understanding marketing processes for all types of exchange.

### Task 3. Answer the questions:

1. What is the fundamental field of marketing?
2. What allows to identify the emergence of the law on consumer protection?
3. Describe the concept of marketing in a few words.
4. Write 3–5 sentences summarizing the text.
5. What is the philosophy of any subject? How this philosophy is viewed in marketing?

### Task 4. Identify how adjectives are used in the sentences below:

1. In marketing, this philosophy can be viewed from different but related perspectives.
2. The fundamental domain of marketing is the exchange relationship, the core of which is the transaction between buyer and seller.
3. This perspective thus tries to reconcile the twin goals of individual consumer satisfaction with organizational needs for survival, growth and profitability.

4. The prominence of marketing in business is largely the result of its contribution to managerial performance and its ability to explain what, where, when and how sellers carry out their part of the exchange.

**Task 5. Give the Russian equivalents to the following phrases:**

– discrete events;
– consumer advocacy groups;
– techniques;
– existence of the discipline;
– fundamental domain;
– facilitate exchange;
– consumption patterns;
– ongoing relationship;
– consumer protection legislation;
– ethical dimensions;
– prominence of marketing;
– improve business performance;
– contribution to managerial performance;
– mismatch;
– appreciates the similarity.

**Task 6. Find in the text the English equivalents for the following expressions:**

– инструменты и методы;
– моральные аспекты;
– обоснование существования дисциплины;
– вклад в управленческую деятельность;
– согласовывать;



– предмет обмена;
– дискретные события;
– отдельный;
– независимый;
– рассматривать, исследовать;
– способствующий обмену;
– появление законодательства;
– биржевые отношения;
– потребление;
– удовлетворение потребителей.

**Task 7. Make up sentences using expressions listed in Tasks 5 and 6.**

**Task 8. Use the word bank to identify the word that best completes the sentence:**

| | | | | |
|---|---|---|---|---|
| contribution | effective | facilitate | fundamental | philosophy |
| technology | deployed | process | improve | ability |
| provides | performance | approach | resources | can |

1. An umbrella _____ protection from the rain.
2. He studied harder to _____ his grades.
3. The general _____ his troops along the beach.
4. Our country has many _____ like land and water, but no oil.
5. Jim's _____ is to study the problem before starting to work.
6. The wealthy man made a _____ to the charity.
7. He has the _____ to be a great baseball player.

8. Arithmetic is _____ to higher mathematics.

9. This new coat is very _____ at keeping me warm.

10. I _____ read and write in English.

11. The _____ of making a pot of coffee only takes a few minutes.

12. Subways _____ people working far from their homes.

13. Tom's _____ in the game was terrible! He must be very angry.

14. Computer _____ improves every year.

15. The company's _____ is to buy when prices are low and sell when prices are high.

**Task 9. Write the letter of word that matches the definition on the line. If it helps, feel free to also draw a line between the definition and the matching word.**

A. contribution
B. effective
C. facilitate
D. fundamental
E. philosophy
F. technology
G. deployed
H. process
I. improve
J. ability
K. provides
L. performance
M. approach
N. resources
O. can



1. _____ Give or supply something.

2. _____ Make better.

3. _____ To bring something into action, to make use of.

4. _____ Something that can be used.

5. _____ Way of dealing with a person or problem.

6. _____ Something given or offered; money given to something.

7. _____ Skill or talent.

8. _____ The beginning parts of something.

9. _____ Useful; able to accomplish its purpose.

10. _____ Have the ability to do something.

11. _____ The steps or actions needed to do something.

12. _____ To make it easier to do something.

13. _____ The quality of action.

14. _____ Knowledge of machinery, computers, etc.

15. _____ The general principles or ideas that explain a way of thinking.

**Task 10. For each of the words in the box, write an original sentence using the word. Circle the vocabulary word in each sentence. Be sure to write a sentence that would help the reader better understand the meaning of the word.**

| | | | | |
|---|---|---|---|---|
| contribu-tion | effective | facilitate | fundamen-tal | philos-ophy |
| technology | deployed | process | improve | ability |
| provides | perfor-mance | approach | resources | can |

**Task 11. Make the words of sentences from the text in the correct order:**

1. Satisfaction perspective thus tries to reconcile of individual ehis with organizational needs for the twin goals survival consumer.

