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ТОМСКИЙ ПОЛИТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ»**

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**ПРОФЕССИОНАЛЬНЫЙ  
ИНОСТРАННЫЙ ЯЗЫК  
(АНГЛИЙСКИЙ)  
Часть 1**

для студентов направления  
09.03.01 «Информатика и вычислительная техника»

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# UNIT 1

## INVENTIONS, TECHNOLOGY AND SOCIETY

### LEAD-IN

1. Look at pictures A–F. They show ways in which technology affects how we live. Identify the different items in each picture.

A



B



D



C



E



F



2. Match the effects of technology to pictures A–F. Decide which effects are positive, and which are negative.

- |                     |                         |                        |
|---------------------|-------------------------|------------------------|
| 1) fast travel      | 5) cheap power          | 9) overweight people   |
| 2) river pollution  | 6) noise pollution      | 10) global warming     |
| 3) nuclear missiles | 7) road deaths          | 11) easy communication |
| 4) less housework   | 8) 8) space exploration | 12) mass entertainment |

**Example:** Picture A – rocket. Positive effect: space exploration. Negative effect: nuclear missiles.

## READING

### Text 1

#### 3. Before reading the text about inventors and their inventions, answer the questions.

- 1) What are the most important inventions or innovations for you at work? And at home? What do you know about their inventors?
- 2) Do you often listen to the radio? Why so? What do you know about the inventor of the “clockwork radio”? Read the first paragraph of the text and check your answers.

#### CLOCKWORK RADIO\*



Trevor Baylis is an inventor. In 1991, he heard about the problem of bringing health information to people in rural Africa. Radio was the best way but people had no electricity and could not pay for expensive batteries. So he invented a radio that doesn't need mains power

or batteries. Instead, it consists of a spring, gears, and a small generator.

So how does his clockwork radio actually function? As you turn the handle on the side of the radio, you wind up a spring. It's the same kind of steel spring used in car safety belts. It takes 60 turns to wind up the spring fully.

When the spring starts to unwind, the gears engage. There are three 1:10 step-up gears. The last step-up link is a pulley. Pulleys run more quietly than gears so this reduces noise. Each time the first gear turns, the generator turns one thousand times. As it turns, it generates electricity—a voltage of 3V at about 30 mA. The spring has enough power to run the radio for 30 minutes before you have to wind it up again.

More than two million clockwork radios are in use all over the world. Trevor Baylis has also invented an ‘electric shoe’. It charges batteries as you walk.

---

\* Glendinning Eric H. Technology 1: student's Book. – Oxford: Oxford University Press, 2007.

**4. Scan the text. What do the following numbers and quantities refer to?**

- |                          |         |          |
|--------------------------|---------|----------|
| a) more than two million | b) 60   | c) 3V    |
| d) 30 minutes            | e) 1991 | f) 30 mA |

**5. Complete the sentences using information from the text.**

- 1) As you turn the handle on the side of the radio, \_\_\_\_\_.
- 2) When the spring unwinds, \_\_\_\_\_.
- 3) As the generator turns, \_\_\_\_\_.
- 4) The spring has enough power to run the radio for 30 minutes before \_\_\_\_\_.
- 5) The “electric shoe” charges batteries as \_\_\_\_\_.

**Text 2**

**6. Read the texts describing the effects of new technology on people’s work. Match each person to his/her job.**

- |            |               |
|------------|---------------|
| 1) Vera    | a) shop owner |
| 2) Michael | b) doctor     |
| 3) Pauline | c) musician   |
| 4) Alex    | d) teacher    |

*Vera:* I can get patients’ lab results – blood and biochemistry – through the Health Service intranet. No delays, no need to wait for paper copies. It is much faster.

*Michael:* My students can use the Internet to practise their German. They exchange emails with German students – half the time in English, half in German. It’s more realistic. And I can use the Web to get up-to-date material in German. I have a satellite receiver at home so I can watch German TV and record programmes for use in class.

*Pauline:* People pay with plastic. Now it’s more cards than cash. It’s safer because there’s less money in the shop but I have to pay the card companies each time. And I don’t get my money if someone uses a stolen card.

*Alex:* It’s not good. My sales are much worse. Instead of buying CDs, people download individual tracks from the Internet.

**7. Read again and decide whether each person makes comments, which are positive, negative, or both. Add some more ideas of your own. Think of your own job and say what positive and negative effects new technology has on it.**

	Positive	Negative
Vera		
Michael		
Pauline		
Alex		
You		

## VOCABULARY

### 8. Fill in the blanks with the necessary form of the word.

In the present globalized world, we are living in the era of (1) \_\_\_\_\_ technology. When compared with olden days, we are having better facilities and luxuries with the help of increased technology.

**ADVANCE**

There are so many advantages with improved technology in our (2) \_\_\_\_\_ life. With the help of mobile technology we are able to talk to our friends and relatives who are living far from us. With the help of internet, we are able to learn new things and online courses etc. With the help of aviation technology we are able to reach (3) \_\_\_\_\_ places within hours which took years of time to reach in olden days. We are using the all (4) \_\_\_\_\_ resources available for making our life better. With progressive technology in the agriculture field, we are able to meet food (5) \_\_\_\_\_ of people all over the world.

**DAY**

**DISTANCE**

**NATURE**

**REQUIRE**

On the other hand, there are instances, which show the problems with advanced technology, or the (6) \_\_\_\_\_ for one problem with the help of technology is giving rise to another problem. Instead of taking care

**SOLVE**

(7) \_\_\_\_\_ we are sending sms or giving a call on important occasions. With the use of internet children are getting (8) \_\_\_\_\_ to online games and their physical activities and exercises are becoming considerably less. The same aviation technology is giving health problems for their workers and creating serious (9) \_\_\_\_\_ threats. With the heavy usage of fertilizers soil is losing its (10) \_\_\_\_\_ fertility and varieties of plants become extinct.

**PERSONAL**

**ADDICT**

**ENVIRONMENT  
NATURE**

Technology is like a coin which has both positive and negative sides. We are the deciders and we have to choose how to use it.



**9. In the left-hand column, different branches of technology are represented. Match them to their descriptions given in the right-hand column.**

Electrical engineering	is about designing, building, and looking after structures.
Electronic engineering	is about generating and supplying power.
Information technology	is about making useful things from raw materials.
Mechanical engineering	is applying engineering to take advantage of the sea.
Chemical engineering	is about designing and making all the parts of machines that move. That could mean rocket science or bike design – and everything in between.
Marine engineering	is about using the processes which change materials in a chemical or physical way. The science behind these processes helps to find out the best way to make the right products.
Manufacturing engineering	is about using computers for collecting, storing, and sending information.
Civil engineering	is about designing and making machines that use electric power.

**Make a list of some other branches of technology and explain them in English.**

**10. Choose the most suitable word given for each blank.**

The electronic age is what we currently live in: it can be (1) \_\_\_\_\_ as the time between 1940 and right now. The ENIAC was the first high-speed, digital computer capable of being reprogrammed to (2) \_\_\_\_\_ a full range of computing problems. This computer was (3) \_\_\_\_\_ to be used by the U.S. Army for artillery firing tables. This machine was even bigger than the Mark 1 taking up 1800 square feet and weighing almost 50 tons. It mainly used vacuum tubes to (4) \_\_\_\_\_ its calculations.

There are 4 main sections of digital computing. The first was the era of vacuum tubes and punch cards like the ENIAC and Mark 1. Rotating magnetic drums were (5) \_\_\_\_\_ for internal storage. The second generation replaced vacuum tubes with transistors, punch cards were replaced with magnetic tape, and rotating magnetic drums were replaced by magnetic cores for internal storage. Also during this time high-level (6) \_\_\_\_\_ languages were created such as FORTRAN and COBOL. The third generation (7) \_\_\_\_\_ transistors with integrated circuits, magnetic tape was used throughout all computers, and magnetic core turned into metal oxide semiconductors. An actual operating system showed (8) \_\_\_\_\_ around this time along with the advanced pro-

programming language BASIC. The fourth and (9) \_\_\_\_\_ generation brought in CPUs (central processing units) which contained memory, logic, and control circuits all on a single chip. The personal computer was (10) \_\_\_\_\_ (Apple II). The graphical user interface (GUI) was developed.

- |     |               |                   |              |                 |
|-----|---------------|-------------------|--------------|-----------------|
| 1.  | A. shown      | B. defined        | C. said      | D. found        |
| 2.  | A. create     | B. find           | C. decide    | D. solve        |
| 3.  | A. designed   | B. done           | C. innovated | D. sold         |
| 4.  | A. make       | B. calculate      | C. do        | D. form         |
| 5.  | A. served     | B. used           | C. operated  | D. made         |
| 6.  | A. developing | B. computing      | C. program   | D. programming  |
| 7.  | A. replaced   | B. took the place | C. held      | D. interchanged |
| 8.  | A. out        | B. off            | C. up        | D. in           |
| 9.  | A. last       | B. latest         | C. final     | D. latter       |
| 10. | A. modernised | B. done           | C. grown     | D. developed    |

### ***TRANSLATION***

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

- 1) The term “innovation” can be defined as something original and more effective and, as a consequence, new, that breaks into the market or society.
- 2) In the process of developing an invention, the initial idea may change and the invention may become simpler and more practical.
- 3) Technology is the use of scientific knowledge to solve practical problems, especially in industry and commerce.
- 4) The initial idea of the Internet is credited to Leonard Kleinrock after he published his first paper entitled “Information Flow in Large Communication Nets” on May 31, 1961.
- 5) Construction engineering involves planning and execution of the designs from site development, hydraulic and environmental engineers.
- 6) Red biotechnology is applied to medical processes. Some examples are the designing of organisms to produce antibiotics, and the engineering of genetic cures through genetic manipulation.
- 7) Space exploration is conducted both by human spaceflights and by robotic spacecraft.
- 8) Airbags are normally designed with the intention of supplementing the protection of an occupant who is correctly restrained with a seatbelt.
- 9) Pollution became a popular issue after World War II, due to radioactive fallout from atomic warfare and testing.
- 10) Whether you rent or own, cutting your lighting bill is one of the easiest ways to save energy and money in the home.

## ***SPEAKING***

**12. Work in pairs. One person thinks of an invention. Another asks questions to guess what the invention is. You can only ask yes/no questions.**

**For example:**

- |  |             |
|--|-------------|
| • Was it invented in the 19 <sup>th</sup> century? | Yes.        |
| • Is it made of metal?                             | Partly.     |
| • Does it work with electricity?                   | Yes.        |
| • Do you find it in the home?                      | Yes.        |
| • Is it used for communication?                    | Yes.        |
| • Is it the telephone?                             | Yes, it is. |

**13. Work in pairs. Discuss how commercially successful could these inventions or discoveries be?**

- A portable mini-fridge that is battery powered
- A personal helicopter that has four separate engines and a parachute
- A kind of hearing aid that automatically translates from English to your language

**14. You can invest £ 1 million. Which of the projects mentioned in Ex. 13 would you invest in?**

## ***WRITING***

**15. Study the information in Appendix 1. Write the abstract to the article given. You should write 100–120 words.**

### **ROBOT ON YOUR SHOULDER KEEPS A FRIEND (OR PARENT) CLOSE\***



Ever feel like you have a little person on your shoulder keeping track of your every move, providing encouragement to keep up the good work or stop you from doing something bad? That little person may soon be more than just your conscience; it could be a robot that provides real-time interaction between you and a remote friend (or parent) as you do what you do. Imagine going on

---

\* <http://wrobelmlayne.typepad.com/blog/2012/05/robot-on-your-shoulder-keeps-a-friend-or-parent-close.html>

a trip, for example, and bringing along your best friend who's stuck at home, or sticking a robot on your child's shoulder to remotely chaperone a Friday night out.

The robot, known as the miniature humanoid, or MH-2, is under development at Yamagata University in Japan. It has head and body moves like a person. It even breathes like one. The idea is that a person stands in front a TV screen or an immersive display with a sensor such as a Kinect. This person sees whatever the person with the robot sees.

“Meanwhile, the robot on your shoulder acts like an avatar, duplicating the speech and gestures of your friend right there for you to interact with directly”, IEEE reports in its Automation blog. For now, the robot is controlled by servos in a 22 pound backpack, which would make bringing along a friend for every moment of a trip quite cumbersome, as well as awkwardly geeky. But when the telepresence technology catches up with the imagination as illustrated in the video clip below, this could serve to keep friends and family close when they physically far apart.

# UNIT 2

## INFORMATION TECHNOLOGY

### *LEAD-IN*

**1. Look at the pictures. What uses for information technology can you think of in these places or situations?**



**2. Match the examples of computer use in column A with the areas of application in column B. More than one answer is sometimes possible.**

- 1) using barcodes to identify items and prices
- 2) calculating the exact distance to a target
- 3) producing scale models of new designs
- 4) identifying an employee by his or her voice
- 5) checking credit cards used for payments
- 6) issuing seat numbers
- 7) analysing blood tests
- 8) storing employee records

- a) design
- b) hospital
- c) airport
- d) supermarket
- e) the home

- 9) keeping a record of all borrowings
- 10) calculating the stress on a component
- 11) controlling the temperature of a washing machine
- 12) monitoring the safety of each stage in the process
- 13) warning when aircraft are too close
- 14) monitoring the life signs of a patient
- 15) comparing fingerprints
- 16) coordinating information from all parts of a war-zone

- f) oil refinery
- g) military
- h) library
- i) security

**3. Now list the uses for computers in an area of technology you are familiar with or you work with.**

## **READING**

### **Text 1**

**4. Match the terms given in the left-hand column to the statements given in the right-hand column. Then while reading check your answers.**

1) edutainment	a) software that enables computers to “think” like experts
2) multimedia	b) use computers to stay in touch with the office while working at home
3) expert system	c) internet system designed to provide free, interactive access to vast resources for people all over the world
4) telecommute	d) multimedia materials with a combination of educational and entertainment content
5) information superhighway	e) a combination of text with sound, video, animation, and graphics

## **COMPUTERS MAKE THE WORLD SMALLER AND SMARTER\***

The ability of tiny computing devices to control complex operations has transformed the way many tasks are performed, ranging from scientific research to producing consumer products. Tiny ‘computers on a chip’ are used in medical equipment, home appliances, cars and toys. Workers use handheld computing devices to collect data at a customer site, to generate forms, to control inventory, and to serve as desktop organisers.

Not only is computing equipment getting smaller, it is getting more sophisticated. Computers are part of many machines and devices that once required continual human supervision and control. Today, computers in security systems result in safer environments, computers in cars improve energy efficiency, and computers in phones provide features such as call forwarding, call monitoring, and call answering.

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\* <http://www.monographies.ru/ru/book/section?id=5095>

These smart machines are designed to take over some of the basic tasks previously performed by people; by so doing, they make life a little easier and a little more pleasant. Smart cards store vital information such as health records, drivers' licenses, bank balances, and so on. Smart phones, cars, and appliances with built in computers can be programmed to better meet individual needs. A smart house has a built-in monitoring system that can turn lights on and off, open and close windows, operate the oven, and more.

With small computing devices available for performing smart tasks like cooking dinner, programming the VCR, and controlling the flow of information in an organization, people are able to spend more time doing what they often do best – being creative. Computers can help people work more creatively.

Multimedia systems are known for their educational and entertainment value, which we call 'edutainment'. Multimedia combines text with sound, video, animation, and "graphics, which greatly enhances the interaction between user and machine and can make information more interesting and appealing to people. Expert systems software enables computers to 'think' like experts. Medical diagnosis expert systems, for example, can help doctors pinpoint a patient's illness, suggest further tests, and prescribe appropriate drugs.

Connectivity enables computers and software that might otherwise be incompatible to communicate and to share resources. Now that computers are proliferating in many areas and networks are available for people to access data and communicate with others, personal computers are becoming interpersonal PCs. They have the potential to improve the way we relate to each other significantly. Many people today telecommute – that is, use their computers to stay in touch with the office while they are working at home. With the proper tools, hospital staff can get a diagnosis from a medical expert hundreds or thousands of miles away.

Similarly, the disabled can communicate more effectively with others using computers.

Distance learning and video conferencing are concepts made possible with the use of an electronic classroom or boardroom accessible to people in remote locations. Vast databases of information are currently available to users of the Internet, all of whom can send mail messages to each other. The information superhighway is designed to significantly expand this interactive connectivity so that people all over the world will have free access to all these resources.

People power is critical to ensuring that hardware, software, and connectivity are effectively integrated in a socially responsible way. People – computer users and computer professionals – are the ones who will decide which hardware, software, and networks endure and how great an impact they will have on our lives. Ultimately people power must be exercised to ensure that computers are used not only efficiently but in a socially responsible way.

**5. Find the answers to the following questions in the text you have just read.**

- 1) Name some types of devices that use “computers on a chip”.
- 2) What are the benefits of using computers with the following items?
  - a) Security systems
  - b) Cars
  - c) Phones
- 3) What are smart cards used for?
- 4) What are the advantages of multimedia?
- 5) What types of computing systems are made available to people in remote locations using electronic classrooms or boardrooms?

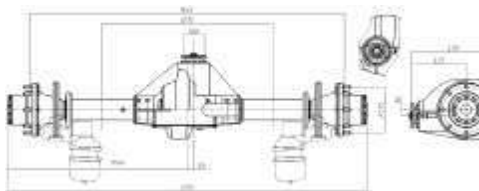
**6. Read the text again and say if the statements are True (T) or False (F). If the statement is false, give the right variant.**

- 1) Desktop organisers are programs that require desktop computers.
- 2) Computers are sometimes used to monitor systems that previously needed human supervision.
- 3) Networking is a way of allowing otherwise incompatible systems to communicate and share resources.
- 4) The use of computers prevents people from being creative.
- 5) Computer users do not have much influence over the way that computing develops.

## **Text 2**

### **CADCAM**

**7. Look at the pictures below. What uses for computers in car production can you see?**





**8. What do you think terms 1–4 mean? Read the text and check your answers.**

1) CAD

2) CAM

3) CIM

4) CNC

### **COMPUTER USE IN CAR INDUSTRY**

All products begin with an idea. In the past, car designers worked first on paper. At a later stage models were made in wood and fiberglass. Now everything is done using CAD (Computer-aided design) programs. These programmes allow designers to work in two or three dimensions (2-D or 3-D) but most new designs are created using a solid modeling program which allows the model to be viewed from any angle. It can also be viewed by engineers and executives anywhere in the world.

The models have accurate dimensions and the design files can be sent to rapid modelling devices to produce a prototype. Before a single component is produced, programmes will have worked out the forces acting on it. Crash conditions can be simulated to test the safety features of the car. Assembly can be simulated to work out the best way of building the car. This saves time and money.

For components such as engine parts, when the design is complete, the file is imported into a CAM (Computer-aided manufacturing) programme. Here, all the machining operations are planned. The file is then sent to a post-processor which converts the data into a set of instructions in a form which can be read by Computer numerical controlled (CNC) machine tools. These instructions are fed to a CNC controller which controls the machine tools which shape the finished product.

In complete Computer-integrated manufacturing (CIM), computers control the assembly line and monitor the supply of materials, ordering new supplies when needed. They can calculate when tools need to be replaced. Computers also permit changes in a product to be made easily. Orders can be customized to meet the needs of a particular client. ‘Special editions’ of cars can be produced to attract new customers to a model, for example the BMW Mini.

On the assembly line, computer-controlled robots are used for tasks such as welding and painting. Robots with sensors check the finished vehicle for defects. For example, they can check the paint thickness and how well the doors fit.

**9. List the things computers can do in the design and production of a car.**

*Example: Computers allow 2-D and 3-D designs to be made, calculate dimensions from a design...*

**10. Complete column B of the table according to the text 2.**

*Example: Designs were produced on paper but now they are produced by CAD programs.*

<i>A How was it done in the past?</i>	<i>B How is it done now?</i>
1) designs produced on paper	a)
2) dimensions calculated by measuring	b)
3) models made by hand	c)
4) real cars crash-tested	d)
5) welding done by hand	e)
6) cars inspected by people	f)
7) supplies ordered by staff	g)
8) painting done by workers	h)

**VOCABULARY**

**11. Read the text and choose the most suitable word given for each blank.**

Digital computers can be (1) \_\_\_\_\_ into six main types, depending on their size and power: they are mainframes, minicomputers, desktop PCs, laptops, notebooks and handheld computers.

‘Mainframes’ are the largest and most (2) \_\_\_\_\_ computers. The basic configuration of a mainframe consists of a central system which (3) \_\_\_\_\_ immense amounts of data very quickly. This central system provides data information and computing facilities for hundreds of terminals connected together in a network. Mainframes are used by large companies, factories and universities.

‘Minicomputers’ are smaller and less powerful than mainframes. They can handle multi-tasking, that is, they can (4) \_\_\_\_\_ more than one task at the same time. Minicomputers are mainly used as file servers for terminals. Typical applications (5) \_\_\_\_\_ academic computing, software engineering and other sophisticated applications in which many users (6) \_\_\_\_\_ resources.

PCs carry out their processing on a (7) \_\_\_\_\_ microchip. They are used as personal computers in the home or as workstations for a group. Typical examples are the IBM PC, or the Apple Macintosh. Broadly speaking, there

are two classes of personal computer: (a) desktop PCs, which are designed to be placed on your desk, and (b) (8) \_\_\_\_\_ PCs, which can be used as a tiny notebook. This is why they are called 'notebooks' and 'laptops'. The (9) \_\_\_\_\_ models can run as fast as similar desktop computers and have similar configurations. They are ideal for business executives who travel a lot.

The smallest computers can be held in one hand. They are called handheld computers or palmtops. They are used as PC companions or as electronic organizers for (10) \_\_\_\_\_ notes, reminders and addresses.\*

- |                   |             |                |                 |
|-------------------|-------------|----------------|-----------------|
| 1. A. divided     | B. shared   | C. split       | D. seen         |
| 2. A. strong      | B. powerful | C. intelligent | D. tiny         |
| 3. A. understands | B. gets     | C. processes   | D. works        |
| 4. A. give        | B. make     | C. fail        | D. perform      |
| 5. A. include     | B. consist  | C. keep        | D. are composed |
| 6. A. divide      | B. take     | C. steal       | D. share        |
| 7. A. lonely      | B. single   | C. one         | D. singular     |
| 8. A. movable     | B. handy    | C. portable    | D. compact      |
| 9. A. latest      | B. last     | C. late        | D. final        |
| 10. A. reserving  | B. doing    | C. dealing     | D. storing      |

**12. Translate the names of different types of computer and say who the possible users of each type of the computer are.**

mainframe	pad	PDA
desktop PC	netbook	laptop

- 1) Marketing research person collecting data from the general public.
- 2) Large company processing payroll data.
- 3) Travelling salesperson giving marketing presentations.
- 4) Large scientific organisation processing work on nuclear research.
- 5) Businessperson keeping track of appointments while travelling.
- 6) Graphic designer.
- 7) Secretary doing general office work.

**13. Read the email about computers available at TEI Inc. Then, choose the correct answers to make the text complete.**

phones	PDA's	employees	disposal
desktop computers	technology	workstations	server
handheld PCs	supercomputer		

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\* <http://lingualeo.com/ru/jungle/types-of-computer-59257#/page/1>

Thanks for including TEI Inc. in your article on workplace (1) \_\_\_\_\_. We have many types of computers at our (2) \_\_\_\_\_. First, all employees receive (3) \_\_\_\_\_ and (4) \_\_\_\_\_, but we only use those for word processing and spreadsheets. Of course, some programs are too powerful for desktops, so many employees use the faster (5) \_\_\_\_\_. And we do have a few laptops and (6) \_\_\_\_\_. However, (7) \_\_\_\_\_ only use them on business trips. Most employees just answer email with their cell (8) \_\_\_\_\_. The new (9) \_\_\_\_\_ provides access to all printers. Finally, our mainframe processes our largest data files. No need for a (10) \_\_\_\_\_ yet!

Regards,  
Bruce Roberts

#### **14. Read the sentence and choose the correct word.**

- 1) My (PDA/mainframe) notifies me when I have a meeting.
- 2) I have a (laptop/supercomputer) to do work on the plane.
- 3) John has a (server/desktop computer) because he only uses simple programs.
- 4) This (computer/server) runs programs, but doesn't have Internet access.
- 5) A (workstation/handheld PC) is smaller than a laptop, but still has a keyboard.
- 6) Connect to the (server/PDA) to use that printer.
- 7) A (supercomputer/handheld PC) is the most powerful machine in the world.
- 8) A (handheld PC/mainframe) is a mobile device that functions as a personal information manager.

#### ***TRANSLATION***

#### **15. Translate from English into Russian.**

- 1) The ever-changing field of information technology often leaves managers wondering which IT developments will best help production in their organization.
- 2) CAM may also refer to the use of a computer to assist in all operations of a manufacturing plant, including planning, management, transportation and storage.
- 3) When you buy groceries at a supermarket, a computer is used with laser and barcode technology to scan the price of each item and present a total.
- 4) Computers can listen to your voice and change what you say into a written message or into orders.

- 5) In the next ten years we can expect more sophisticated human-computer interfaces with efficient voice and handwriting recognition; the penetration of techniques such as tele-surgery into mainstream clinical practice; and sophisticated undergraduate and postgraduate computer-based training.
- 6) Notebook is about the size of a piece of writing paper and the most common type of portable.
- 7) A mainframe computer is a data processing system employed mainly in large organizations for various applications, including bulk data processing, process control, industry and consumer statistics, enterprise resource planning, and financial transaction processing.
- 8) Unlike portable computers, most PDAs are pen-based, using a stylus rather than a keyboard for input.
- 9) The University of the North needs a computer to look after its accounts, its network, the records of all the students and staff, and to help with scientific research.
- 10) According to a 2015 study conducted by McGraw-Hill Education, 77 percent of students reported that using tablets and smartphones has helped improve their grades, and 62 percent said that tech helps them feel more prepared for class.

## **WRITING**

**16. Write the annotation to the article given. You should write 100–120 words.**

### **Tablet computers are a game-changer in professional sports\***

In the halls of the Tampa Bay Buccaneers practice facility, players can be seen carrying iPads everywhere they go.

They're not taking a break, it's part of their weekly football practice. The Bucs are one of two NFL teams, that have purchased iPads for their players and coaches to use instead of the standard playbook. Baseball and hockey leagues have also taken notice of the advantages of mobile technology. While there are still NFL restrictions on how computer tablets can be used, these devices are slowly starting to change the way professional teams operate, offering high-quality video and Internet connectivity almost anywhere.

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\* <http://edition.cnn.com/2011/11/12/tech/tablet-computers-and-sports/>

Just before this season, the Bucs moved the team's playbook, a huge three-ring binder, into a custom app on the tablet. It plays NFL films used to study upcoming opponents, says general manager Mark Dominik. "It was a smashing success for our players. They loved it," he said.

But don't expect to see the tablets on the sidelines of games, in locker rooms or in the coaches' booth. NFL rules prohibit the use of any electronic computers, tablets or recording devices within 90 minutes of kickoff.

"Polaroid-type cameras" are the only device allowed to be used during a game, according to NFL rules. The cameras capture high angle still images of the field, which are printed on paper near the players' benches on the field, giving the teams a different view of what their opponents are doing on the field.

The Bucs' linebacker coach, Joe Baker, admitted he was "a little skeptical" when the team started using iPads. His concerns were rooted in a past experience, when another team he worked for started using laptops. At the time, he said, it was a poor integration of technology and the team's needs. Today, he admits things have changed. "To have all that information at your fingertips accessible and convenient," said Baker. "It's a godsend." Baker and the other coaches said they believe the iPads have helped improved their players' study habits. Morris points out that the players' motivation was already there, the technology has just helped them capitalize on it.

# SELF-STUDY

## READING

### 1. Read the text and decide whether these sentences are true or false.

As I'll explain to you now, computers can be divided into 5 main types depending on their size and power. These are mainframes, desktop PCs, laptops, tablet PCs and Personal Digital Assistants (or PDAs). Mainframes are the largest and most powerful computers. The basic configuration of a mainframe consists of a central system which processes immense amounts of data very quickly. This central system provides information and computing facilities for hundreds of terminals connected together in a network. Mainframes are used for large scale computing purposes in banks, universities and big companies.

PCs, or personal computers, carry out the processing on a single microchip. They are usually classified by size and portability. A desktop PC is designed to be placed on your desk it is used as a home computer or as a workstation for group work. Typical examples are the IBM PC and the Apple Macintosh.

A laptop is a portable computer that has a flat LCD screen and uses batteries for mobile use. Small laptops are also called notebooks. The latest models can run as fast as similar desktop computers and have similar configurations. They are ideal for business executives who travel a lot.

A tablet PC is a type of notebook computer that has an LCD screen on which you write with a stylus or digital pen. Your handwriting is recognized and converted into editable text. You can also input text by using speech recognition or a small keyboard. You can fold and rotate the screen easily.

Finally, a PDA is a lightweight hand held computer. The letters stand for Personal Digital Assistant. The term refers to a wide variety of handheld devices including palmtops and pocket PCs. For input you type using a small keyboard or you use a stylus, a special pen to select items on the screen. PDAs can be used as mobile phones, personal organisers or media players. They also let you access you the Internet via wi-fi networks. And some include a GPS navigation system.

- 1) A mainframe computer is less powerful than a PC.
- 2) The most suitable computers for home use are desktop PCs.
- 3) Laptops are not as powerful as desktop PCs.
- 4) Using a stylus, you can write directly onto the screen of a tablet PC.
- 5) A Personal Digital Assistant is small enough to fit into the palm of your hand.

**2. Read the text and fill the gaps 1–6 with the most suitable missing sentences A–G. There is one extra option which you don't need to use.**

### **Inkjet technology**

A new use has been found for an old technology. Inkjet printers are being developed which can place tiny amounts of ink precisely in the right place. Using metal inks containing very small particles of copper or silver, this technology can be used to make printed circuits. (1) \_\_\_\_\_.

The technology has much wider applications. In future it may be used to print support structures which contain human cells. (2) \_\_\_\_\_. It will be possible to print pills, insect traps, and even wallpaper which contains its own lighting.

The inkjet portion of the drug-delivery patch precisely controls the flow of drugs through the microneedles. (3) \_\_\_\_\_. And just as color printers can control the flow of more than one color of ink, inkjet drug delivery systems can be made to store and deliver many different drugs at once.

There are many advantages to using inkjet-technology dosage control. For example, it's important for drugs to be delivered in precise amounts. The microprocessor-controlled inkjet system is not only able to deliver exact dosages; it can automatically control a complex dosage schedule of multiple drugs. There's a wide range of other useful tasks that the device could potentially perform as well. (4) \_\_\_\_\_.

While the inkjet drug delivery system is a breakthrough technology and has shown promising test results, it still has a long way to go before it can be used commercially. (5) \_\_\_\_\_. Another critical factor affecting the adoption of the device will be its cost. The electronic and microscale components of the inkjet system will likely be expensive to manufacture, although costs should go down with time.

(6) \_\_\_\_\_. The future is still unclear, but it looks like the answer might be yes for some applications.

- A) It can also be used to print electronic components, including semiconductors and even batteries.
- B) In a thermal inkjet printer, each nozzle has its own reservoir of ink and also contains a resistive heating element.
- C) For example, the microprocessor could be programmed to deliver drugs in response to a patient's vital signs, like blood pressure or body temperature.
- D) Early additive manufacturing equipment and materials were developed in the 1980s.



- E) These will be used to help the body grow new skin, bone, or even organ.
- F) So will inkjet technology replace hypodermic needles?
- G) Just like all medical devices, it must be proven safe and effective by a series of tests overseen by the Food and Drug Administration.

### **GRAMMAR AND VOCABULARY**

#### **3. Choose the correct option.**

- 1) \_\_\_\_\_ technologies have changed our lives and helped the economy grow.  
a) modem                      b) outdated                      c) obsolete
- 2) Nintendo's Wii video game console brings gaming to people \_\_\_\_\_ all ages.  
a) from                      b) in                      c) of
- 3) Monitors of airline pilots display \_\_\_\_\_ about fuel consumption and weather conditions.  
a) data                      b) news                      c) results
- 4) A bus is an electronic pathway that \_\_\_\_\_ signals between computer devices.  
a) is carrying                      b) carries                      c) carry
- 5) When a file \_\_\_\_\_ and saved, the designer prepares it for printing.  
a) composed                      b) is composed                      c) will be composed
- 6) The wheel generates electricity \_\_\_\_\_ it turns.  
a) as                      b) before                      c) unless
- 7) Wait for me please, I \_\_\_\_\_ the computer.  
a) turn off                      b) am turning off                      c) turning off
- 8) His son \_\_\_\_\_ violent video games.  
a) has never played                      b) is never playing                      c) had never played
- 9) He \_\_\_\_\_ the viruses in our computers twice a month.  
a) check                      b) is checking                      c) checks
- 10) Hard drive is a magnetic device \_\_\_\_\_ is used to store information.  
a) who                      b) what                      c) which

## ***TRANSLATION***

### **4. Translate the sentences from English into Russian.**

- 1) The computer programmes are better now, they have become more sophisticated and you can work much more efficiently.
- 2) An ionization detector operates when very small particles of smoke interrupt an electric current.
- 3) New smartphones combine a telephone with web access, video, a games console, an MP3 player, a personal digital assistant (PDA) and a GPS navigation system, all in one.
- 4) Finally, we can see the results (the output) on the screen or in printed form.
- 5) Mainframe computers were developed in the 1950s, have continued to evolve and are still in use today.
- 6) The computing power of a typical desktop computer today is greater than that of a mainframe system back in the 1980s.
- 7) The commercial use of IT encompasses both computer technology and telephony.
- 8) Rotundus is a spherical robot, invented at the University in Sweden, which can patrol a site or building to guard it.
- 9) Nike have developed a vest which holds ice packs in its lining, it is designed for athletes who compete in marathons.
- 10) Telesurgery was used in 2001 to allow a surgeon in New York to operate a patient in France.

## ***WRITING***

### **5. Write the abstract to the text given (100–120 words).**

#### **Goodbye to typewriters\***

India is well known for its legions of computer programmers, but the country also has another face as the last bastion of the typewriter. Manual typewriters stayed popular in India long after developed nations had entirely switched to the keyboard and mouse.

As recently as the 1990s, the Mumbai plant of a company named Godrej and Boyce was turning out 50,000 typewriters a year. They were popular in a nation where reliable electricity supplies – essential for computers – are still by no means guaranteed.

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\* Mark Gregory, BBC News

But even in India, typewriter sales have slumped in the last ten years. Gradually, every manufacturer stopped making them, leaving only Godrej's Mumbai plant – and that switched to making fridges two years ago. And now the firm says it only has 500 typewriters left in stock.

It's a far cry from the heyday of the 1950s, when India's then Prime Minister Jawaharlal Nehru held up the humble typewriter as a symbol of the nation's independence and industrialisation. The first commercial typewriters were produced in the United States in the 1860s. The typewriter was the dominant office technology for more than a century until the computer came along.

# INDIVIDUAL HOME TASK № 1

## Variant 1

### READING

#### 1. Read the text and decide whether these sentences are true or false.

As I'll explain to you now, computers can be divided into 5 main types depending on their size and power. These are mainframes, desktop PCs, laptops, tablet PCs and Personal Digital Assistants (or PDAs).

Mainframes are the largest and most powerful computers. The basic configuration of a mainframe consists of a central system which processes immense amounts of data very quickly. This central system provides information and computing facilities for hundreds of terminals connected together in a network. Mainframes are used for large scale computing purposes in banks, universities and big companies.

PCs, or personal computers, carry out the processing on a single microchip. They are usually classified by size and portability. A desktop PC is designed to be placed on your desk it is used as a home computer or as a workstation for group work. Typical examples are the IBM PC and the Apple Macintosh.

A laptop is a portable computer that has a flat LCD screen and uses batteries for mobile use. Small laptops are also called notebooks. The latest models can run as fast as similar desktop computers and have similar configurations. They are ideal for business executives who travel a lot.

A tablet PC is a type of notebook computer that has an LCD screen on which you write with a stylus or digital pen. Your handwriting is recognized and converted into editable text. You can also input text by using speech recognition or a small keyboard. You can fold and rotate the screen easily.

Finally, a PDA is a lightweight hand held computer. The letters stand for Personal Digital Assistant. The term refers to a wide variety of handheld devices including palmtops and pocket PCs. For input you type using a small keyboard or you use a stylus, a special pen to select items on the screen. PDAs can be used as mobile phones, personal organisers or media players.

They also let you access you the Internet via wi-fi networks. And some include a GPS navigation system.

- 1) A mainframe computer is less powerful than a PC.
- 2) The most suitable computers for home use are desktop PCs.
- 3) Laptops are not as powerful as desktop PCs.

- 4) Using a stylus, you can write directly onto the screen of a tablet PC.
- 5) A Personal Digital Assistant is small enough to fit into the palm of your hand.

**2. Read the text and fill the gaps 1–6 with the most suitable missing sentences A–G. There is one extra option which you don't need to use.**

By all accounts, nanotechnology is the science of making devices from single atoms and molecules – is going to have a huge impact on both business and our daily lives. Nano devices are measured in nanometres (one billionth of a metre). (1) \_\_\_\_\_.

- Nanocomputers: tiny microprocessors will contain nanotransistors, ranging from 60 to 5 nanometres in size.

- Nanomedicine: By 2020, nanobots will be injected into the body's bloodstream to treat diseases at the cellular level.

- Nanomaterials: New materials will be made from carbon atoms in the form of nanotubes, which are more flexible, resistant and durable than steel or aluminium. (2) \_\_\_\_\_.

Artificial Intelligence (AI) is the science of making intelligent machines and programs. In the 1940s and 50s, scientists from a variety of fields began to discuss the possibility of creating an artificial brain. (3) \_\_\_\_\_. At that time Alan Turing said: "A machine has artificial intelligence when there is no difference between the conversation generated by the machine and that of an intelligent person." A typical AI application is robotics. One example is ASIMO, Honda's intelligent humanoid robot. Another AI application is expert systems – programs containing everything that an 'expert' knows about a subject. (4) \_\_\_\_\_.

Imagine you are about to take a holiday in Europe. You walk out to the garage and talk to your car. Recognizing your voice, the car's doors unlock. On the way to the airport, you stop at an ATM. A camera mounted on the bank machine looks you in the eye. (5) \_\_\_\_\_.