2. The transaction buyer domain of marketing is seller the the exchange, the core fundamental of which is relationship between and.

3. Of any the discipline is the set of philosophy principles the that provide the subject rationale for the existence of.

4. Of marketing interaction some the understanding concept has organizational existed in of although industrial and marketing for time, it is receiving increased attention as a way processes for all types of exchange.

5. Emergence consumer groups which of consumer parties protection legislation and legislation advocacy addressed groups confirms often a mismatch the between the parties in the exchange process, which needs to be there is.

**Task 12. Translate the sentences from Russian into English:**

1. Философия любого предмета, включая маркетинг, устанавливает ряд принципов, дающих логическое обоснование самому существованию этого предмета.

2. Современная технология предоставляет технические средства и методы, способные улучшить функционирование экономики.

3. В задачи маркетинга, с учетом поведения потребителя, входит понимание мотивов покупателя, то есть, зачем, а также где, когда и как люди совершают покупки.



4. Некоторые ученые полагают, что исследование потребительских моделей отдельных лиц, групп людей и целых организаций должно стать специальной наукой, не зависимой от управления маркетингом.

5. Процесс взаимодействия потребителя и продавца подразумевает достижение двух связанных между собой целей – удовлетворение потребностей индивидуального покупателя и обеспечение выживания, роста и получения дохода компанией-продавцом.

6. Фундаментальной областью маркетинга являются биржевые отношения, ядром которых является сделка между покупателем и продавцом.

**Task 13. Speaking**

Imagine that you are a group of young people, who want to open a shop selling CDs of black music – jazz, soul, rap, etc. What kind of marketing research are you going to provide?

**Task 14. Writing**

Write a short essay (8–10 sentences) on the topic “Impact of marketing research on sales”. Mind the essay structure: introductory paragraph (1–2 sentences), main paragraph (5–8 sentences), and concluding paragraph (1–2 sentences).

# Unit 9. Investment

**Task 1. Study the following keywords and definitions:**

| | | |
|---|---|---|
| 1 | further (adj) | more distant or advanced |
| 2 | intrinsic (adj) | a part of the nature of something |
| 3 | minimize (v) | to make less |
| 4 | principle (n) | a general truth or proposition |
| 5 | protection (n) | the act of keeping something safe |
| 6 | significant (adj) | important |
| 7 | occurr (v) | to happen |
| 8 | note (v) | to bring attention to something; to point out |
| 9 | investment (n) | a temporary donation of money in hope of making a profit |
| 10 | falter (v) | to become weak and slow for a moment |
| 11 | found (v) | to locate something |
| 12 | assets (n) | money, or anything that can be sold to get money |
| 13 | can (v) | to have the ability to do something |
| 14 | risk (n) | actions that may result in loss |
| 15 | effectively (adv) | in a way that produces the result that was intended |

**Task 2. Read the text:**

**The timeless investment principles**

Investment is related to saving and deferring consumption. Investment is involved in many areas of the economy, such as business management and finance whether for households, firms, or governments.



In finance, investment is putting money into something with the expectation of gain, usually over a longer term. This may or may not be backed by research and analysis. Most or all forms of investment involve some form of risk, such as investment in equities, property, and even fixed interest securities which are subject to inflation risk.

In contrast putting money into something with a hope of short-term gain, with or without thorough analysis, is gambling or speculation. This category would include most forms of derivatives, which incorporate a risk element without being long-term homes for money, and betting on horses. It would also include purchase of e.g. a company share in the hope of a short-term gain without any intention of holding it for the long term. Under the efficient market hypothesis, all investments with equal risk should have the same expected rate of return: that is to say there is a trade-off between risk and expected return. But that does not prevent one from investing in risky assets over the long term in the hope of benefiting from this trade-off. The common usage of investment to describe speculation has had an effect in real life as well: it reduced investor capacity to discern investment from speculation, reduced investor awareness of risk associated with speculation, increased capital available to speculation, and decreased capital available to investment.