At the immigration checkpoint, you swipe a card and place your hand on a small metal surface. The geometry of your hand matches the code on the card, and the gate opens. You're on your way. Does it sound futuristic? Well, the future is here. (6) \_\_\_\_\_. This identification can be based on physical characteristics such as fingerprints, facial features, voice, iris and retina patterns.

- A) Biometrics uses computer technology to identify people.
- B) They are mostly expected to be used in the following areas:
- C) In a few years, doctors will be using expert systems to diagnose illnesses.



## **TRANSLATION**

### **4. Translate the sentences from English into Russian.**

- 1) IT is the broad subject concerned with all aspects of managing and processing information, especially within a large organization or company.
- 2) Computers today operate faster and they have much larger memories.
- 3) A computer is an electronic machine which can accept data in a certain form, process the data, and give the results of the processing in a specified format as information.
- 4) Mobiles let you make voice calls, send texts, email people and download logos, ringtones or games.
- 5) Some touchscreen PDAs, including Windows Mobile devices, had a detachable stylus to facilitate making selections.
- 6) Multimedia combines text with sound, video, animation, and graphics, which greatly enhances the interaction between user and machine and can make information more interesting and appealing to people.
- 7) An ionization detector operates when very small particles of smoke interrupt an electric current.
- 8) You mustn't smile on your passport photograph as showing your teeth or open mouth can affect face-recognition devices.
- 9) Nike have developed a vest which holds ice packs in its lining, it is designed for athletes who compete in marathons.
- 10) Telemedicine is the application of information technology to medical care that provides medical support at a distance to people who have no access to a doctor.

## **WRITING**

### **5. Write the abstract to the text given (100–120 words).**

#### **Clicks and bricks: How building is going digital\***

Architects and construction companies have been able to “look around” computerised 3D models of their buildings for some time. But now they can actually feel what it's like to be right inside by wearing virtual reality (VR) headsets and getting a 360-degree view. What's more, their colleagues also wearing headsets can inhabit the same life-like model and suggest and make changes to the design in real time. And these colleagues could be on the other side of the world. This is the exciting new world of virtual buildings – a sig-

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\* <http://www.bbc.com/news/business-37541598>

nificant development for an industry traditionally more interested in bricks than clicks. Even Crossrail chief executive Andrew Wolstenholme admits: “Historically, we have been very slow to pursue innovation. Before, there was no real need for suppliers to change. “But now, as we have to find more opportunities overseas, we are in a much better place to reap the rewards.”

Building information modelling (BIM) – developing a 3D digital prototype of a project – is moving up a gear. San Francisco-based Vizerra, has introduced “gamification” and VR capability to its BIM product, Revizto. “Revizto uses 3D gaming technology and cloud solutions to bring together various building design environments and workflows into a single, navigable view,” says chief executive Arman Gukasyan. The software’s interactive 3D environments allow users to navigate their sites like in a video game, highlighting structural issues as they explore. Revizto now supports the HTC Vive and Oculus VR headsets.

The project team can collaborate in real time with the help of the built-in Revizto Issue tracker, and assign tasks to each other. Vizerra says this kind of approach helps save its clients up to 40 % of billable time, because errors – inadequate lighting or awkward placing of support columns, for example – can be spotted before construction begins. “In any construction project 30 % or more of total budget is spent on correcting the errors not visible in the design stage,” says Mr Gukasyan. “It is crazy how much money is wasted because of the old standards, where everything is done on 2D paper drawings.

“We are positioning ourselves as disruptive technology which demonstrates how gaming technology can be used in most serious industries and transform the way people co-ordinate and collaborate.” Revizto is now used by more than 60,000 clients in 150 countries, says Vizerra, including global architectural and construction practices, such as Foster & Partners and Perkins & Will.

Other leaders in this rapidly growing market include AutoCAD, Revit and Vectorworks Architect, with Research & Markets forecasting that software sales will reach nearly \$12 bn (£10 bn) by 2022.



## Variant 2

### READING

#### 1. Read the text and decide whether these sentences are true or false.

As I'll explain to you now, computers can be divided into 5 main types depending on their size and power. These are mainframes, desktop PCs, laptops, tablet PCs and Personal Digital Assistants (or PDAs).

Mainframes are the largest and most powerful computers. The basic configuration of a mainframe consists of a central system which processes immense amounts of data very quickly. This central system provides information and computing facilities for hundreds of terminals connected together in a network. Mainframes are used for large scale computing purposes in banks, universities and big companies.

PCs, or personal computers, carry out the processing on a single microchip. They are usually classified by size and portability. A desktop PC is designed to be placed on your desk it is used as a home computer or as a workstation for group work. Typical examples are the IBM PC and the Apple Macintosh.

A laptop is a portable computer that has a flat LCD screen and uses batteries for mobile use. Small laptops are also called notebooks. The latest models can run as fast as similar desktop computers and have similar configurations. They are ideal for business executives who travel a lot.

A tablet PC is a type of notebook computer that has an LCD screen on which you write with a stylus or digital pen. Your handwriting is recognized and converted into editable text. You can also input text by using speech recognition or a small keyboard. You can fold and rotate the screen easily.

Finally, a PDA is a lightweight hand held computer. The letters stand for Personal Digital Assistant. The term refers to a wide variety of handheld devices including palmtops and pocket PCs. For input you type using a small keyboard or you use a stylus, a special pen to select items on the screen. PDAs can be used as mobile phones, personal organisers or media players. They also let you access you the Internet via wi-fi networks. And some include a GPS navigation system.

- 1) A mainframe is used by large organizations that need to process enormous amounts of data.
- 2) A laptop is not portable.
- 3) Using a stylus, you can write directly onto the screen of a tablet PC.

- 4) A Personal Digital Assistant is small enough to fit into the palm of your hand.
- 5) A PDA does not allow you to surf the Web.

**2. Read the text and fill the gaps 1–6 with the most suitable missing sentences A–G. There is one extra option which you don’t need to use.**

Ubiquitous computing is a new approach in which computer functions are integrated into everyday life, often in an invisible way.

(1) \_\_\_\_\_. Ubiquitous devices can be anything from smartphones to tiny sensors in homes, offices and cars, connected to networks, which allow information to be accessed anytime and anywhere. (2) \_\_\_\_\_.

In the ideal smart home, appliances and electronic devices work in sync to keep the house secure. (3) \_\_\_\_\_. A smart home system would go further, turning on the lights in the home and then sending a text message to the owner’s phone. Motorola Homesight even sends images captured by wireless cameras to phones and PCs. Smart homes can remember your living patterns.

(4) \_\_\_\_\_. All home devices will be interconnected over a home area network where phones, cable services, home cinemas, touch screens, smart mirrors and even the refrigerator will cooperate to make our lives more comfortable.

Artificial Intelligence (AI) is the science of making intelligent machines and programs. In the 1940s and 50s, scientists from a variety of fields began to discuss the possibility of creating an artificial brain. (5) \_\_\_\_\_. At that time Alan Turing said: “A machine has artificial intelligence when there is no difference between the conversation generated by the machine and that of an intelligent person”. A typical AI application is robotics. One example is ASIMO, Honda’s intelligent humanoid robot. Another AI application is expert systems – programs containing everything that an “expert” knows about a subject. (6) \_\_\_\_\_.

- A) For example, when a regular alarm system senses that someone is breaking into the house, it usually alerts the alarm company and then the police.
- B) It is also known as pervasive computing.
- C) So if you like to listen to some classical music when you come home from work, your house can do that for you automatically.
- D) In the future people will interact naturally with hundreds of these smart devices (objects containing a microchip and memory) every day.
- E) The field of this research was founded as an academic discipline in 1956.
- F) In a few years, doctors will be using expert systems to diagnose illnesses.
- G) You will be able to watch a DVD using your arm as microchips will be stuck to your skin.

## **GRAMMAR AND VOCABULARY**

### **3. Choose the correct option.**

- 1) You'll find full and \_\_\_\_\_ information on ski schools on our site.  
a) outdated                      b) up-to-date                      c) ancient
- 2) Modern games and simulations offer a great deal \_\_\_\_\_ adventure and challenge.  
a) of                                      b) in                                      c) from
- 3) In banks, computers \_\_\_\_\_ information about the money held by each customer.  
a) protect                              b) store                                      c) deposit
- 4) Here's the DVD that you \_\_\_\_\_ me yesterday.  
a) lent                                      b) lends                                      c) has lent
- 5) WiMAX is a type of wireless network which \_\_\_\_\_ for connecting Wi-Fi.  
a) used                                      b) is used                                      c) has used
- 6) The wheel starts to move \_\_\_\_\_ you turn the handle.  
a) when                                      b) before                                      c) unless
- 7) Alex \_\_\_\_\_ a new application on my computer, when I came in.  
a) has just installed      b) had just installed                      c) just installs
- 8) I \_\_\_\_\_ different types of equipment since 2010.  
a) occupied                              b) have occupied                              c) had occupied
- 9) This system \_\_\_\_\_ in their company in 2018.  
a) will be implemented      b) would be implemented                      c) implemented
- 10) Ports are sockets into \_\_\_\_\_ an external device may be connected.  
a) which                                      b) what                                      c) them

## **TRANSLATION**

### **4. Translate the sentences from English into Russian.**

- 1) Telecommunication technologies, including Internet and business phones are also part of an organization's IT infrastructure.
- 2) Because computers contain more electronics, the cases have become bigger but the flat-screen monitors are less heavy and fit into a smaller space on your desk.
- 3) Computer servers run business applications and interact with client users and other servers across one or more business networks.

- 4) In a large organization, individual employees can sit at their desk using a personal computer, but they can send requests to the mainframe computer for processing large amounts of data.
- 5) Many people today telecommute – that is, use their computers to stay in touch with the office while they are working at home.
- 6) Nanotechnology is the science of making devices from single atoms and molecules.
- 7) New smartphones combine a telephone with web access, video, a games console, an MP3 player, a personal digital assistant (PDA) and a GPS navigation system, all in one.
- 8) Rotundus is a spherical robot, invented at the University in Sweden, which can patrol a site or building to guard it.
- 9) Speedo have designed a swimsuit which they claim is the world's fastest.
- 10) Telesurgery was used in 2001 to allow a surgeon in New York to operate a patient in France.

## **WRITING**

### **5. Write the abstract to the text given.**

#### **Microsoft code leaked on web\***

The software company Microsoft has admitted some vital information about its computer systems has been leaked onto the internet. It says the source code for the Windows operating system is being illegally distributed. This report Duncan Bartlett: Microsoft tries to keep the code for its Windows operating system a closely guarded secret. It's the equivalent of computer DNA and the firm fears if it falls into the wrong hands it could be used to infiltrate millions of computers worldwide. More than ninety percent of the world's PCs run Windows.

The code which has appeared on the web appears to be the basis of Windows 2000 and Windows NT. But massive programs such as Windows are complicated and difficult for all but the most sophisticated hackers to understand.

The other threat to Microsoft is that rival software firms could copy parts of the code and use it in similar programmes. Microsoft says it has contacted the law enforcement authorities to investigate how the data leaked out.

Earlier this week the company said that a critical flaw in the latest version of Windows could leave PCs vulnerable to hackers. It has urged home users and firms to download a free software repair patch from its website to fix the problem.

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\* [http://www.bbc.co.uk/worldservice/learningenglish/newsenglish/witn/040213\\_witn.shtml](http://www.bbc.co.uk/worldservice/learningenglish/newsenglish/witn/040213_witn.shtml)

## Variant 3

### *READING*

#### **1. Read the text below and answer the following questions.**

1. How does the author justify his claim that we are ‘in the midst of convergence’?
2. What will be the difference between computers and humans after 2015?
3. What does he mean by a ‘positive feedback loop’ in computer development?
4. Why will knowledge of a major language be the only IT skill needed?
5. Which of the author’s predictions do you accept?

### **THE FUTURE OF INFORMATION TECHNOLOGY**

We are in the midst of convergence. At the hardware layer, computers, phones and consumer electronics are converging. At the applications layer, we see convergence of information, entertainment, communications, shopping, commerce, and education.

Computers came from nowhere 50 years ago and are rapidly catching up in capability with the human brain. We expected human: machine equivalence by about 2015. And after this, computers continued to get smarter, there was a noticeable positive feedback loop in technology development, with each generation of improved computers giving us more assistance in the design and development of the next. Ultimately, they will design their offspring with little or no human involvement.

This technology development will push the knowledge forwards. It will be almost as though extraterrestrials had landed in 2020 and given us all their advanced technology overnight.

But we will never get far unless we can solve the interface problem. In the near future we may have electronic pets, with video camera eyes and microphone ears, linked by radio to the family computer. With voice and language recognition we will have easy access to all that the Internet can provide. We can tell the pet what we want and it will sort it out for us. It will be impossible to be technophobic about such an interface, and the only IT skill needed will be to speak any major language.

**2. Read the text and fill the gaps 1–6 with the most suitable missing sentences A–G. There is one extra option which you don't need to use.**

Barcodes in the packaging of groceries will soon be replaced with radio-frequency tags that can be read at a distance and with greater reliability. (1) \_\_\_\_\_. Now, imagine that a fridge could read these tags and keep track of the items placed there. If an item is about to exceed its 'use by' date, the fridge tells you, and you can either use it or throw it out. (2) \_\_\_\_\_. No problem, ask the fridge to suggest some menus based on the ingredients it knows you have in stock. Or tell the fridge the menu you require and it will provide you with a shopping list of the items you don't have or order the items via email. This is the Screenfridge from Electrolux.

(3) \_\_\_\_\_. On the door is a touch-sensitive panel or screen that provides a means of communicating with the users.

For many households, life revolves around the kitchen. (4) \_\_\_\_\_. The same screen is a messaging centre. Since the fridge is equipped with a microphone, speaker and video-camera, you're not limited to textual information. (5) \_\_\_\_\_.

Many people have a TV in the kitchen, but if you already have a screen on the fridge, why clutter up the work surface with a TV? Call the Screenfridge's TV mode and watch your favorite programme on the fridge. The Screenfridge can be interfaced to a surveillance camera to check out visitors or to keep an eye on the children. (6) \_\_\_\_\_. For example, it has a diary, address pad and a notepad.

- A) Fancy something different for dinner?
- B) This is the assumption Electrolux made in designing the Screenfridge.
- C) But there's also growing focus on smart fridges.
- D) As well as indicating what the product is, the data in the tags will include additional information such as the 'best before' date and even nutritional data.
- E) Finally, the Screenfridge can perform some of the household management tasks normally associated with a PC.
- F) But why 'Screenfridge'?
- G) The fridge is connected to the Internet, so it can be used to send and receive email or you could surf the Web to find a new recipe.

## **GRAMMAR AND VOCABULARY**

### **3. Choose the correct option.**

- 1) \_\_\_\_\_ technologies have changed our lives and helped the economy grow.  
a) modern                      b) outdated                      c) obsolete
- 2) Cameras inside will snap photos and send them to your phone \_\_\_\_\_ request.  
a) from                      b) of                      c) upon
- 3) LG is going to announce a price or \_\_\_\_\_ date of the new smartphone.  
a) release                      b) exit                      c) expiry
- 4) Storage is any kind of technology that \_\_\_\_\_ information as data.  
a) is holding                      b) holds                      c) hold
- 5) Mainframe systems \_\_\_\_\_ by large institutions, such as government agencies and large corporations.  
a) are used                      b) will be use                      c) used
- 6) The wheel generates electricity \_\_\_\_\_ it turns.  
a) before                      b) as                      c) unless
- 7) Brian \_\_\_\_\_ his computer since 2010, it is high time to.  
a) had not upgraded    b) did not upgrade                      c) has not upgraded
- 8) George \_\_\_\_\_ fond of coding when he was a teenager.  
a) has been                      b) was                      c) is
- 9) John \_\_\_\_\_ the viruses in our computers the day after tomorrow.  
a) will check                      b) would check                      c) checks
- 10) Hard drive is a magnetic device \_\_\_\_\_ is used to store information.  
a) who                      b) which                      c) what

## **TRANSLATION**

### **4. Translate the sentences from English into Russian.**

- 1) Since we live in the “information age,” information technology has become a part of our everyday lives. That means the term “IT,” already highly overused, is here to stay.
- 2) Minicomputers are mainly used as small or midrange servers operating business and scientific applications. However, the use of the term minicomputer has diminished and has merged with servers.

- 3) The computer programmes are better now, they have become more sophisticated and you can work much more efficiently.
- 4) Teachers use projectors and interactive whiteboards to give presentations and teach sciences, history or language courses.
- 5) Airline pilots use computers to help them control the plane. For example, monitors display data about fuel consumption and weather conditions.
- 6) Storage devices (hard drives, DVD drives or flash drives) provide a permanent storage of both data and programs.
- 7) Distance learning and video conferencing are concepts made possible with the use of an electronic classroom or boardroom accessible to people in remote locations.
- 8) The world's first hydrogen-powered motorbike can reach 80 kph in 12 seconds.
- 9) Adidas produce knee-length socks for runners which are designed to reduce leg fatigue.
- 10) Using a video link, nurses can call a specialist to examine difficult cases remotely.

## **WRITING**

### **5. Write the abstract to the text given (80–100 words).**

#### **Lincolnshire operations cancelled after network attack\***

Hundreds of planned operations and outpatient appointments have been cancelled across Lincolnshire after an NHS computer network was attacked.

Northern Lincolnshire and Goole NHS Foundation Trust (NLAG) said systems were infected with a virus on Sunday, with it treated as a “major incident”. The trust, which runs hospitals in Goole, Grimsby and Scunthorpe, said the measures would remain into Tuesday. United Lincolnshire Hospitals NHS Trust (ULHT) also had to cancel operations. Dr Karen Dunderdale, NLAG deputy chief executive, said: “A virus infected our electronic systems yesterday, and we have taken the decision, following expert advice, to shut down the majority of our systems so we can isolate and destroy it.

“Our main priority is patient safety. All adult patients should presume their appointment/procedure has been cancelled unless they are contacted. Those who turn up will be turned away.”

The trust added that inpatients would be cared for and discharged as soon as they were medically fit, with major trauma cases and high risk women in labour being diverted to neighbouring hospitals. It said: “We are re-

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\* <http://www.bbc.com/news/uk-england-humber-37822084>



viewing the situation on an hourly basis. Our clinicians will continue to see, treat and operate on those patients who would be at significant clinical risk should their treatment be delayed.”

ULHT shares four of its clinical IT systems and said it had to cancel operations “unless there is a clinical reason not to”. Mark Brassington, chief operating officer at ULHT, said: “We have a plan in place to minimise risks to patients which includes reverting to manual systems. “The biggest impact on the trust is in processing of blood tests, access to historical test results and availability of blood for blood transfusions. “Our number one priority is keeping patients safe so we are cancelling all planned operations tomorrow unless there is a clinical reason not to.”

## Variant 4

### **READING**

#### **1. Read the text and decide whether these sentences are true or false.**

Road traffic navigation systems will be much more advanced. We will be able to tell our computer what time we want to arrive and it will be able to negotiate slots with the traffic management systems for the appropriate roads to ensure we arrive there on time. With every car having automatic systems that communicate with those in other cars, it will be possible to more than double the capacity of the roads.

Electronic systems can automatically lock the brakes and accelerators of a whole chain of cars together to make for a much smoother and faster journey. All cars would brake together, with only microseconds delay instead of hundreds of milliseconds. Drive by wire systems could make it almost impossible to cut dangerously in front of another driver. It might be impossible to change lane unless there is a gap to move into.