Always invest with a Margin of Safety: *Margin of Safety* is the principle of buying a security at a significant discount to its intrinsic value, which is thought to not only provide high-return opportunities, but also to minimize the downside risk of an investment. In simple terms, Graham's goal was to buy assets worth $1 for $0.50. He did this very, very well. To Graham, these business assets may have been valuable because of their sta-

ble earning power or simply because of their liquid cash value. It wasn't uncommon, for example, for Graham to invest in stocks where the liquid assets on the balance sheet (net of all debt) were worth more than the total market cap of the company (also known as "net nets" to Graham followers). This means that Graham was effectively buying businesses for nothing. While he had a number of other strategies, this was the typical investment strategy for Graham. This concept is very important for investors to note, as value investing can provide substantial profits once the market inevitably re-evaluates the stock and ups its price to fair value. It also provides protection on the downside if things don't work out as planned and the business falters. The safety net of buying an underlying business for much less than it is worth was the central theme of Graham's success. When chosen carefully, Graham found that a further decline in these undervalued stocks occurred infrequently. While many of Graham's students succeeded using their own strategies, they all shared the main idea of the "Margin of safety".

**Task 3. Answer the questions:**

1. In what areas are investments involved??
2. Write 3–5 sentences summarizing the text.
3. Why Graham's strategy is very important for investors?
4. What are the investments related to?
5. Describe the efficient market hypothesis.

**Task 4. Give the Russian equivalents to the following phrases:**

– deferring consumption;
– gambling;



– backed by research;
– households;
– betting on horses;
– undervalued stocks;
– expectation of gain;
– efficient market hypothesis;
– equities;
– fixed interest securities;
– speculation;
– derivatives;
– intention of holding;
– trade-off between risk and expected return;
– substantial profits.

**Task 5. Find in the text the English equivalents for the following expressions:**

– долгосрочная перспектива;
– краткосрочная выгода;
– осведомленность инвесторов;
– компромисс;
– гипотеза эффективного рынка;
– отличать инвестиции;
– риск инфляции;
– ожидание прибыли;
– инвестиции в недвижимость;
– домашнее хозяйство;
– рискованные активы;
– отличать инвестиции;
– способность инвесторов;
– уменьшение имеющегося капитала;
– безопасность со значительной скидкой.

**Task 6. Make up sentences using expressions listed in Tasks 4 and 5.**

**Task 7. Use the word bank to identify the word that best completes the sentence:**

| | | | | |
|---|---|---|---|---|
| further | intrinsic | minimize | principle | protection |
| significant | occurred | note | investment | falters |
| found | assets | can | risk | effectively |

1. You need sunblock for extra _____ from the sun.
2. The _____ that all people are equal by law is important to democracy.
3. TV is getting better but it has _____ to go before we get 3D pictures at home.
4. Wanting to be the best is _____ to being a great athlete.
5. I _____ read and write in English.
6. The dentist used Novocaine to _____ the pain.
7. He made an _____ in a new business.
8. Smoking is a _____ that can kill you.
9. Leo was nervous speaking to the class, but he never _____.
10. The accident _____ on a rainy night.
11. He _____d how nice her new dress was.
12. The Brooklyn bridge was _____ to the growth of New York City.
13. She owned a house, which was her largest _____.



14. I lost my keys but Joe _____ them.
15. Children have to learn to communicate _____.

**Task 8. Write the letter of word that matches the definition on the line. If it helps, feel free to also draw a line between the definition and the matching word.**

A. further
B. intrinsic
C. minimize
D. principle
E. protection
F. significant
G. occurred
H. note
I. investment
J. falters
K. found
L. assets
M. can
N. risk
O. effectively

1. _____ The act of keeping something safe.
2. _____ A general truth or proposition.
3. _____ More distant or advanced.
4. _____ A part of the nature of something.
5. _____ Have the ability to do something.
6. _____ To make less.
7. _____ A temporary donation of money in hope of making a profit.
8. _____ Actions that may result in loss.
9. _____ To become weak and slow for a moment.
10. _____ Happen.

11. _____ To bring attention to something; to point out.

12. _____ Important.

13. _____ Money, or anything that can be sold to get money.

14. _____ To locate something.