As well as telling us which way to go, or taking us automatically, we will be able to get appropriate news and travel information as we travel through an area. Integration of the transport system into the net will make it possible to say 'find the nearest cinema showing such and such a film'. Communication systems built into the car will obviously keep us in touch as today, but we might also be able to message to cars around us.

Many sensors will be in the future car, for example in tyres and exhaust systems. Our cars might even respond to our emotions, picking up when we are stressed and helping to calm us down. It might become the norm to have sophisticated identification systems built into cars which prevent unauthorized people from driving them, or take them direct to the nearest police station. Retina scans, voice prints, finger prints or several other biometrics could be used.

- 1) Every car having automatic systems will be able to communicate with those in other cars.
- 2) Electronic system can automatically start the car and lock the brakes and accelerators.
- 3) Changing lanes will become impossible without electronic system.
- 4) Integration of the transport system into the net will make it possible to find points of interest nearby.
- 5) Electronic systems might include sophisticated identification systems to prevent unauthorized people from driving the car.





- 7) Artificial intelligence (AI) is an area of computer science that emphasizes the creation of intelligent machines that work and react like humans. Some of the activities include speech recognition, learning, planning and problem solving.
- 8) In 2001, before Apple and Samsung started bombing the world with their superb smartphone devices of the last five or six years there was the iPod, a small gadget that changed how we viewed and played music.
- 9) Nike have developed a vest which holds ice packs in its lining, it is designed for athletes who compete in marathons.
- 10) It's difficult to imagine that we are on the threshold of being able to program our own DNA, but that is the next step in human evolution.

## **WRITING**

### **5. Write the abstract to the text given (80–100 words).**

#### **Computer company awarded compensation\***

The judgment is being seen as a severe blow to the reputation of the world's largest provider of software for business computer systems. SAP has always accepted that one of its subsidiary companies, TomorrowNow, which is now defunct, downloaded copyrighted Oracle software over the internet and used it in its own systems to lure customers away from Oracle.

SAP argued the financial consequences were small and it should pay no more than \$40 million in damages. But the jury appears to have accepted Oracle's argument that the scale of the damages should reflect what it would have cost SAP to buy a license to use the stolen software at the outset, a far larger amount.

The penalty is certainly one of the biggest ever awarded in a corporate copyright case. Oracle's lawyers say it is the largest. Top executives from both firms gave evidence in the three-week trial, which has captivated the attention of California's Silicon Valley, a global centre for high technology industry.

SAP, Oracle and another company, Hewlett Packard, are involved in a bitter three-way tussle for control of the multi-billion dollar market for corporate computer systems. SAP's longstanding dominance is under threat by the other two. SAP says it's likely to appeal against the award. If nothing else, the case has brought home the potential financial risks firms face if they take others' trade secrets.

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\*[http://www.bbc.co.uk/worldservice/learningenglish/language/wordsinthenews/2010/11/101124\\_witn\\_softw\\_are\\_fine\\_page.shtml](http://www.bbc.co.uk/worldservice/learningenglish/language/wordsinthenews/2010/11/101124_witn_softw_are_fine_page.shtml)

# UNIT 3

## COMPUTER ESSENTIALS

### LEAD-IN

#### 1. Answer the following questions.

- a) Have you got a computer at home or work? What kind is it?
- b) How often do you use it? What do you use it for?
- c) What are the main components and features of your computer system?

#### 2. Label the elements of the computer system.

printer	keyboard	monitor
webcam	CD/DVD-ROM	Wi-Fi router
CD/DVD disc	mouse	USB front panel



#### 3. Read these advertising slogans and say which computer element each pair refers to.

1	<ul style="list-style-type: none"> <li>• Point and click here for power</li> <li>• Obeys every impulse as if it were an extension of your hand</li> </ul>
2	<ul style="list-style-type: none"> <li>• Displays your ideas with perfect brilliance</li> <li>• See the difference – sharp images and a fantastic range of colours</li> </ul>
3	<ul style="list-style-type: none"> <li>• It's quiet and fast</li> <li>• ... it's easy to back up your data before it's too late</li> </ul>
4	<ul style="list-style-type: none"> <li>• Power and speed on the inside</li> <li>• Let your computer's brain do the work</li> </ul>
5	<ul style="list-style-type: none"> <li>• a big impact on the production of text and graphics</li> <li>• Just what you need: a laser powerhouse</li> </ul>

## **READING**

### **Text 1**

#### **4. Read the text and consider the given statements true or false.**

- a) Hardware is a number of instructions that tells the computer what to do.
- b) Peripherals are known as a basic hardware section.
- c) The main memory is responsible for executing program instructions and coordinating the activities of the other units.
- d) Storage devices provide a temporary storage of both data and programs.
- e) The front panel of the computer has special ports to allow communication between the computer and other devices.

#### **What is a computer?**

A computer is an electronic machine which can accept data in a certain form, process the data, and give the results of the processing in a specified format as information.

First, data is fed into the computer's memory. Then, when the program is run, the computer performs a set of instructions and processes the data. Finally, we can see the results (the output) on the screen or in printed form.

A computer system consists of two parts: hardware and software. Hardware is any electronic or mechanical part you can see or touch. Software is a set of instructions, called a program, which tells the computer what to do. There are three basic hardware sections: the central processing unit (CPU), main memory and peripherals.

Perhaps the most influential component is the central processing unit. Its function is to execute program instructions and coordinate the activities of all the other units. In a way, it is the 'brain' of the computer.

The main memory (a collection of RAM chips) holds the instructions and data which are being processed by the CPU. Peripherals are the physical units attached to the computer. They include storage devices and input/output devices.

Storage devices (hard drives, DVD drives or flash drives) provide a permanent storage of both data and programs. Disk drives are used to read and write data on disks. Input devices enable data to go into the computer's memory. The most common input devices are the mouse designed for pointing and clicking around a graphical user interface and the keyboard that is set up for typing. Output devices enable us to extract the finished product from the system.

For example, the computer shows the output on the monitor, displaying information through a visual interface, or prints the results onto paper by means of a printer.

On the rear panel of the computer there are several ports into which we can plug a wide range of peripherals – a modem, a digital camera, a scanner, etc. They allow communication between the computer and the devices. Modern desktop PCs have USB ports and memory card readers on the front panel.

**5. Match these words from the text (1–9) with the correct meanings (a–i).**

1) software	a) the brain of the computer
2) peripherals	b) physical parts that make up a computer system
3) main memory	c) programs which can be used on a particular computer system
4) hard drive (also known as hard disk)	d) the information which is presented to the computer
5) input	e) section that holds programs and data while they are executed or processed
6) ports	f) magnetic device used to store information
7) output	g) results produced by a computer
8) hardware	h) input devices attached to the CPU
9) central processing unit (CPU)	i) sockets into which an external device may be connected

**6. Read the text again and match each item in Column A with its function in Column B. Then describe its function in two ways.**

*Example: ROM is used to hold instructions, which are needed to start up a computer. ROM is used for holding instructions, which are needed to start up a computer.*

Column A

Column B

**Item**

**Function**

processor

controls the cursor

mouse

controls all the operations in a computer

monitor

inputs data through keys like a typewriter

keyboard

holds instructions which are needed to start up the computer

ROM

displays the output from a computer on a screen



## Text 2

### 7. Study the text below to find this information:

- 1) What is the memory size of this PC?
- 2) Which input devices are supplied?
- 3) What size is the monitor?
- 4) How fast is the processor?
- 5) What is the capacity of the hard drive?
- 6) Which operating system does it use?
- 7) What multimedia features does the computer have?

### HOW TO READ A COMPUTER AD

<i>Intel Core i7-5820K 3.5 GHz Processor</i>	The main processing chip that operates at a clock speed of 3.5 thousand million cycles per second.
<i>Mini Tower Chassis</i>	A small size of tall and narrow style of case containing the computer system.
<i>256 MB Rambus RDRAM</i>	256 megabytes of Rambus dynamic type of main memory chips that constitute the computer RAM.
<i>60 GB Hard Drive</i>	A hard drive internal storage device with a capacity of approx. 60 thousand million bytes.
<i>Embedded Intel 3D Direct AGP video with 64 MB SDRAM</i>	A video controller for controlling the monitor screen that is built on to the computer motherboard. It can process 3D images using the AGP type of video bus interface. It also contains approx. 64 million bytes of synchronous dynamic random access memory that is used as video memory.
<i>64-voice wavetable sound</i>	A soundcard that has 64 voices and generates sounds using the wavetable system.
<i>48 X CD-ROM Drive</i>	A CD-ROM storage device that operates at 48 times the speed of the original CD-ROM devices.
<i>19" (17.9" VIS) Colour SVGA monitor</i>	A colour monitor for displaying output on a screen at resolutions determined by the SVGA standard. The diagonal measurement of the whole screen is 19 inches but the diagonal measurement of the actual viewable area of the screen is only 17.9 inches.
<i>Microsoft Windows XP 10</i>	The operating system that is used to control the system.
<i>Microsoft Intellimouse</i>	
<i>105-key keyboard</i>	

### 8. Translate the technical specifications of the computer described in Ex. 7 into Russian.

## VOCABULARY

### 9. Match the pictures of input devices with their names.

*joystick*  
*touchscreen*

*trackball*  
*lightpen*

*barcode reader*  
*graphics tablet*

*scanner*  
*microphone*



**Each text describes one of these devices: trackball, joystick, lightpen, and scanner. Identify the device each text describes. Give a similar description to other devices from Ex. 9.**

- A) A \_\_\_\_\_ is another input device you can connect to a computer system. The \_\_\_\_\_ is able to move in eight directions. \_\_\_\_\_s are mostly used in computer games to control the way a picture on the screen moves. Sometimes two \_\_\_\_\_s are connected to a computer so two people can play the game at the same time.
- B) A \_\_\_\_\_ works in exactly the same way as a mouse, except that the ball is on top. The user rolls the ball around with his hand to operate it. If you use a \_\_\_\_\_, you don't need any extra space on your desk to move it around (like you do with a mouse). \_\_\_\_\_s are often used on small portable computers and on some video game machines.
- C) A \_\_\_\_\_ can be used to draw pictures directly on to a computer screen or to read the pattern on a barcode. A \_\_\_\_\_ that can read barcodes detects the difference between the light reflected from a black barcode line and its lighter background.
- D) Using a \_\_\_\_\_, you can input printed drawings, photographs, or text directly into a computer. A \_\_\_\_\_ works like a photocopier – a light is shone on the material and the \_\_\_\_\_ detects the reflected light. You can use a \_\_\_\_\_ with optical character recognition (OCR) software to input the scanned text into a word processing package.

**10. a) Match each device (1–7) with its use (a–g). Describe the use of each device in a sentence using the structures as in the example given.**

*Example: Mouse is used for selecting from a menu. You can use a mouse to select from a menu.*

- |                   |                                       |
|-------------------|---------------------------------------|
| 1) joystick       | a) draw pictures on a computer screen |
| 2) lightpen       | b) copy documents                     |
| 3) scanner        | c) input sound                        |
| 4) digital camera | d) input text                         |
| 5) mouse          | e) select from a menu                 |
| 6) keyboard       | f) move the cursor rapidly            |
| 7) microphone     | g) produce photos without film        |

**b) Decide which input device is best for:**

- 1) controlling fast-moving objects in a game
- 2) reading the price of things in a shop
- 3) making copies of a page of text and graphics
- 4) storing sounds on a computer
- 5) producing pictures of people and places for storing in a computer
- 6) controlling a computer using speech
- 7) typing text into a computer

**11. a) Match the verbs in column A with an appropriate noun from column B.**

- | A                 | B              |
|-------------------|----------------|
| 1) click on       | a menu         |
| 2) connect        | an icon        |
| 3) calculate      | a page         |
| 4) download       | devices        |
| 5) display        | pictures       |
| 6) create         | the Web        |
| 7) scroll up/down | costs          |
| 8) surf           | a new document |
| 9) select from    | information    |
| 10) enter         | information    |

**b) Use the phrases from Ex. 11a to fill the gaps in the sentences.**

- 1) Flat screens around the airport display \_\_\_\_\_ on all arrivals and departures.
- 2) Click on the \_\_\_\_\_ for PowerPoint to prepare a presentation.

- 3) You can download \_\_\_\_\_ from your camera.
- 4) Spreadsheets are used to calculate \_\_\_\_\_.
- 5) Scroll down the \_\_\_\_\_ until you find the information you need.
- 6) I normally spend at least one hour a day surfing \_\_\_\_\_.
- 7) She created \_\_\_\_\_ to keep track of software updates.
- 8) You can select from the \_\_\_\_\_ to choose which application you need.
- 9) You can enter the necessary \_\_\_\_\_, choose the pages you want to share, and start the session.
- 10) This is a fairly common situation for many USB devices, especially when users connect their \_\_\_\_\_, without following instructions.

### ***SPEAKING***

**12. Complete the table describing the features of the personal computer/notebook/netbook/etc. that you would most like to have.**

<i>Feature</i>	
Processor type	
Processor speed	
Bus speed	
Memory (RAM)	
Memory type	
Hard disk capacity	
Hard disc type	
Monitor size	
Monitor resolution	
DVD-Rom drive speed	

### ***TRANSLATION***

**13. Translate the following sentences from English into Russian.**

- 1) In the past, traditional software companies produced programs that it placed on discs and sold to consumers who then installed the programs on their own machines. Software companies today operate on many different business models and provide a wide array of products and services, such as software license sales, maintenance services, subscription fees, and other support services.
- 2) Computer data storage, often called storage or memory, is a technology consisting of computer components and recording media used to retain digital data. It is a core function and fundamental component of computers.

- 3) Even if the hardware is not new, the operating system will usually be installed on a freshly formatted hard drive, which has the benefit of removing old or possibly corrupt software.
- 4) The mouse port and the keyboard port look exactly the same but they have labels to avoid confusion.
- 5) The mouse contains a rubber-coated ball that rests on the surface of your working area or a mousepad.
- 6) The keys on a computer keyboard can be arranged in many different ways. The most common way on a desktop PC is called the extended keyboard.
- 7) Make sure your monitor is flicker-free, and that you can read everything easily.
- 8) Audio input devices allow a user to send audio signals to a computer for processing, recording, or carrying out commands.
- 9) Many engineers believe that the use of a router provides superior protection against hacking because individual computer IP addresses are not directly exposed to the Internet.
- 10) Many modern devices, such as digital watches, smartphones and tablet computers, have interfaces that allow them to be used as a peripheral by desktop computers, although they are not host-dependent in the same way as other peripheral devices.

## **WRITING**

### **14. Write an abstract.**

#### **THE FUTURE OF COMPUTING\***

Mar 12<sup>th</sup> 2016

In 1971 the fastest car in the world was the Ferrari Daytona, capable of 280 kph (174 mph). The world's tallest buildings were New York's twin towers, at 415 metres (1,362 feet). In November that year Intel launched the first commercial microprocessor chip, the 4004, containing 2,300 tiny transistors, each the size of a red blood cell.

Since then chips have improved in line with the prediction of Gordon Moore, Intel's co-founder. According to his rule of thumb, known as Moore's law, processing power doubles roughly every two years as smaller transistors are packed ever more tightly onto silicon wafers, boosting performance and reducing costs. A modern Intel Skylake processor contains around 1.75 bil-

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\* <http://www.economist.com/news/leaders/21694528-era-predictable-improvement-computer-hardware-ending-what-comes-next-future>

lion transistors – half a million of them would fit on a single transistor from the 4004 – and collectively they deliver about 400,000 times as much computing muscle. This exponential progress is difficult to relate to the physical world. If cars and skyscrapers had improved at such rates since 1971, the fastest car would now be capable of a tenth of the speed of light; the tallest building would reach half way to the Moon.

The impact of Moore’s law is visible all around us. Today 3 billion people carry smartphones in their pockets: each one is more powerful than a room-sized supercomputer from the 1980s. Countless industries have been upended by digital disruption. Abundant computing power has even slowed nuclear tests, because atomic weapons are more easily tested using simulated explosions rather than real ones. Moore’s law has become a cultural trope: people inside and outside Silicon Valley expect technology to get better every year.

But now, after five decades, the end of Moore’s law is in sight. Making transistors smaller no longer guarantees that they will be cheaper or faster. This does not mean progress in computing will suddenly stall, but the nature of that progress is changing. Chips will still get better, but at a slower pace (number-crunching power is now doubling only every 2.5 years, says Intel). And the future of computing will be defined by improvements in three other areas, beyond raw hardware performance.

The first is software. This week AlphaGo, a program which plays the ancient game of Go, beat Lee Sedol, one of the best human players, in the first two of five games scheduled in Seoul. Go is of particular interest to computer scientists because of its complexity: there are more possible board positions than there are particles in the universe. AlphaGo relies on “deep learning” technology, modelled partly on the way the human brain works. Its success this week shows that huge performance gains can be achieved through new algorithms. Indeed, slowing progress in hardware will provide stronger incentives to develop cleverer software.

The second area of progress is in the “cloud”, the networks of data centres that deliver services over the internet. When computers were stand-alone devices, whether mainframes or desktop PCs, their performance depended above all on the speed of their processor chips. Today computers become more powerful without changes to their hardware. They can draw upon the vast (and flexible) number-crunching resources of the cloud when doing things like searching through e-mails or calculating the best route for a road trip. And interconnectedness adds to their capabilities: smartphone features such as satellite positioning, motion sensors and wireless-payment support now matter as much as processor speed.

The third area of improvement lies in new computing architectures – specialised chips optimised for particular jobs.

For more than 50 years, the seemingly inexorable shrinking of transistors made computers steadily cheaper and more capable. As Moore's law fades, progress will be less metronomic. But computers and other devices will continue to become more powerful – just in different and more varied ways.

## UNIT 4

### IT PROFESSIONALS

#### *LEAD-IN*

#### **1. Answer the questions.**

- a) List the IT jobs you know. Decide which requirements are essential for these jobs and which are desirable.
- b) What IT job have you chosen for yourself? Why?
- c) Which IT job(s) would you never do? Why?

#### *READING*

#### **2. Read the descriptions of the jobs in computing and match the main responsibilities to jobs.**

##### **This specialist**

designs	1)	2)
researches and develops computer hardware	3)	
provides support	4)	5)
tests systems and applications	6)	
writes specifications for programmes	7)	
updates a company's software	8)	
maintains all aspects of networks	9)	
creates software programmes	10)	

##### **A) Systems Analyst**

Studies methods of working within an organization to decide how tasks can be done efficiently by computers. Makes a detailed analysis of the employer's requirements and work patterns to prepare a report on different options for using information technology. This may involve consideration of hardware as well as software. Either uses standard computer packages or writes a specification for programmes to adapt existing software or to prepare new software. May oversee the implementation and testing of a system and acts as a link between the user and the programmer.

##### **B) Software Engineer/Designer**

Produces the programs which control the internal operations of computers. Converts the system analyst's specification to a logical series of steps. Translates these into the appropriate computer language. Often compiles pro-



grams from libraries or sub programs, combining these to make up a complete systems program. Designs, tests, and improves programs for computer-aided design and manufacture, business applications, computer networks, and games.

**C) Computer Salesperson**

Advises potential customers about available hardware and sells equipment to suit individual requirements. Discusses computing needs with the client to ensure that a suitable system can be supplied. Organizes the sale and delivery and, if necessary, installation and testing. May arrange support or training, maintenance, and consultation. Must have sufficient technical knowledge.

**D) Computer Systems Support Person**

Systems support people are analyst programmers who are responsible for maintaining, updating, and modifying the software used by a company. Some specialize in software which handles the basic operation of the computers. This involves the use of machine codes and specialized low-level computer languages. Most handle applications software. May sort out problems encountered by users. Solving problems may involve amending an area of code in the software, retrieving files anti data lost when a system crashes, and a basic knowledge of hardware.

**E) Computer Systems Analyst Programmer**

Creates the software programs used by computers. May specialize in the internal operating systems using low level computer language or in applications programs. May specialize in one aspect of the work, e.g. programming, systems design, systems analysis, or cover them all. May support the system through advice and training, providing user manuals, and by helping users with any problems that arise.

**F) Hardware Engineer**

Researches, designs, and develops computers, or parts of computers and the computerised element of appliances, machines, and vehicles. Also involved in their manufacture, installation, and testing. May specialize in different areas: research and development, design, manufacturing. Has to be aware of cost, efficiency, safely, and environmental factors, as well as engineering aspects.

**G) Network Support Person**

Maintains the link between PCs and workstations connected in a network. Uses telecommunications, software, and electronic skills, and knowledge of the networking software to locate and correct faults. This may involve work with the controlling software, on the wiring, printed circuit boards, software or microchips on a file server, or on cables either within or outside the building.

**3. Read the text again and say if the statements are True (T) or False (F). If the statement is false, give the right variant.**

- 1) System analyst is in charge of controlling the internal operations of computers.
- 2) Computer salesperson helps with delivery, installation and testing, if required.
- 3) One of the responsibilities of a network support person is modifying the software used by a company.
- 4) Hardware engineer deals with installing and testing of company's appliances and machines.
- 5) Computer systems analyst programmer's work involves locating and correcting faults in networking software.

**Text 2**

**4. a) What equipment/devices to help disabled people can you name?**

**Before reading the text, match the terms with the corresponding definition or synonym.**

1) assistive technology	a) a multidisciplinary field of science that includes a combination of mechanical engineering, electronics, computer engineering, and telecommunications engineering.
2) severely disabled people	b) a switch on an assistive technology device that is activated by a sip or a puff of air.
3) mechatronics	c) any piece of equipment, software program, or product system that is used to increase, maintain, or improve the functional capabilities of persons with disabilities.
4) adjust the temperature	d) people who are unable to move most of their body properly because of injury or disease
5) pneumatic switch	e) to set a proper temperature

**5. Read about Phillile Rugeri, a Mechatronics Engineer. Fill the gaps 1–4 with the most suitable missing sentences A–E. There is one extra option, which you do not need to use.**

My special area is electronic assistive technology, or EAT for short. I work for a company which makes equipment to help severely disabled people. (1) \_\_\_\_\_.

We make equipment which helps these people to live as independently as possible. (2) \_\_\_\_\_. They can send an email, adjust the temperature in the room, or operate a TV.

In this kind of work, you need knowledge of mechatronics. That's where mechanics, electronics, and software engineering meet. Take a page-turner, for example. It's a device which turns the pages of a book or magazine. (3) \_\_\_\_\_. You operate it by sucking or blowing down a tube. These signals are interpreted by a microprocessor which controls the mechanism which turns the pages. That mechanism uses electrical and mechanical devices. (4) \_\_\_\_\_.

It's an exciting job. Each development in technology means new possibilities for disabled people.

- A) The batteries must be charged when the capacity has fallen to 10 %.
- B) All three branches of engineering combine to make it work.
- C) I mean people who can't walk, people who have very limited movement – perhaps they can move only their head.
- D) The input can be a pneumatic switch – that's a switch worked by air pressure.
- E) By moving their chin, by blowing down a tube, or simply by speaking.

**6. Read the text again and answer the following questions:**

- 1) What is EAT?
- 2) What are three ways in which severely disabled people can operate equipment?
- 3) What the three branches of engineering which make up mechatronics?
- 4) What does a page-turner do?
- 5) How does a pneumatic switch work?

**VOCABULARY**

**7. Complete these definitions with jobs from the box.**

software engineer	webmaster	blog administrator
help desk technician	DTP operator	hardware engineer
network administrator	network administrator	
software tester	computer security specialist	

- 1) A \_\_\_\_\_ designs and develops IT devices.
- 2) A \_\_\_\_\_ writes computer programs.
- 3) A \_\_\_\_\_ edits and deletes posts made by contributors to a blog.
- 4) A \_\_\_\_\_ uses page layout software to prepare electronic files for publication.

- 5) A \_\_\_\_\_ manages the hardware and software that comprise a network.
- 6) A \_\_\_\_\_ designs and maintains websites.
- 7) A \_\_\_\_\_ works with companies to build secure computer systems.
- 8) A \_\_\_\_\_ helps end-users with their computer problems in person, by email or over the phone.
- 9) A \_\_\_\_\_ keeps networks operational and monitors functions and operations within the network.
- 10) A \_\_\_\_\_ makes improvements to functionality, design, and usability of new products.

**8. Study these requirements for a Computer Technical Salesperson. Decide which are essential and which are desirable. Then describe each requirement using *must have/be* or *should have/be*.**

- a) a certificate or diploma in computing
- b) experience in the computer industry
- c) able to put technical ideas into everyday language
- d) able to persuade and negotiate
- e) a qualification in marketing
- f) a thorough understanding of the product
- g) a driving license
- h) a high level of communication skills
- i) patient, persistent, and diplomatic
- j) able to work away from home

**9. Fill in the blanks with the necessary form of the word.**

<p>Dear Mr Scott,</p> <p>I am writing to apply for the position of Senior (1) _____; which was advertised on 28<sup>th</sup> March in The Times.</p> <p>I graduated in May 2012 and did a work (2) _____ with British Gas as part of my degree. Before taking my present job I worked for a year with NCR. I stayed in this job until March 2014.</p> <p>For the last three years I have been working as a software engineer for Intelligent Software. I have designed four programs in COBOL for (3) _____ use, and since January I have been writing programs in C for use in large retail chains. These have been very (4) _____ and we have won several new contracts in the UK and Europe on the (5) _____ of my team's success.</p>	<p><b>PROGRAM</b></p> <p><b>PLACE</b></p> <p><b>COMMERCE</b></p> <p><b>SUCCESS</b></p> <p><b>STRONG</b></p>
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<p>Two years ago I spent three months in Spain (6) _____ our programs and also made several visits to Italy, so I have a basic (7) _____ of Spanish and Italian. I now feel ready for more (8) _____ and more challenging work, and would welcome the opportunity to learn about a new industry.</p> <p>I (9) _____ my curriculum vitae. I will be available for an interview at any time.</p> <p>I look forward to hearing from you.</p> <p>Yours (10) _____,</p> <p>Sarah Brown</p>	<p><b>TEST KNOW RESPONSIBLE</b></p> <p><b>CLOSE</b></p> <p><b>SINCERE</b></p>
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### ***SPEAKING***

**10. Make up a speech describing your working experience. Take Ex. 9 as an example.**

### ***TRANSLATION***

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

- 1) Computing is a discipline that offers rewarding and challenging possibilities for a wide range of people regardless of their range of interests.
- 2) The number of software engineering jobs is expected to grow by 46 % in the next ten years.
- 3) At the moment he is developing a system for handling repairs.
- 4) You will be able to work on the full range of software development activities – analysis, design, coding, testing, debugging and implementation. The successful applicant should have good communication skills and the ability to work as part of a team.
- 5) I work for a company that provides phone systems for business use, especially banks.
- 6) Some software developers are the creative minds behind computer programmes, they make the applications that allow people to do specific tasks on a computer or other device.
- 7) Computing is one of those fields where it is almost impossible to predict what will happen next.

- 8) A career path in the area of devising new ways to use computers can involve advanced graduate work, followed by a position in a research university or industrial research and development laboratory.
- 9) A help desk technician is a computer support specialist whose primary responsibility is to respond to requests from computer users.

## **WRITING**

### **12. Write the annotation to the article given.**

#### **Schools are not teaching the right IT skills\***

As the economic outlook remains uncertain, there is no doubt that the UK is facing a tough future. High youth unemployment is one of the biggest problems confronting societies around the world.

In an era when information technology (IT) has been identified as a key driver in innovation, and a key player in the country's return to growth, it is concerning to see a steady decrease in the number of students studying computer science at university. Prime Minister David Cameron has admitted that the government is not doing enough to teach the next generation about computer science and we have recently seen a call to action to change the way the subject is taught so that students' skills are more translatable to the job market. This would give the UK the potential to foster growth and create new jobs in a vital segment of the economy.

As Eric Schmidt, the executive chairman at Google, recently pointed out: our students are currently learning about how to use software, but they are not taught about how the software is made. IT companies are looking for employees with real IT skills, like the ability to create software and write programmes and the aptitude to use this knowledge creatively to help build a business.

At SAP, we have found that students' skill sets will need to be adapted to correlate with the ever changing technology market. We see this in many markets across the world, although in Asia we are already seeing a higher number of candidates studying technology related degrees. Asia is often seen as a leader in IT innovation and production, and this seems to be reflected in the early adoption of all forms of technology, from smart phones to tablets. Consequently, universities have developed more courses to fuel the fast growing technology marketplace in the region.

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\* <http://www.bbc.co.uk/news/business-16141553>

It is not just IT companies that need employees with IT skills, every business needs IT; there is a wealth of growing opportunities in this field and we need to make sure students are aware of that.

As Steve Jobs once pointed out, the success of the Macintosh was built from the creativity of musicians, artists, poets and historians - who also happened to be excellent computer scientists. The UK needs to find and attract talent to this subject in order to capitalise on the potential economic value that this industry holds.

## SELF-STUDY

### READING

- 1. Read the text. Five sentences have been removed from the text, choose from sentences A–F the one which fits each gap (1–5). There is one extra sentence which you do not need to use.**

#### The case for an IT specialist\*

Would you hire your handyman to replace your boiler or even rewire your home? (1) \_\_\_\_\_

Many small businesses have their “IT guy” – often someone who is more tech savvy than the rest of the staff. (2) \_\_\_\_\_

Such relationships are useful in that they are more cost effective and may even be based on the relationship the IT person has with the staff, but what happens when, say you need to setup a new office and need to seamlessly integrate different systems together? (3) \_\_\_\_\_ A specialist or an organization with professionals that are experts in implementing these and other strategic solutions is whom you need to work with.

(4) \_\_\_\_\_ An IT firm will have experts in their particular area as well as solution architects and project managers that have wide, cross-discipline knowledge and can match business needs with the best of breed IT technologies and practices.

Experts are involved with a large number of varied businesses. Experts are professionals that take their careers seriously, participate in vendor training, follow the latest developments in their field, keeping up with their peers and are continuously participating in industry specific shows and events. (5) \_\_\_\_\_

- A) Let’s be clear, no one person is an expert in all fields of computer technology today.
- B) Probably not, so why wouldn’t you use a specialist for strategic IT projects at your company?
- C) What’s more important is that specialists will analyze the current state of information technology; ask all the necessary questions; and consider requirements such as sensitivity to downtime and budgets.
- D) Perhaps they have a small, general IT support company that manages day to day issues with desktops or end user software like Excel or Office or is on call when something goes wrong.

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\* <http://www.smartceo.com/net-at-work-the-case-for-an-it-specialist/>



- E) Then the firm's programmers hit their computers, with no other meetings or distractions for the rest of the day.
- F) Your IT person may say they can do all of the above, but overall it's just not what they do best.

**2. Read the troubleshooting guide. Then, choose the correct answers.**

Certain memory requirements are necessary to install and run ClearPic. Check that the computer has at least 500 MB of RAM available.

For optimal performance, make sure the computer's CPU has a bit size of at least 32 bits. It should run at a bus speed of 800 MHz.

There are several options to fix problems with limited memory. One, is to limit the number of programs running at the same time.

Another, is to increase the amount of RAM. First, determine whether your computer uses SIMMs or DIMMs. Make sure that the memory's bus speed matches that of the computer. Purchase the appropriate amount of RAM and attach it to the motherboard.

You can also increase your computer's virtual memory. This temporarily stores data on a paging file on the computer's hard drive. To add virtual memory, click on the "My Computer" icon. Under "Properties", increase the maximum memory amount.

1. For running ClearPic the computer must have at least \_\_\_\_\_ MB of RAM available.
  - A) 500
  - B) 800
  - C) 32
2. What should people do first when increasing available RAM?
  - A) check to see if they need SIMMs or DIMMs
  - B) increase the amount of virtual memory
  - C) make sure the CPU runs at a speed of 800 MHz
3. What is NOT a way to fix a limited memory problem?
  - A) buy a new motherboard for the computer
  - B) reduce the number of programs running
  - C) increase the amount of available RAM
4. To add virtual memory, what icon should you click on?
  - A) the "My Computer" icon.
  - B) the "My Documents" icon.
  - C) the "Control Panel" icon.

5. What is the passage mainly about?
  - A) the main function of the CPU
  - B) where to install the ClearPic file
  - C) how to add or modify computer memory

### **GRAMMAR AND VOCABULARY**

#### **3. Choose the correct option.**

1. The work \_\_\_\_\_ involve talking to clients and colleagues to assess and define what solution or system is needed.
  - a) should
  - b) can
  - c) has to
2. Experiment can happen only if both conditions \_\_\_\_\_.
  - a) exist
  - b) would exist
  - c) could exist
3. Your boss will get angry if you \_\_\_\_\_ his computer.
  - a) would have ruined
  - b) will ruin
  - c) ruin
4. If you do not upgrade your computer, this application \_\_\_\_\_ run.
  - a) would not have run
  - b) will not run
  - c) does not run
5. The first computer printer is generally considered to have been invented in 1953 by Remington Rand, \_\_\_\_\_?
  - a) is it?
  - b) isn't it?
  - c) hasn't it?
6. Did his job involved maintaining and upgrading communication systems? – \_\_\_\_\_
  - a) Yes, it did
  - b) Yes, it is
  - c) Yes, it had
7. This position \_\_\_\_\_ an understanding of how IT is used in business.
  - a) requests
  - b) orders
  - c) requires
8. Mr. Bright is \_\_\_\_\_ for analysing customer's needs, gathering and documenting requirements.
  - a) in charge
  - b) interested
  - c) responsible
9. The work of a software engineer typically \_\_\_\_\_ designing and programming system-level software.
  - a) consists
  - b) includes
  - c) holds
10. Key skills required: Organisation, problem solving, communication, clear thinking, and the ability to stay \_\_\_\_\_ under pressure.
  - a) calm
  - b) busy
  - c) furious

## ***TRANSLATION***

### **4. Translate the sentences from English into Russian.**

- 1) Monitors are display devices external to the computer case and connect via a cable to a port on the video card or motherboard.
- 2) An Intel Core i7 is the fastest version of the Intel processor for consumer-end computers and devices. Like the Intel Core i5, the Core i7 is embedded with Intel Turbo Boost Technology.
- 3) The Intel Core i7 is available in two- to six-core varieties, and can support up to 12 different threads simultaneously.
- 4) Its processor clock speed ranges from 1.70 GHz to up to 3.90 GHz, with cache memory from 4 to 12 MB.
- 5) Ports became necessary after computers became capable of executing more than one program at a time and were connected to modern packet-switched networks.
- 6) The computing world evolves very quickly and new technologies are always being developed, so it is important that candidates keep their IT knowledge up to date.
- 7) A technology degree isn't necessarily essential, but you will need to have a thorough technical understanding of the product you sell.
- 8) These days web development is pretty technical and involves some hardcore programming as well as the more creative side of designing the user interfaces of new websites.
- 9) Experienced web designers with a strong portfolio can often work on a freelance basis.
- 10) Testers can also be involved at the early stages of projects in order to anticipate pitfalls before work begins.

## ***WRITING***

### **5. Write the abstract to the text given.**

#### **Desperately seeking the Nobel Prize in computer science\***

In its 115-year history, the Nobel Prize has endured just one innovation – the prize in economic sciences. It could use an update. It needs a dedicated prize for computer science, says Zulfikar Abbany.

With all due respect to the Nobel Prize alumni, you could be forgiven for being so flippant as to think the research honored most years means so lit-

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\* <http://www.dw.com/en/desperately-seeking-the-nobel-prize-in-computer-science/a-35963053>

tle to so many. Every October we are entertained by a massive buildup to these announcements, and the laureates are treated like gods, but we mortals can be left wondering, ‘What’s it all about?’

The Nobel committee could do worse than recognize computer science with a dedicated prize.

The Nobel Prize is awarded for pioneering research, to people who overturn long-held theoretical scientific beliefs, or those who discover or invent new techniques so revolutionary they change the human experience completely. It is all well and good. Most often freshly minted Nobel laureates are nearing the end of their careers and they did their groundbreaking research some years back, so it has had time to mature and exercise its relevance for society.

But year after year I miss that one clear-cut prize awarded ... “for computing” in the category of computer science. You would think computer science would be in there somewhere, wouldn’t you? Computers have, after all, changed our lives fundamentally, and will continue to shape our future existence. But there is no update in sight at the Nobel committee.

And some scientists, including computer scientists, agree. They say computer science isn’t even a science in itself. It is rather a science made up of other sciences. Which is true.

This year’s Nobel prizes in physics and chemistry go some way to prove this if you look into the practical applications.

The work done on superconductivity by Thouless, Haldane and Kosterlitz will steer the development of new electronics, as well as quantum computing. Companies like Google and IBM are in a fierce race for quantum computing “supremacy,” as suggested by the title of a recent Google paper hinting at a 50-qubit supercomputer. Supercomputing, we are told, is a vital next step in our age of big data and artificial intelligence.

Meanwhile, the work done on molecular machines by Sauvage, Stoddart and Feringa will bring us molecule-based transistors that “may revolutionize computer technology in the same way silicon-based transistors once did.” It could also go towards materials and sensors 1,000 times thinner than a strand of hair. All good for the future of computing (if you want to be a cyborg, that is).

These are both deep aspects of current research, and very future-oriented. So computer science is on the committee’s radar, and that’s encouraging. But computing is a mere spin-off from such research. It is not the main deal, but it should be.

## INDIVIDUAL HOME TASK № 2

### Variant 1

#### READING

1. Read the text. Five sentences have been removed from the text, choose from sentences A–F the one which fits each gap (1–5). There is one extra sentence which you do not need to use.

#### Avoid touchscreens while playing? You are not alone\*

Serious gamers generally avoid touchscreens because these devices lack physical buttons due to which the key press timing in touchscreen input is unpredictable, a team of Finnish researchers has found. (1) \_\_\_\_\_

“The common view was that the lack of physical buttons is critical but you also have tactile feedback from the surface of a touchscreen. (2) \_\_\_\_\_” said Byungjoo Lee, one of the researchers. The team conducted experiments where participants were asked to tap a display when a target would appear.

(3) \_\_\_\_\_ The researchers proposed a new theory explaining that there are three sources of error that make timing very hard with touchscreens. First, people are not able to keep the finger at a constant distance above the surface. (4) \_\_\_\_\_ By contrast, when using physical keys, the finger rests on the key, eliminating this source of error.