15. _____ in a way that produces the result that was intended

**Task 9. For each of the words in the box, write an original sentence using the word. Circle the vocabulary word in each sentence. Be sure to write a sentence that would help the reader better understand the meaning of the word.**

| | | | | |
|---|---|---|---|---|
| further | intrinsic | minimize | principle | protection |
| significant | occurred | note | investment | falters |
| found | assets | can | risk | effectively |

**Task 10. Find in the text synonyms for the following words:**

1. preserving
2. housekeeping
3. cash
4. hazard
5. decrease
6. necessarily
7. rebate
8. profit
9. authority
10. banking



**Task 11. Translate sentences from Russian into English**

1. Концепция Грэма очень важна для инвесторов, поскольку стоимостное инвестирование может обеспечить существенную прибыль, как только рынок неизбежно переоценит акции и поднимет их цену до справедливой стоимости.

2. Инвестировать следует с запасом безопасности: запас безопасности – это принцип покупки безопасности со значительной скидкой к ее внутренней стоимости, которая минимизирует риск снижения инвестиций.

3. В области финансовой деятельности инвестиции – это вкладывание денег во что-то с ожиданием прибыли, обычно в более долгосрочной перспективе.

4. Для Грэма не было редкостью инвестировать в акции, где ликвидные активы на балансе стоили больше, чем общая рыночная капитализация компании.

5. Согласно гипотезе эффективного рынка, все инвестиции с равным риском должны иметь одинаковую ожидаемую норму прибыли: то есть существует компромисс между риском и ожидаемой прибылью.

6. В большинстве компаний существует определенный риск, такой как инвестиции в акции, недвижимость и даже ценные бумаги с фиксированным процентом, подверженные риску инфляции.

**Task 12. Speaking**

Imagine that you have just come from a secret meeting of a company's board of directors, which has made a decision that you know will financially ruin a close friend of yours, unless he/she can sell some shares before the board's decision becomes

known. You are having dinner at his/her home that same evening. Should he/she expect you to warn him/her? Should you do so?

### Task 13. Writing

Write a short essay (8–10 sentences) on the topic "For what purpose should money be invested and why?" Mind the essay structure: introductory paragraph (1–2 sentences), main paragraph (5–8 sentences), and concluding paragraph (1–2 sentences).



## Glossary of terms

| № | term | definition |
|---|---|---|
| | **A** | |
| 1 | ability (n) | a skill or talent |
| 2 | account(n) | a record or statement of business transactions |
| 3 | alternating current (AC) | an electric current which periodically reverses direction |
| 4 | an ambulance crew | a team of people providing medical help |
| 5 | amply (adv) | more than enough |
| 6 | approach (n) | a way of dealing with a person or problem |
| 7 | arc welding | a process in which the robot moves the welding rod along the welding seam |
| 8 | arrangement (n) | settlement, adjustment, pattern, design |
| 9 | artificial intelligence | an ability of machines to exhibit traits associated with a human mind |
| 10 | assembly (n) | joining, molding, welding |
| 11 | an assembly plant | a factory, where assembling or installation of parts is produced |
| 12 | assets (n, pl) | money, or anything that can be sold to get money |
| 13 | audience (n) | the people who gather to see or hear a concert, play, speech or other performance |
| 14 | to be authenticated | to be authorized to use the network |
| 15 | automatic devices | mechanical units |

| № | term | definition |
|---|---|---|
| | **B** | |
| 16 | backlash (n) | a strong or violent reaction; a sudden backward movement |
| 17 | breakthrough (n) | breakout |
| 18 | bypass (v) | to skip, to miss |
| | **C** | |
| 19 | CAD | the technology of computer-aided design |
| 20 | CAM | the technology of computer-aided manufacture |
| 21 | can (v) | to have the ability to do something |
| 22 | capacitor (n) | a passive two-terminal electronic component that stores electrical energy in an electrical field |
| 23 | comparative (adj) | related to measuring one thing against another one |
| 24 | comparison (n) | measuring one object against another |
| 25 | complex (adj) | hard to understand or do |
| 26 | concentrate (v) | to give attention to the thing you are doing |
| 27 | conservative (adj) | resisting change |
| 28 | contribution (n) | something given or offered; money given to something |
| 29 | corporate (adj) | belonging to a corporation |
| 30 | corruption (n) | loss of honesty or purity |
| 31 | to create workplaces | to provide jobs for the people |
| 32 | a cut off switch | a switch that cuts off the supply of electricity |