“Second, when the finger touches the surface, it is hard for the neural system to predict when the input event has been registered. (5) \_\_\_\_\_ But users cannot sense this event so it is not predictable for them,” the authors explained. Third, when the event has been registered on the touchscreen, it still needs to be processed in the application and in some cases the time that it takes is longer than in other ones, creating another source of latency.

The new theory implies that users’ performance can be improved by making touch events more predictable.

- A) Another false belief was that touchscreens are slower but that is not the case anymore.
- B) Typically software detects the touch when the finger first touches the display.

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\* <http://articles.economictimes.indiatimes.com/magazines/panache/Avoid-touchscreens-while-playing-You-are-not-alone/articleshow/52050429.cms>

- C) When timing is made more predictable, performance improves, said the group from Aalto University.
- D) If your touchscreen responds slowly, inconsistently, or doesn't respond at all, follow these steps.
- E) The finger is always moving, and even the slightest movement hampers our ability to time precisely.
- F) The data showed large differences between physical keys and touchscreens in how reliably users could time their presses.

**2. Read the answers to the questions the interviewer asked Ron Martinez, a Technical Installation Engineer. Now match these questions to the answers given.**

**So you want to be a Technical Installation Engineer?**

- 1) The pay's not bad and there are opportunities for overtime if you want.
  - 2) Planning the job, especially in older buildings. It's important to work out the best routes for the pipes, ducts, and cables involved as this can affect the cost of the work considerably.
  - 3) I like being out and about, not stuck in an office, and this job involves a lot of travelling. I also like the contact with customers.
  - 4) I work for a company which installs central heating and air-conditioning systems. We do everything: planning, installing, testing, and commissioning.
  - 5) Get the highest qualifications you can when you're at college. It's better to do it at that stage in life than try to catch up later. Keep up your professional training when you're in the job. Move to a company large enough to good promotion prospects.
  - 6) When you switch on and it all works perfectly.
  - 7) Working in confined spaces, for example under floors roof spaces where there isn't a lot of headroom.
  - 8) Five years.
- 
- A) What's the worst thing about the job?
  - B) What does your work involve?
  - C) How long have you worked there?
  - D) What advice would you give students entering your profession?
  - E) Why did you choose this job?
  - F) What's the best thing about the job?
  - G) What's the biggest challenge of your job?
  - H) What's the salary like?

## **GRAMMAR AND VOCABULARY**

### **3. Choose the correct option.**

- 1) You \_\_\_\_\_ have experience of working with this system. It's essential.  
a) should                      b) can                      c) must
- 2) If I have more time, I \_\_\_\_\_ help you by all means.  
a) will                      b) would                      c) can
- 3) If Boris knew how to do it, he \_\_\_\_\_ help you install this application.  
a) must                      b) would                      c) will
- 4) If I hadn't made that mistake in the code, the program \_\_\_\_\_.  
a) would have run      b) will run                      c) ran
- 5) All day long they were surfing the net, \_\_\_\_\_?  
a) didn't they                      b) were they                      c) weren't they
- 6) Has he answered all the inquiries? – \_\_\_\_\_  
a) Yes, he is.                      b) Yes, he has.                      c) Yes, he does.
- 7) I click \_\_\_\_\_ an icon on my desktop but the item does not open.  
a) in                      b) on                      c) of
- 8) Examples of external peripherals \_\_\_\_\_ mouse, keyboard, printer, monitor, external Zip drive or scanner.  
a) exclude                      b) consist                      c) include
- 9) Call Center Representative \_\_\_\_\_ call center database by entering information.  
a) maintains                      b) designs                      c) determines
- 10) Becoming a software developer, you'll be \_\_\_\_\_ for the design, installation, testing and maintenance of software systems.  
a) in charge                      b) responsible                      c) relevant

## **TRANSLATION**

### **4. Translate the sentences from English into Russian.**

- 1) Perhaps the most influential component is the central processing unit: in a way, it is the 'brain' of the computer.
- 2) The main memory (a collection of RAM chips) holds the instructions and data which are being processed by the CPU.

- 3) Today's new devices, such as tablets, smartphones and wearable computing devices are considered peripherals as they can be connected and used on a computer system.
- 4) The mouse contains a rubber-coated ball that rests on the surface of your working area or a mousepad.
- 5) Finally, we can see the results (the output) on the screen or in printed form.
- 6) Most computer scientists hold a bachelor's degree with a major in computer science, information systems or software engineering.
- 7) Program Managers (PMs) transform visions into elegant designs that ultimately turn into products and solutions.
- 8) The primary requirements for being a good programmer are a good memory, an attention to detail, a logical mind and the ability to work through a problem.
- 9) Computer salesperson advises potential customers about available hardware and sells equipment to suit individual requirements.
- 10) We need a highly-motivated individual, able to support approximately 30 networked PCs.

## ***WRITING***

### **5. Write the abstract to the text given (80–100 words).**

#### **Changing Work Patterns\***

Information technology has led to many changes in how we work, where we work and even when we work. It has had a dramatic effect on our working lives.

Until the mid-90s it was not possible to shop online. The closest alternative was shopping by phone. The same was true for banking and all the host of Government and other services which now exist online. E-mail was not widely used and instant messenger didn't exist. Documents could not be sent as email attachments and were faxed instead (a paper document is digitised, sent down a phone line, and then printed at the other end). The need to travel for essential services, e.g. banking, was far greater for those who lived outside town.

Today, customers expect even the smallest of businesses to have a professional, informative website. Businesses that have failed to embrace the advancement of communications and ICT have put themselves at a disad-

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\* <http://www.bbc.co.uk/schools/gcsebitsize/ict/implications/2workpatternsrev1.shtml>



vantage. It is now common for adverts to include a web address in addition to, or even instead of a phone number.

The introduction of information technology has caused some unemployment, for example, computer-controlled warehouses need only a handful of staff to operate them. Computer-controlled robots are now common on production lines, replacing human workers. The old skills of workers in the printing industry are now out-of-date. Some jobs have disappeared as they can now be done automatically, e.g. marking multiple choice exam papers.

However, it is fair to say that the development of information technology has led to many new jobs such as computer technicians, programmers, web designers and systems analysts.

## Variant 2

### READING

**1. Read the text. Five sentences have been removed from the text, choose from sentences A–F the one which fits each gap (1–5). There is one extra sentence which you do not need to use.**

If you are a gamer you might wonder if you can use a trackball to play your favorite game. I personally think trackball gaming just as good, if not better than a regular mouse. (1) \_\_\_\_\_.

Computer gamers have been able to successfully use trackballs in most modern computer games, including FPS, RPG, and RTS genres, with any slight loss of speed compensated for with an increase in precision. (2) \_\_\_\_\_. However, many gamers are deterred by the time it takes to ‘get used to’ the different style of hand control that a trackball requires.

Once you are comfortable with the trackball, it would seem obvious that a trackball offers more benefits in gaming than a mouse.

- First, a trackball is just as (or more) accurate as the best optical mice.
- A trackball offers much better control, which is very important in many games.

- With a trackball you only use your fingers so your wrists, arms, shoulders and neck don’t have to move. (3) \_\_\_\_\_.

- A trackball doesn’t require desk space or a clean surface or a mousepad. (4) \_\_\_\_\_

- The cord never ever gets in the way of your movement, because a trackball doesn’t move.

And a few advantages of a mouse compared to a trackball are worth mentioning.

- A mouse leaves your fingers more easily available to hit combinations of buttons than a finger trackball. (5) \_\_\_\_\_

- There’s a wide selection of gaming mice, while there are no trackballs that are made specifically for gaming.

- Achieving a smooth 360+ degree rotation on a First Person Shooter (FPS) with a thumb trackball might be more tricky. You have to move your thumb at some point. \*

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\* <http://www.trackballmouse.org/is-a-trackball-good-for-gaming/>

- A) Many trackball gamers are competent at “throwing” their cursor rapidly across the screen, by spinning the trackball, enabling (with practice) much faster motion than can be achieved with a ball-less mouse and arm motion.
- B) It never needs to be picked up and moved over to make movements, which can be annoying in a game.
- C) Unlike conventional computer mice, the trackball has no limits to its movement.
- D) Most gamers still prefer a mouse, but it’s hard to say if that is because so many more people use mice and never tried a trackball, or if a mouse is really better.
- E) This gives you better control, more speed while using less energy.
- F) This could be solved by using a thumb operated trackball where you would have your four other fingers to hit buttons.

**2. Read about Asma Bakour, a Kitchen Designer, talking about technology in the kitchen and mark the given statements as true or false.**

When I left school I did an apprenticeship in Cabinet making. I was quite good at this and I enjoyed it so I went to university to study Wood technology and Business and then decided to set up my own company.

My company specializes in designing and installing kitchen units. We are finding that our customers want more and more high-tech appliances in their kitchens so my job involves a lot more than putting in cupboards and hanging doors.

I really like the changing technology used in kitchen appliances. Nowadays, cookers are no longer simple appliances. Using different technology, most modern ovens are self-cleaning. One company called Kuppersbusch has developed a catalytic system. The way it works is that the oven fan blows air from the oven through a catalytic converter which changes fat and food residue into water and carbon dioxide.

Another feature of the modern kitchen is electronic entertainment systems. It’s possible to install flip-down flat screens that can be used for watching TV or as a computer monitor to access the Internet for recipes. They can even be linked to security cameras.

The smart kitchen is on its way and I am doing everything to make sure my company is able to provide our customers with the kitchens of the future. The best place to follow the latest technologies is the Massachusetts Institute of Technology, they’ve got a section called Counter Intelligence. It’s a department dedicated to inventing new gadgets and gizmos for the kitchen. Their current projects include an electronic spoon that teaches you how to cook!

- 1) After leaving the school Asma got a University degree.
- 2) He has never tried to set up a company of his own.
- 3) Customers want to have up-to-date appliances to be installed in their kitchen units.
- 4) Asma really cares for the changing technology used in kitchen appliances.
- 5) A catalytic system developed by Asma's company makes the ovens self-cleaning.
- 6) Electronic entertainment systems in the kitchen can be linked to security cameras.
- 7) The latest technologies were developed in the section of Counter Intelligence, the Massachusetts Institute of Technology.
- 8) Electronic spoons are able to teach you how to bake.

### ***GRAMMAR AND VOCABULARY***

#### **3. Choose the correct option.**

- 1) In a typical progression path, you \_\_\_\_\_ be promoted to senior or principal developer and from there to project manager.  
 a) could                      b) should                      c) have to
- 2) When water temperature reaches 100 degrees, this liquid \_\_\_\_\_.  
 a) will boil                      b) would boil                      c) boils
- 3) If John were smarter and more hard-working, he \_\_\_\_\_ pass this test.  
 a) can                      b) would                      c) will
- 4) If I hadn't broken my iPhone screen, I \_\_\_\_\_ this game with you.  
 a) might have played    b) will play                      c) may have played
- 5) He has tested the product in real situations, \_\_\_\_\_?  
 a) hadn't he                      b) hasn't he                      c) has he
- 6) Will you review current systems? – \_\_\_\_\_  
 a) Yes, I would.                      b) Yes, I have.                      c) Yes, I will.
- 7) To create a document, you must either have a \_\_\_\_\_ or a computer capable of creating a document on an online service.  
 a) CPU                      b) editor                      c) word processor
- 8) A hard drive \_\_\_\_\_ of one or more platters to which data is written using a magnetic head, all inside of an air-sealed casing.  
 a) contains                      b) consists                      c) includes

- 9) A software developer is expected to \_\_\_\_\_ ideas for system improvements.  
a) generate                      b) combat                      c) determine
- 10) If you have a degree, but it's not related to IT, you could \_\_\_\_\_ for a graduate trainee scheme.  
a) apply                      b) go                      c) choose

## ***TRANSLATION***

### **4. Translate the sentences from English into Russian.**

- 1) First, data is fed into the computer's memory and then, when the program is run, the computer performs a set of instructions and processes the data.
- 2) Perhaps the most influential component is the central processing unit: its function is to execute program instructions and coordinate the activities of all the other units.
- 3) All primary computer hard drives are found inside a computer case and are attached to the computer motherboard using a special cable, and are powered by a connection to the PSU (power supply unit).
- 4) Peripherals are the physical units attached to the computer which include storage devices and input/output devices.
- 5) I answer questions or resolve computer problems for clients in person, via telephone or from remote location.
- 6) Computer scientists can work for government agencies and private software publishers, engineering firms or academic institutions.
- 7) After completing this 4-year program, computer scientists often earn a Ph.D. in computer science, computer engineering or a similar area of study.
- 8) Hardware engineer researches, designs and develops computers, or parts of computers and the computerized element of appliances, machines and vehicles.
- 9) Computer salesperson discusses computing needs with the client to ensure that a suitable system can be supplied.
- 10) IT Support Officer should be able to communicate well with users and external contractors.

## **WRITING**

### **5. Write the abstract to the text given (80–100 words).**

#### **IT Jobs will grow 22 % through 2020, says U.S.\***

U.S. officials on Thursday said that offshoring will hurt the growth of U.S. programming jobs in this decade, though expansion of healthcare IT and mobile networks will increase demand for software developers, support technicians and systems analysts.

By 2020, employment in all computer occupations is expected to increase by 22 %, but some IT fields will fare better than others, according to the U.S. Bureau of Labor Statistics (BLS).

Demand for software developers will be the strongest in this period, with increases ranging from 28 to 32 %, depending on the type of software development.

The agency's forecasts, particularly for technology-related jobs, are often controversial because they can't account for rapid market changes and tech disruptions. But its estimates are often cited in various policy debates on issues ranging from education to immigration.

Victor Janulaitis, CEO of Janco Associates, a research firm that analyzes IT wage and employment trends, says: "When you consider the overall demand for systems and applications in high-growth markets like China and India, [the BLS projections] mean the U.S. will be doing a diminishing portion of the development and implementation work. If that's the case, the U.S. will no longer be the leader in IT. The BLS projections are a bad sign for the U.S. IT graduates from universities. Those numbers do not cover the net growth necessary to give all of the graduates jobs."

The outlook varies from occupation to occupation. Here's a look at the BLS projections for various tech jobs. Demand for database administrators is expected to increase by 31 %. For IT managers, employment is projected to increase by 18 % by 2020.

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\* <http://www.computerworld.com/article/2502348/it-management/it-jobs-will-grow-22--through-2020--says-u-s-.html>

## Variant 3

### READING

- 1. Read the text. Five sentences have been removed from the text, choose from sentences A–F the one which fits each gap (1–5). There is one extra sentence which you do not need to use.**

The iPhone 7 and iPhone 7 Plus have landed and there are some big differences between them. The iPhone 7 is expected to comfortably outsell its bigger brother. (1) \_\_\_\_\_

One of the subtle changes is the home button is now a fixed touch sensitive surface with haptic feedback. (2) \_\_\_\_\_

Even now some benchmarks claim the 2015 iPhone 6S is faster than Android's 2016 flagships! (3) \_\_\_\_\_

iPhone 7 – Apple A10 Fusion chipset: Quad Core CPU, Six Core GPU, 2GB of RAM

iPhone 6S – Apple A9 chipset, CPU: Dual-core 1.84 GHz Twister; GPU: PowerVR GT7600, 2GB of RAM

(4) \_\_\_\_\_ The added durability, water resistance, upgraded camera, performance gains, brighter display and bigger storage options are all welcome and – in some cases – overdue.

By now it is common knowledge that a radical upgrade will come in 2017 with the 'all glass' Edge iPhone to celebrate the range's 10th anniversary. (5) \_\_\_\_\_\*

- A) This should reduce button failures (a fairly common problem) and app developers will get access to allow custom haptic feedback patterns.
- B) So the iPhone 7 is a bigger upgrade than cynics will claim.
- C) The two bigger design changes on the iPhone 7 are big talking points: it can now survive plunges into a swimming pool, thanks to the water-resistant chassis, and the headphone jack on the bottom of the phone is no longer there.
- D) But that hasn't stopped Apple giving the iPhone 7 another significant speed boost:
- E) The iPhone 7 is predominantly a step forward, but it is unlikely to be remembered as a classic Apple release...
- F) But should you upgrade when it looks so similar to the iPhone 6S – especially as last year's model has just received a price cut and surprising storage boost?

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\* <http://www.forbes.com/sites/gordonkelly/2016/09/09/iphone-7-vs-iphone-6s-whats-the-difference/#26e40df45238>

**2. Read about Brian Jones, an Electronic Technician, and mark the given statements as true or false.**

I got interested in electronics at school. The History Teacher was a radio amateur. He started an after-school electronics club. He showed us how to make simple radios, multimeters, that sort of thing. I learned more from him than the Physics Teacher. Another reason I was interested was one of my friends built model aircraft, large things with a wingspan well over a metre, and I used to make the transmitters and receivers for radio control. If you forgot to switch on the receiver, the plane flew off into the distance until the fuel ran out. That happened more than once.

So after school I took a certificate course in Electronics at the local college. About half the time was spent in the lab, which was good. I liked the practical side. We had time to work on a project of our own. I designed a device to tell people who were fishing when a fish was biting the bait.

When I finished the college, with another student I started my own company repairing computers and other electronic items. But we gave it up after a couple of years. The price of things like DVD-players kept falling. It became cheaper to buy new than have them repaired.

Now I work for the Northern Lighthouse Board. I help look after communications equipment at headquarters and in lighthouses as well as navigation equipment on buoys and radio beacons. There's not much on a buoy - just a light and a radar reflector. We also look after the transmission stations for the Marine GDPS. There are four in Scotland. The Marine Global Differential Positioning System allows ships to plot their position very accurately. This system combines GPS signals with land-based signals to give a really accurate position. It's important in busy shipping lanes.

The best part of my job is that all the lighthouses are automated now. There are no lighthouse keepers these days. We monitor them 24 hours a day to make sure everything's working. When something goes wrong, you have to go out there and fix it. Some of them are quite remote. That can mean a helicopter ride in winter out into the Atlantic. I love going to places that very few people have ever visited, including the Flannan Isles.

I like this job too much to think of looking for something else.

- 1) The Physics teacher started an after-school electronic club which Brian joined.
- 2) In his childhood Brian I used to make the transmitters and receivers for model aircraft
- 3) After school Brian got a University degree in Electronics.
- 4) He designed a gadget to help fishermen.





## ***TRANSLATION***

### **4. Translate the sentences from English into Russian.**

- 1) The more memory chips you have, the more work you can do at a time.
- 2) The mouse port and the keyboard port look exactly the same but they have labels to avoid confusion.
- 3) The keys on a computer keyboard can be arranged in many different ways. The most common way on a desktop PC is called the extended keyboard.
- 4) Computers have several sorts of memory, distinguished by their access time, storage capacity, cost, and the typical lifetime or rate of change of the data they hold.
- 5) Businesses and government agencies usually employ computer scientists to develop new products or solve computing problems.
- 6) I provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, and electronic mail.
- 7) This additional program includes coursework in hardware and software systems, program languages and computational modelling as well as a research project.
- 8) Applications Programmer writes the programs which enable a computer to carry out particular tasks.
- 9) Computer salesperson organizes the sale and delivery of the computer and, if necessary, installation and testing.
- 10) The successful candidate for the position of IT Support Officer must work well under pressure and as a team member.

## ***WRITING***

### **5. Write the abstract to the text given.**

#### **Early computer rebuild wins conservation award\***

18 November 2016

An exhibit that demonstrates what it was like to programme one of the first computers has won the Tony Sale award for best computer conservation project.

The award-winning interactive project recreates part of Eniac – the Electronic Numerical Integrator and Computer. The massive machine built from

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\* <http://www.bbc.com/news/technology-38026006>

18,000 valves and 1,500 relays first ran a program in February 1946. The exhibit was created at the Heinz Nixdorf Museum Forum (HNF) in Germany.

The award was set up in 2012 to honour the memory of the Tony Sale, a British pioneer of computer conservation who spent 15 years recreating the early Colossus computer.

The 2016 winner was created by Dr Jochen Viehoff and Johannes Blobel for the HNF and is built of a simplified model of one small component of Eniac known as the accumulator. The original Eniac filled several rooms and weighed about 27 tonnes. The exhibit uses two accumulators, cables, relays and flashing lights to show how complicated it was to perform simple calculations on the early computer.

Eniac was the second general-purpose electronic computer created in the 1940s and won wide acclaim because the machine that was first, called Colossus, remained a state secret until the 1970s.

Prof Martin Campbell-Kelly from the University of Warwick, who headed the award's panel of judges, said the exhibit "captured the essence" of the Eniac.

"The panel was particularly impressed at the thought and planning that went into making the reconstruction accessible to non-specialist audiences," he said.

Visitors to the HNF would be "captivated" by the exhibit, he said.

Previous winners include a virtual reconstruction of the German Z1 computer and a museum exhibit that explored the history of IBM's influential 1401 machine.

## Variant 4

### READING

- 1. Read the text. Five sentences have been removed from the text, choose from sentences A–F the one which fits each gap (1–5). There is one extra sentence which you do not need to use.**

As consumers, we see barcodes used all the time: purchasing from any retail store, renting a car, attending major events, flying, and even going to the doctor. (1) \_\_\_\_\_ You will improve your business' process (saving time and money) by understanding how barcodes work and by knowing how to use them effectively in partnership with a quality barcode scanner.

(2) \_\_\_\_\_ Since then, barcodes can be found on almost every item for purchase within a store. A barcode is used to encode information in a visual pattern readable by a machine. Barcodes are used for a variety of reasons including tracking products, prices, and stock levels for centralized recording in a computer software system.

There are two types of barcodes – linear and 2D. The most visually recognizable, the UPC (Universal Product Code), is a linear barcode made up of two parts: the barcode and the 12-digit UPC number. (3) \_\_\_\_\_ The next five digits represent the item's number. The last number is called a check digit which enables the scanner to determine if the barcode was scanned correctly or not.

A linear barcode typically holds any type of text information. (4) \_\_\_\_\_. A linear barcode scanner can't read a 2D barcode; requiring the use of an image scanner for reading the information embedded in a 2D barcode.

Most barcode scanners consist of three different parts including the illumination system, the sensor, and the decoder. In general, a barcode scanner "scans" the black and white elements of a barcode by illuminating the code with a red light, which is then converted into matching text. (5) \_\_\_\_\_ The decoder interprets that signal, validates the barcode using the check digit, and converts it into text.

- A) More specifically, the sensor in the barcode scanner detects the reflected light from the illumination system (the red light) and generates an analog signal that is sent to the decoder.
- B) Barcodes aren't just lines appearing on tickets or inventory items, barcode scanning systems help businesses track an amazing amount of information which, in turn, increases productivity and efficiency.
- C) The first six numbers of the barcode is the manufacturer's identification number.

- D) Because barcode scanners are variable and include diverse capabilities, some are better suited for certain industries due to reading distance and to work volume capacity.
- E) In June of 1974, the first barcode appeared on a pack of Wrigley Company chewing gum.
- F) In contrast, a 2D barcode is more complex and can include more information in the code: price, quantity, web address or image.

**2. Read about Sami Hassan, a Network Designer, and mark the given statements as true or false.**

At school I used to enjoy Maths and Physics, so when I left school at sixteen I wanted a job working in technology, and outdoors if possible. A friend told me that BT had an apprenticeship scheme, so I applied. There was an interview and I was accepted. I was seventeen and a Service Technician, climbing poles and fixing lines. It was great. BT is a company that is constantly changing and there are always opportunities to study and learn new things. I passed my BTEC in Telecommunications with 100 %!

At eighteen I became a Data and Networks Technician and studied for an NVO. It was my job to install new networks at the exchanges. I was responsible for the exchange switch and transmission. I was out on work placements a lot to get experience and did loads of courses. We got days off work to study.

I got more and more interested in actually designing the network. The new 21st-Century Network was about to be developed so I decided to become a Network Designer when I was twenty, and joined the Network Design Department. The 21st-Century Network was to be a completely new IT network to replace the old phone-based one. It was a massive challenge to IT. In the office I learned how to design and plan networks as well as how to predict future growth and trends using modelling techniques. At the same time the company sponsored me to do a university degree. Now I was designing the systems that BT's technology runs on. When I was 23, I graduated from university with a BSc in Computer and network engineering and have worked as a Network Designer since then. I've worked as Project Manager on a range of really interesting projects and it appealed to me a lot. I've had to learn different skills really quickly and learn how to prioritize. New projects make you think about what exactly needs to be done and which parts are important. I have to give presentations to senior management within the company, major customers, and at international conferences.

I like this job too much to think of looking for something else.





## **WRITING**

### **5. Write the abstract to the text given.**

#### **The firm that starts work at 9.06 am\***

By Will Smale  
21 November 2016

There aren't many companies that insist staff start work every day at such an oddly specific time as Pivotal Software. Employees at the US firm's 20 global offices all have to be at work and ready to go at exactly 9.06 am. At that precise time a cowbell is rung, or a gong is hit, and all workers gather for a brief stand-up meeting that lasts for between five and 10 minutes. Then the firm's programmers hit their computers, with no other meetings or distractions for the rest of the day.

Pivotal's founder and chief executive Rob Mee says it is all about making the working day as efficient as possible. "I realised that programmers, if left to their own devices, may roll in at 10 am," he says. "And if they haven't eaten adequately they will be hungry by 11am, so they'll stop for food, which then makes the afternoon too long. It is not very efficient. So we thought, 'let's provide breakfast for everyone.' It gives them a reason to get here." So all employees get a free breakfast before work starts at 9.06 am.

But why 9.06 am? "We thought that if we made it 9 am, developers psyching themselves up for the day would think, well if it is 9 am I'll be late," says Mr Mee. "So then we thought, 'why don't we make it 9.05 am,' but that is too precise, as programmers don't like over-optimising, so we went with 9.06 am. Then it became something fun."

And at the end of the day everyone has to leave the office at 6pm sharp because staff aren't allowed to work into the evening. Mr Mee explains the reasoning: "Programmers don't programme well if they are too tired, so we don't want them working late into the night."

While Pivotal's approach to morning punctuality may seem endearingly nerdy, the business is in fact one of the most successful companies most people have never heard of. Valued at \$2.8 bn (£2.4 bn), its investors include computer groups Dell Technologies and Microsoft, conglomerate General Electric, and car giant Ford.

Pivotal's staff train the software teams of other companies – including other IT firms – to programme better. So if a company wants its software developers to up their game, to help improve a product or service, it sends them to Pivotal for an immersive boot camp that typically lasts three months.

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\* <http://www.bbc.com/news/business-37998577>



And with Pivotal's assistance much in demand, its vast client list includes BMW, Mercedes-Benz, Lockheed Martin, NBC, Bloomberg, Orange, eBay, South West Airlines, and Twitter. Even Google called on Pivotal's help back in its infancy, and Mr Mee's business also helps intelligence agencies. Pivotal's approach sees visiting workers pair up with its programmers, and then they write code together.

What Mr Mee says is central to Pivotal's work is teaching "agile software development". By this he means software that can quickly and easily be changed and adapted, and is constantly tested to ensure it works as well as possible. "We aim to enable companies to respond more quickly to disruption or changing consumer needs," says Mr Mee.

# GRAMMAR REFERENCE

## THE PASSIVE VOICE

### 1.1. The Formation of the Passive Voice

to be + V<sub>3</sub>

Tense/Verb Form	Active	Passive
<b>Present Simple</b>	They <b>develop</b> films here.	Films <b>are developed</b> here.
<b>Present Continuous</b>	They <b>are developing</b> a film now.	A film <b>is being developed</b> now.
<b>Past Simple</b>	They <b>developed</b> this film yesterday.	This film <b>was developed</b> yesterday.
<b>Past Continuous</b>	They <b>were developing</b> a film when I arrived.	A film <b>was being developed</b> when arrived.
<b>Present Perfect</b>	They <b>have already developed</b> ten films.	Ten films <b>have already been developed</b> .
<b>Past Perfect</b>	They <b>had developed</b> fifty films by that year.	Fifty films <b>had been developed</b> by that year.
<b>Future Simple</b>	They <b>will develop</b> the film tomorrow.	The film <b>will be developed</b> tomorrow.
<b>Conditionals</b>	They <b>would develop</b> the film if they had time.	The film <b>would be developed</b> if they had time.
<b>Modals</b>	They <b>must develop</b> the film by noon.	The film <b>must be developed</b> by noon.

### 1.2. The Use of the Passive Voice

\* when the person who carries out the action (the agent) is unknown, unimportant or obvious from the context.

*My car was stolen last night, (unknown agent)*

*The plants are watered every evening, (unimportant agent)*

*The house was burgled, (by a burglar-obvious agent)*

\* when the action itself is more important than the agent, especially in news headlines, newspaper articles, formal notices, instructions, advertisements, etc.

*The new wing of the hospital was opened by the President yesterday morning.*

\* when we want to emphasize the agent.

*The town library was built by my great-great-grandfather in 1874.*

\* when we want to make statements more polite or formal.

*My new CD player is broken, (more polite than You've broken my new CD player).*

## EXERCISES

### 1. Form the Passive from the verbs.

*Example:* to take – to be taken

to ask, to read, to write, to invite, to drink, to eat, to smoke, to drive, to see, to send, to inform, to build, to publish, to help, to advise, to give, to bring, to speak.

### 2. Translate the sentences paying attention to the Present Simple Passive.

1. Many books are published in Russia. 2. The machines are tested by the police. 3. I am always driven to work by my neighbor. 4. The machines are tested before use. 5. The car is polished once every three months. 6. Concrete is made of cement, sand and gravel. 7. A picnic is arranged once a month by our club. 8. These gates aren't painted every year. 9. I'm not invited to my uncle's every weekend. 10. He isn't asked at every lesson.

### 3. Translate into English using the Present Simple Active or Passive.

1. Я приглашаю – Меня приглашают.
2. Он присылает – Ему присылают.
3. Она рассказывает – Ей рассказывают.
4. Они сообщают – Им сообщают.
5. Рабочий строит – Дом строится.
6. Писатель пишет книгу – Книга публикуется.
7. Студент пишет упражнение – Упражнение выполняется.
8. Студенты помогают – Студентам помогают.
9. Мы задаем вопросы – Нам задают вопросы.
10. Я советую – Мне советуют.

### 4. Translate the sentences paying attention to the Past Simple Passive.

1. The best machine was chosen. 2. My bike was stolen last week. 3. The police were called. 4. The book was finished yesterday. 5. The meeting was held on Monday. 6. He was not invited to the party. 7. They were introduced

to my friend. 8. I was visited by the teacher last week. 9. Many questions were given to us at the lesson. 10. The letters were brought by the postman.

### **5. Put the verbs in brackets into the Future Simple Passive.**

*Example:* The delegation ... *will be met*... (meet) tomorrow.

1. This program ... (show) again tomorrow. 2. Your room ... (clean) in a week. 3. I ... (introduce) to the director soon. 4. The gates ... (paint) again next year. 5. My pets ... (not feed) until six o'clock. 6. You ... (not bother) by that man again. 7. You ... (invite) to Betty's party? 8. I ... (allow) to go to Europe. 9. Many questions ... (ask) to the lecturer. 10. The letter ... (write) next week.

### **6. Put the verbs in brackets into the Present, Past or Future Simple Passive.**

1. Moscow ... (found) in 1147. 2. Football ... (play) in summer. 3. Her new article ... (finish) next year. 4. The letter ... (receive) tomorrow. 5. That bone ... (give) to the dog today. 6. The chair ... (break) two days ago. 7. An interesting fairy-tale ... (tell) tonight. 8. The boy ... (take) to the zoo last month. 9. The book ... (publish) in three months. 10. Many letters and telegrams ... (send) every day.

### **7. Put the verbs in brackets into the Continuous Passive.**

1. This question still ... (discuss). 2. The theatre ... (build) when we came to this town. 3. My friend ... (ask) when the dean entered the classroom. 4. A new grammar rule ... (explain) by the teacher now. 5. While the experiment ... (make) we were not allowed to enter. 6. Who ... (examine) now? 7. Don't switch off the TV-set. An interesting quiz program ... (broadcast) now. 8. The lecture ... (listen) to attentively. 9. The flowers ... (water) from 2 till 3. Tomorrow. 10. The glasses ... (look) for everywhere now.

### **8. Translate the sentences paying attention to the passive forms. Identify the tense.**

1. A new underground station is being constructed in our street. 2. The device was being tested when you entered the laboratory. 3. This question is not connected with the problem which is being discussed now. 4. Many various machines are being produced for our industry by this plant. 5. The art exhibition of young artists is being widely commented by the press. 6. The machines produced by this plant are being used in agriculture. 7. Masterpieces from our museum were being exhibited in different cities in June last year. 8. He is being

waited for. 9. While the experiment was being carried out, nobody left the laboratory. 10. The speaker was being listened to with great interest.

**9. Put the verbs in brackets into the Simple or Continuous Passive.**

1. He ... (ask) now. 2. We received the telegram when the letter ... (type). 3. The article ... (translate) into Russian in a few days. 4. A new grammar rule ... usually ... (illustrate) by some examples. 5. She ... (laugh) at if she says it. 6. The new project ... still ... (work) at. 7. The document ... still ... (look) for. 8. Books by this writer ... always much ... (speak) about. 9. The meeting won't be over soon as the report ... (follow) by a discussion. 10. The doctor ... (send) for a minute ago.

**10. Translate the sentences paying attention to the Perfect Passive forms.**

1. An opening speech has been made by Mr. Brown. 2. Tom said that the conditions of work had been greatly improved. 3. The project has already been submitted to the commission. 4. He asked me if I had been invited to the party. 5. The project will have been finished by Tuesday. 6. Much attention has been paid to the further improvement of the living conditions of the people. 7. She said that her poems had been devoted to the youth. 8. Good art training has been received by these young artists. 9. She has been listened to with great attention. 10. The house will have been built by the end of the year.

**11. Change from active into passive.**

1. I took him for a walk. 2. She won't forget your telephone number. 3. We'll book tickets tomorrow. 4. We met her at the corner of the street. 5. We discussed such problems at our meetings. 6. They are building a new cinema in his street. 7. A young architect designed that beautiful building. 8. I rang my friend up. 9. I have just done the translation. 10. They will have passed the examinations by February.

**12. Write sentences in the passive. Mind the tense form.**

*Example:* (The floor/not clean/yet) *The floor hasn't been cleaned yet.*

1. (The politician/interview/now) .....
2. (The Mona Lisa/paint/Leonardo da Vinci).....
3. (My flat/burgle/last night).....
4. (All tickets/sell/before we got there).....
5. (The dog/not feed/yet).....

6. (The presents/wrap/now) .....
7. (The prizes/award/President/tomorrow).....
8. (Tea/grow/India).....
9. (The prisoners/take/to prison/now).....
10. (The book/read/by next week) .....

**13. Fill in *by* or *with*.**

1. Most children are strongly influenced ...*by* ...they parents.
2. The jam sandwiches were made ...*with* ...white bread.
3. Jake was dismissed ... his boss.
4. The meal was eaten ... chopsticks.
5. The lock was broken ... a hammer.
6. The football fans were observed ... the police.
7. My hair was cut ... a top stylist.
8. My camera was loaded ... a black and white film.
9. The beds were made up ... clean sheets.
10. This awful mess was made ... Carol's dog.

**14. Put the verbs in brackets into the correct passive form.**

Last week a new leisure centre 1) ...*was opened*... (open) in the town of Halden. The centre 2) ... (believe) to be the largest in Europe and it 3) ... (hope) that it 4) ... (visit) by over 40,000 people a month. The centre 5) ... (plan) for over ten years, but it 6) ... (only/make) possible by a large government grant. Unfortunately, it 7) ... (not/finish) yet, but it 8) ... (think) that it 9) ... (complete) by next month. The centre includes an Olympic-size swimming pool and fifty tennis courts which 10) ... (can/book) by phone. The gym 11) ... (claim) to be the most modern in the country. The equipment 12) ... (buy) in Germany and training 13) ... (provide) by five top instructors. Entrance fees are cheap because half the cost 14) ... (pay) by the local council, so many local people will be able to afford them.

## PROGRESS CHECK TEST 1 (*The Passive forms*)

### 15. Choose the correct item.

1. Chocolate can .... or ... .  
a) eat, drink                      b) be eating, drinking      c) be eaten, drunk
2. The cocoa plant .... by the Mayas, Toltecs and Aztecs more than 3,000 years ago.  
a) was first growing    b) was first grown              c) was first being grown
3. A suspicious-looking man ... running away from the scene of the crime.  
a) was seen                      b) is seeing                      c) saw
4. The salad was made ... lettuce, onions and cucumber.  
a) of                                  b) by                                  c) with
5. The curtains ... by Marie.  
a) are making                      b) are being made              c) made
6. The pool must be ... on Sunday.  
a) cleans                              b) cleaning                      c) cleaned
7. These cakes are made ... cherries.  
a) by                                      b) of                                      c) with
8. The goods ... recently.  
a) has been delivered    b) have been delivered    c) delivered
9. The picture ... to me for my birthday.  
a) was given                      b) gave                                  c) is given
10. My dress ... by my mother now.  
a) is being made              b) is made                              c) made
11. The book ... in a month.  
a) is publishing              b) was published                  c) will be published
12. The cats ...once a day.  
a) are being fed              b) are feeding                      c) are fed
13. I ... how to swim when I was five.  
a) will be taught              b) was taught                      c) have been taught
14. The jewellery ... in the safe.  
a) is kept                              b) are kept                              c) is keeping
15. "What is happening over there?" – "Oh, a new cinema ... ."  
a) is built                              b) is being built                  c) was is built

16. Paul's car ... last night.  
 a) is stolen                      b) has been stolen                      c) was stolen
17. Claire's phone number ... on this piece of paper.  
 a) written                      b) be written                      c) is written
18. This tree ... in the 19<sup>th</sup> century.  
 a) plant                      b) was planted                      c) is planting
19. This piece of music ... yet.  
 a) has not recorded    b) have not recorded                      c) has not been recorded
20. Not much ... about this complicated subject.  
 a) is known                      b) known                      c) knows
21. The new night club ... by the council last week.  
 a) closed                      b) was closed                      c) is closed
22. I have a beautiful jumper which ... by my grandmother.  
 a) knitted                      b) had been knitted                      c) was knitted
23. The instructions must ... very carefully.  
 a) was followed                      b) be followed                      c) is followed
24. Tickets ... before we arrived.  
 a) had been sold                      b) have been sold                      c) will be sold
25. The new bridge ... already.  
 a) is being built                      b) has been built                      c) had been built
26. Breakfast ... at eight in the morning.  
 a) was served                      b) had been served                      c) has been served
27. Designer clothes ... in this shop.  
 a) is sold                      b) was sold                      c) are sold
28. The exam ... by all the children by three o'clock.  
 a) was taking                      b) was being taken                      c) had been taken
29. Chinese ... by more than one billion people.  
 a) has spoken                      b) is spoken                      c) speak
30. The house ... by the time we arrived.  
 a) wasn't cleaned                      b) isn't cleaned                      c) hadn't been cleaned



## TYPES OF QUESTIONS

There are five types of questions in the English language:

1. General questions.
2. Special questions.
3. Questions to the subject.
4. Tag questions.
5. Alternative questions.

### 1. GENERAL QUESTIONS (or YES/NO QUESTIONS)

A General question is one of the main questions in the English language. It is made up to the whole sentence and requires only “yes” or “no” answers.