| № | term | definition |
|---|---|---|
| | **D** | |
| 33 | deploy (v) | to bring something into action, to make use of |
| 34 | developing (n) | growing or becoming more advanced |
| 35 | differentiate (v) | to show or see the difference between things |
| 36 | dimensions (n) | measurements, proportions, size |
| 37 | disclosure (n) | the telling of something confidential or secret |
| 38 | Discussion Board | a website that allows users to communicate with one another |
| 39 | direct current (DC) | an electric current which flows only in one direction |
| 40 | to be distraught to provide information | to be upset and distressed to explain smth |
| 41 | diverse (adj) | various, versatile |
| | **E** | |
| 42 | effective (adj) | useful; able to accomplish its purpose |
| 43 | effectively (adv) | in a way that produces the result that was intended |
| 44 | an electronic circuit | a device composed of individual electronic components: resistors, transistors, etc., connected by wires through which electric current can flow |
| 45 | an embedded chip | a small piece of semiconductor fixed into the surface of some device |
| 46 | emphasis (n) | any special attention put on a particular action, thought or part of speech |

| № | term | definition |
|---|---|---|
| 47 | enhance (v) | to improve, increase, or intensify |
| 48 | to be enforced by the government | the authorities are responsible for doing smth |
| 49 | enterprise (n) | a business organization |
| 50 | environment (n) | an organism and everthing around it including other organisms and non-living things |
| 51 | the explosive rate of growth | rapid increase of something |
| | **F** | |
| 52 | facilitate (v) | to promote, advance, make it easier to do something |
| 53 | falter (v) | to become weak and slow for a moment |
| 54 | a feedback device | a mechanism having ability to correct itself |
| 55 | fibre optics | a field of engineering concerned with glass or plastic fibers used in long-distance communication |
| 56 | flyball governor | an apparatus for governing an engine's speed by linking the governor with the valve that controls the input of steam |
| 57 | FMS | Flexible Manufacturing Systems |
| 58 | found (v) | to locate something |
| 59 | fundamental (adj) | the beginning part(s) of something |
| 60 | further (adj) | more distant or advanced |
| | **G** | |
| 61 | gear wheel | a toothed wheel in a set of gears |
| 62 | to give access to smth | to create the opportunity for smth |



| № | term | definition |
|---|---|---|
| 63 | grandeur (n) | the quality of being big and beautiful |
| 64 | grasp (v) | to grab, seize |
| 65 | grinding (n) | milling, crushing |
| 66 | gripper (n) | a clamping (grabbing) device |
| 67 | to grow rapidly | to increase quickly |
| 68 | guidelines (n) | a description of rules or policies |
| 69 | gyro (n) | short for gyroscope or gyrocompass |
| 70 | a gyroscopic attitude sensor | a device used to hold a desired attitude angle using a gyroscopic resistance force |
| | **H** | |
| 71 | to harm nature | to destroy environment |
| 72 | to have influence on | to make an impact on |
| 73 | hazardous (adj) | dangerous, unsafe, risky |
| 74 | head mounts | a device that has a small display optic in front of one or each eye (HMD – a head-mounted display) |
| 75 | hierarchical structure | a direct chain of command from the top to the bottom |
| 76 | household thermostat | temperature regulating device used at home |
| 77 | hydraulics (n) | a branch of science concerned with the practical application of liquids in motion |
| | **I** | |
| 78 | immerse (v) | to involve oneself deeply into particular activity |
| 79 | improve (v) | to make better |
| 80 | incoherent (adj) | unclear, disordered, hard to follow |

| № | term | definition |
|---|---|---|
| 81 | individual enterprises | private companies |
| 82 | integrated circuits | a set of electronic circuits on one chip |
| 83 | intellectual terrorism | computer viruses blocking important programs |
| 84 | interest (n, -s) | attention or concern for something or someone |
| 85 | Internet Relay Chat | an application layer protocol that facilitates communication in the form of a text |
| 86 | intrinsic (adj) | a part of the nature of something |
| 87 | investment (n) | a temporary donation of money in hope of making a profit |
| 88 | IT | Information Technology |
| | **L** | |
| 89 | LAN | Local Area Network |
| 90 | lever (n) | a rigid bar resting on a pivot used to move a heavy fixed load |
| | **M** | |
| 91 | manoeuvre (v) | to control a situation in a particular way |
| 92 | manual labour | hand, physical work |
| 93 | material-handling | the transfer of material and loading / unloading of machines |
| 94 | minimize (v) | to make less |
| | **N** | |
| 95 | networking (n) | the interconnection of two or more computers |
| 96 | a network room (= wiring closet) | a room where electrical connections are made |
| 97 | NICs | network interface controllers / cards – network adapters |



| № | term | definition |
|---|---|---|
| 98 | nonmanufacturing systems | systems referring to transport, communication, gas and electricity supply, etc. |
| 99 | NOS | Network Operating System |
| 100 | note (v) | to bring attention to something; to point out |
| | **O** | |
| 101 | occurr (v) | to happen |
| | **P** | |
| 102 | particularly (adv) | specifically; especially |
| 103 | patrol (v) | to go around an area to check that it is free from danger |
| 104 | peculiarity (n) | a characteristic feature |
| 105 | performance (n) | the quality of action |
| 106 | philosophy (n) | the general principles or ideas that explain a way of thinking |
| 107 | pick up (v) | to take, gather |
| 108 | pneumatics (n) | a branch of mechanics that deals with the mechanical properties of gases |
| 109 | polishing (n) | shining, perfecting, refining |
| 110 | previously (adv) | beforehand |
| 111 | principle (n) | a general truth or proposition |
| 112 | process (n) | the steps or actions needed to do something |
| 113 | production efficiency | the amount of output (e.g. number of goods produced) per unit of input (e.g. labor, equipment, and capital) |
| 114 | protection (n) | the act of keeping something safe |
| 115 | provide (v) | to give or supply something |
| 116 | punched paper | perforated, punctured paper |

| № | term | definition |
|---|---|---|
| | **R** | |
| 117 | remain (v) | to stay the same or in the same place |
| 118 | resemble (v) | to remind, to look like |
| 119 | resource (n) | something that can be used |
| 120 | risk (n) | action that may result in loss |
| 121 | robotics (n) | design, construction and use of machines to perform tasks traditionally done by humans |
| 122 | routine calculations | basic arithmetic, such as adding numbers |
| | **S** | |
| 123 | sci-fi applications | science-fiction computer programs |
| 124 | a sensor-equipped glove | a hand worn device with inbuilt sensors |
| 125 | sequence (n, -s) | succession, alternation |
| 126 | significant (adj) | important |
| 127 | Social Networking | an online platform used to have relations with other people who share similar interests or backgrounds |
| 128 | social values | important aspects of a social system playing the main role in maintaining the social order |
| 129 | solid-state electronics | semiconductor electronics |
| 130 | spindle (n) | shaft, arbour, axle, beam |
| 131 | spot welding | the robot positioning of a spot welder against the automobile panels and frames to join them |



| № | term | definition |
|---|---|---|
| 132 | spray painting | the manipulation of a spray-painting gun over the surface of the object to be coated |
| 133 | steam engine | a heat engine that performs mechanical work using steam as its working fluid |
| 134 | to store the information | to keep the data |
| 135 | a strain sensor | a gauge which resistance varies with applied force |
| 136 | success (n) | reaching desired goal |
| 137 | superconductor (n) | a material that allows electrical current to flow unimpeded (free) |
| 138 | synchronization (n) | the state of being happened at the same time |
| 139 | thermodynamics (n) | a branch of physics that deals with heat and temperature and their relation to energy and work |
| | **T** | |
| 140 | taxation (n) | an act of collecting money from people and businesses for the government |
| 141 | technology (n) | knowledge of machinery, computers, etc. |
| 142 | tend (v) | to be more likely to do or be one thing than another |
| 143 | timing (n) | an occurrence or event |
| | **U** | |
| 144 | unabated (adj) | relentless |
| 145 | unemployment (n) | joblessness |
| 146 | up-to-date (adj) | modern |
| 147 | utilize (v) | to use |
| 148 | utility (n) | a tool, special program |

| № | term | definition |
|---|---|---|
| | **V** | |
| 149 | a vacuum tube | a device that controls electric current flow in a vacuum between electrodes to which an electric potential difference has been applied |
| | **W** | |
| 150 | WAN | Wide Area Network |
| 151 | workpiece (n, -s) | a part processed by tools or machinery |
| 152 | workstation (n) | a special computer designed for technical or scientific applica-tions |



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