The word order in a general question is indirect, i.e.

**An auxiliary verb or a modal verb → subject → verb...?**

There are some auxiliary verbs the choice of which depends on the tense of the verb. These are:

**am/is/are/was/were/do/does/did/have/has/had/shall/will.**

There are some modal verbs. These are:

**an/could/may/might/must/should/ought.**

*Examples of general questions:*

1. Is he a student? – Yes, he is / No, he isn't.
2. Are they pilots? – Yes, they are / No, they aren't.
3. Was your brother in the cinema yesterday? – Yes, he was / No, he wasn't.
4. Does she know English well? – Yes, she does / No, she doesn't.
5. Do your cats eat a lot? – Yes, they do / No, they don't.
6. Did you buy that picture? – Yes, I did / No, I didn't.
7. Has he arranged the party yet? – Yes, he has / No, he hasn't.
8. Have you got Claire's phone number? – Yes, I have / No, I haven't.
9. Had they travelled a lot before they visited London? – Yes, they had / No, they hadn't.
10. Will you show me the way to the underground? – Yes, I will / No, I won't.
11. Can you swim? – Yes, I can / No, I can't.
12. Could you see that ship? – Yes, I could / No, I couldn't.

## 2. SPECIAL QUESTIONS (or WH - QUESTIONS)

A special question is made up to any part of the sentence to find out particular detailed information and requires a full answer.

The word order in a special question is:

**Wh** → **an auxiliary verb or a modal verb** → **subject** → **verb...?**

Remember the following interrogative words (Wh – вопросительные слова):

Interrogative words	Translation
What...?	Что, какой...?
Where...?	Где, куда...?
When...?	Когда...?
Why...?	Почему, зачем...?
Who...?	Кто...?
Which...?	Который...?
Whose...?	Чей...?
Whom...?	Кого, кому...?
How...?	Как...?

The most widespread interrogative words are *what, where, when*.

Besides, there are some interrogative combinations made up of two words. These are:

Interrogative combinations	Translation
What kind...?	Какой...?
What time...?	Во сколько...?
How many...?	Сколько...? (с исчисляемыми существительными)
How much...?	Сколько...? (с неисчисляемыми существительными)
How long...?	Сколько...? (с неисчисляемыми существительными)
How often...?	Как долго...?
How far...?	Как часто...?
How old...?	Как далеко...?
	Сколько лет...?

While asking a special question, it is a general question that is taken into account. For example, a general question to the sentence “She passed her exams successfully” is “Did she pass her exams successfully?” In order to turn this general question into a special question, just add any interrogative word to the beginning of the sentence: “**How** did she pass her exams?” or “**What** did she pass successfully?”

*Examples of special questions:*

1. Where does that lady keep her jewellery?
2. What should you do if you are lost?
3. How is Kevin?
4. When were you born?
5. Whose book is this?
6. What subject do you like?
7. How far from the university do you live?
8. How long have you been studying English?
9. How old is your little sister?
10. How often can you visit your grandparents?

### **3. QUESTIONS TO THE SUBJECT**

A question to the subject deserves a special attention. It is different from special questions because **no auxiliary verb** is used in this type of questions. You should just change the subject of the sentence into *what* or *who*.

So, the word order in a question to the subject is:

**Wh → verb → other parts of the sentence?**

It is important here not to confuse a question to the subject with a special question beginning with *what* or *who*.

*Examples of questions to the subject:*

1. What happened to you?
2. Who went to the zoo?

*Compare with those of special questions:*

1. Who are you seeing now?
2. What are you doing?

#### **Check yourself**

**Put the words in the correct order.**

1. Who / about / you / it / ? / told /
2. ? / called / Who / yesterday / her /
3. tell / about / Who / ? him / can / her /
4. yet / hasn't / book / read / this / Who / ? /
5. ? / has / to / What / happened / you /

Keys:

1. Who told you about it?
2. Who called her yesterday?
3. Who can tell him about her? Who can tell her about him?
4. Who hasn't read this book yet?
5. What has happened to you?

#### 4. TAG QUESTIONS (or DISJUNCTIVE QUESTIONS or TAIL QUESTIONS)

A tag question is made up of two parts: the first part is an affirmative or a negative sentence, the second part is a short question (tag) either positive or negative. The second part is separated from the first part with a comma (запятая). These types of questions are very popular in everyday English. They are not asked directly still they encourage an interlocutor (собеседник) to an answer. The “tags” are usually translated into Russian as “не так ли”, “не правда ли”, “да”, “правильно”.

*Examples of tag questions:*

1. He looks after his sister, doesn't he?
2. A girl fell into the river, didn't she?
3. The guests will come tomorrow, won't they?
4. An army officer must wear a uniform, mustn't he?
5. The secretary has been typing the letters for two hours, hasn't she?
6. Paul doesn't like his new job, does he?
7. John isn't paying for his lessons, is he?
8. These girls cannot speak French, can they?

As we can see from the examples that in the “tag” there is an auxiliary or a modal verb, which we use, in the first part and a pronoun which is the subject of the first part. It is also important to know that if the first part is positive, then the second part is negative and vice versa (наоборот).

#### **Check yourself**

**Choose the correct letter.**

1. The children are happy, ...?  
a) aren't they                      b) don't they                      c) are they
2. She is your best friend, ...?  
a) isn't she                          b) won't she                          c) doesn't she
3. There are many plates in the cupboard, ...?  
a) isn't it                              b) aren't there                      c) are there
4. They could read the notice, ...?  
a) could they                          b) couldn't they                      c) can't they
5. Open the book at page 20, ....?  
a) will you                              b) wasn't he                              c) didn't you

6. Each parent worries about their children, ...?  
a) don't they                      b) doesn't he                      c) isn't he
7. She hasn't put an advertisement in a paper, ...?  
a) hasn't she                      b) does she                      c) has she
8. Many people don't know about this new shop, ...?  
a) don't they                      b) do they                      c) are they
9. Nobody will come to the beach tomorrow, ...?  
a) won't they                      b) will they                      c) will he
10. He never wakes up before 10 o'clock, ...?  
a) does he                      b) doesn't                      c) isn't he

Keys: 1a, 2a, 3b, 4b, 5a, 6b, 7c, 8b, 9b, 10a.

## 5. ALTERNATIVE QUESTIONS

An alternative question implies a choice between two people, things, actions, etc. This question can be asked to any part of the sentence. It is made up of two parts: the first part is a general question, the second part contains "or" and the word of choice.

*Examples of alternative questions:*

1. Do you live in Tomsk *or* Moscow?
2. Is she a student *or* a school girl?
3. Did you wake up at 6 *or* at 7 o'clock?

### Check yourself

**Identify the type of questions. Choose the correct letter (A–E).**

1. Does she like to ride a bicycle in the evening?  
A) a general question  
B) a special question  
C) a question to the subject  
D) a tag question  
E) an alternative question
2. Who can help us to wash the car?  
A) a general question  
B) a special question  
C) a question to the subject  
D) a tag question  
E) an alternative question

3. This sportsman is very fast, isn't he?
  - A) a general question
  - B) a special question
  - C) a question to the subject
  - D) a tag question
  - E) an alternative question
4. Do they speak English or German?
  - A) a general question
  - B) a special question
  - C) a question to the subject
  - D) a tag question
  - E) an alternative question
5. Who are we waiting for?
  - A) a general question
  - B) a special question
  - C) a question to the subject
  - D) a tag question
  - E) an alternative question
6. Why are you late?
  - A) a general question
  - B) a special question
  - C) a question to the subject
  - D) a tag question
  - E) an alternative question
7. That house is under construction, isn't it?
  - A) a general question
  - B) a special question
  - C) a question to the subject
  - D) a tag question
  - E) an alternative question
8. What was the weather like all the time?
  - A) a general question
  - B) a special question
  - C) a question to the subject
  - D) a tag question
  - E) an alternative question

9. Who doesn't understand the rule?
- A) a general question
  - B) a special question
  - C) a question to the subject
  - D) a tag question
  - E) an alternative question
10. Who will meet the foreign delegation?
- A) a general question
  - B) a special question
  - C) a question to the subject
  - D) a tag question
  - E) an alternative question

Keys: 1a, 2c, 3d, 4e, 5b, 6b, 7d, 8b, 9c, 10c.

## CONDITIONALS

\* **Conditionals** are clauses introduced with *if*.

\* The main types of conditionals are: **Type 0, Type 1, Type 2 and Type 3.**

\* **Type 0 Conditionals** are used to express a general truth or scientific fact. We can use *when* instead of *if* in this case.

\* **Type 1 Conditionals** (real present) are used to express real or very probable situations in the present or future. We can use *when* instead of *if*. *If* means that something may happen. *When* means that something will definitely happen.

*If he calls, I'll tell him the news. (but he might not call)*

*When he calls, I'll tell him the news. (he will definitely call)*

\* **Type 2 Conditionals** (unreal present) are used to express imaginary situations which are contrary to facts in the present and, therefore, are unlikely to happen in the present or future. We can use *were* instead of *was* for all persons in the if-clauses.

\* **Type 3 Conditionals** (unreal present) are used to express imaginary situations which are contrary to facts in the past. They are also used to express regrets or criticism.

\* We can form conditionals by using words or expressions such as *unless (=if not)* (Type 1 conditionals), *providing/provided that, so/as long as, suppose/supposing, on condition that*, etc.

### TYPES OF CONDITIONALS

Type	If-clause	Main clause
<b>0</b>	<b>If + present simple</b>	<b>present simple</b>
<i>If/When the sun shines, snow melts.</i>		
<b>1</b>	<b>If + present simple/present cont./present perfect/present perfect cont.</b>	<b>future/imperative/can/may/might/must/should/could present bare infinitive</b>
<i>If he doesn't pay the fine, he will go to prison. If you need help, come and see me. If you have finished your work, we can have a break.</i>		
<b>2</b>	<b>If + past simple or past Continuous</b>	<b>would/could/might + bare infinitive</b>
<i>If I had time, I would take up a sport. (but I don't have time-untrue in the present) If I were you, I would talk to your parents about it. (giving advice)</i>		
<b>3</b>	<b>If + past perfect or past perfect continuous</b>	<b>would/could/might + have + past participle</b>
<i>If she had studied harder, she would have passed the test. If he hadn't been acting so foolishly, he wouldn't have been punished.</i>		



## EXERCISES

### 1. Make sentences with **if** (Type 1 conditional).

**Example:** I'm afraid the bus will be late.

→ get to work late again *If the bus is late, I'll get to work late again.*

→ lose my job *If I get to work late again, I'll lose my job.*

1. → not find another job .....
2. → lose my flat .....
3. → move back to my parents' house .....
4. → get very bored .....
5. → go swimming every day .....
6. → look very good .....
7. → meet interesting people .....
8. → go to lots of parties .....
9. → have a wonderful time .....
10. → be happy .....

### 2. Fill in the gaps with *if* or *unless*.

1. ... the weather is bad, we'll be late for the meeting.
2. ... you hurry up, you will miss the train.
3. ... you go there by plane, you won't reach the destination in time.
4. Your holiday on board the ship will be truly adventurous and enjoyable ...  
you have any sailing skills.
5. ... you phone me on the arrival day, I'll get upset.
6. It will take you less time ... you sail from Hong Kong to England via Singapore.
7. ... you look at their company's website, you won't get relevant information.
8. You'll have to pay a fine ... you're caught without a ticket.
9. Children can't go in ... they are with an adult.
10. You can't park here ... you don't live in this street.

### 3. Put the verbs in brackets into the proper tense. (Type 1 Conditional)

1. You will get the feel of Sydney if you ... (go) about on foot.
2. If you go abroad, you ... (need) to change your money into local currency.
3. Unless the accommodation ... (be) reasonably-priced, we won't afford it.
4. The town will accommodate more holiday makers if they ... (construct) a new hotel.
5. If you ... (not/wear) a dress or skirt, you won't be let into the temple.

6. If you come to New York, you ... (experience) the excitement of one of the busiest cities in the world.
7. Unless cars ... (be allowed) in the city centre, I'll have to look for a car park in the suburbs.
8. If there ... (not be) any seats available, we'll stay here.
9. If it rains, we ... (have) the party inside.
10. If I ... (not be) free tomorrow evening, I'll see you on Friday.

#### 4. Put the verbs in brackets into the proper tense. (Type 2 Conditional)

1. We ... (need) a car if we lived in the country.
2. If we had a choice, we ... (go) on a sailing tour.
3. I wouldn't mind going abroad if I ... (have) enough money.
4. I think there are too many cars. If there ... (not/be) so many cars, there ... (not/be) traffic congestions.
5. If you ... (live) nearer, we would visit you more often.
6. We ... (go) on a tour by plane, if we could afford it.
7. If I were you, I ... (not/buy) that car.
8. We wouldn't reach this area, if we ... (not/go) by boat.
9. If dogs ... (can talk), they would tell some interesting stories.
10. If he ... (not travel) so much, he'd have more money.

#### 5. Choose the correct form of the verbs.

1. If I visited Brazil, I definitely *will see/would see* the Carnival show.
2. We *will go/would go* to a campsite if the weather *is/will be* nice.
3. Unless there *were/is* a large hole in the tent, we *won't feel/will feel* comfortable.
4. If she *didn't take/doesn't take* any food along, she *is/will be* very hungry.
5. The trip *will be/would be* far more enjoyable for everyone unless the weather *is/weren't disgusting*.
6. If they *will go/go* on the "all-in" package tour, it *includes/will include* everything from food and drinks to entertainment and excursions.
7. If they *take traveller's cheques/will take traveller's cheques*, they *will be able to exchange/will can exchange* them for local money when they *arrive/will arrive* in the foreign country.
8. Unless you exceed the maximum luggage allowance, you *will pay/won't pay* an extra charge.
9. If I could find my camera, I *will take/would take* your photo.
10. Unless Pete *comes/will come*, we *won't play/wouldn't play* this game.

**6. Write these sentences, putting the verbs in brackets into the correct form and adding *will* or *would*.**

**Example:** If you give me your phone number, I ...*will call*. (call) you.  
I ...*would drive*. (drive) to work if I had a car.

1. If I ... (lose) my job, I'd go back to university.
2. If it ... (rain) tomorrow, we'll cancel the barbecue.
3. Where would you live if you ... (can) choose?
4. If the weather ... (be) good, we often have lunch outside.
5. My mother ... (worry) about me if I didn't phone her every week.
6. If you finish before 5 o'clock, I ... (come) and pick you up.
7. If we ... (hurry), we'll get to the shops before they close.
8. I don't know what she ... (do) if she couldn't go on working.
9. What would you do if he ... (ask) you to marry him?
10. He always ... (complain) if I'm late.

**7. Match the two halves of these sentences.**

1. If the car broke down in the mountains, ...g ...	a) we would turn back.
2. If we forgot our passports, ...	b) you would catch up with me.
3. If we set off at dawn, ...	c) we will catch the early train.
4. If you rode the bike faster, ...	d) you would enjoy camping.
5. If you could put up with the insects,	e) we'll have to go home soon.
6. If we run out of money after a week, ...	f) there'll be plenty of opportunities to take photos of wild animals.
7. If I checked in my luggage quickly,	g) I wouldn't be able to repair it.
8. If you go on a safari tour, ...	h) I would have some coffee then.

**8. Fill the gaps in the sentences, using the words given.**

1. If I had more money, ... (I/stay) at a luxurious hotel.
2. If you wanted to buy someone a really good present, what sort of things ... (you/look for)?
3. How ... (you/feel) if you were in my position?
4. If I were you, ... (I/spend) the holiday in the countryside.
5. If you stay at one of these suites, ... (it/cost) you thousands of pounds per a single night.
6. If ... (you/go) on a seaside holiday, it would value for money.
7. If we went by air-conditioned coach, ... (we/feel) much more relaxed.
8. If ... (hitchhiking/not/be) so dangerous, it would be widely spread among young people.
9. Alex will finish his work on time if ... (he/not talk) so much.
10. If the programs ... (be) better, I'd watch more TV.

**9. Complete the following sentences with your own ideas.**

1. What will you do if you *miss your plane*?
2. If I didn't arrive in time, they .....
3. What would happen if I .....
4. If he listened to my advice, he .....
5. Would you sell your car if .....
6. If I knew where to go, I .....
7. They wouldn't mind if we .....
8. If I were late for the appointment, I .....
9. If Alice were here, we .....
10. If we had bikes, .....

**10. Put the correct verb form (Type 3 Conditional).**

**Example:**

If I ... (be) here yesterday, I would have come to see you.

If I *had been* here yesterday, I would have come to see you.

1. If Joe ... (work) harder, he would have passed the exams.
2. If you ... (take) a map with you, you wouldn't have got lost.
3. We would have won the game if we ... (not play) so badly.
4. ... you ... (crash) if you had driven more slowly?
5. You ... (not sleep) badly if you hadn't drunk all that coffee.
6. If you ... (come) on holiday with us, you ... (have) a wonderful time.
7. If my car ... (not break down), I ... (be) here at 8 o'clock.
8. ... you ... (study) harder at school last year if you ... (like) the teachers?
9. She ... (not get) married if she ... (not want) to leave home.
10. ... you ... (help) me if I ... (ask) you?

**11. Put the correct verb form (Type 1, 2, 3 Conditionals).**

1. What would you do if you ... (see) a vandal destroying a painting?
2. I ... (go) out if unless I'm so tired.
3. You'll miss the train if you ... (wake up) late.
4. If I were you, I ... (change) the route of travelling.
5. If I had been more careful, you ... (visit) your old granny then.
6. You won't find the accommodation if you ... (not/reserve) it in advance.
7. Unless you take an umbrella, you ... (get) wet.
8. If ... you, I would call the receptionist.
9. If you ... (not/fly) via Novosibirsk, it would have taken you more time.
10. If he ... (not/leave) immediately, he'll miss his flight.

## WISHES

	Form	Use
<b>I wish (If only)</b> (wish/regret about the present)	+ <b>Past tense</b>	Wish/regret about a present situation we want to be different
<i>I wish you <b>worked</b> harder this term. (It's a pity you don't work hard)</i>		
<b>I wish (If only)</b> (wish/regret about the present)	+ <b>could + bare Infinitive</b>	Wish/regret in the present concerning lack of ability
<i>I wish I <b>could speak</b> English fluently. (But I can't)</i>		
<b>I wish (If only)</b> (wish/regret about the past)	+ <b>Past Perfect</b>	regret that something happened or didn't
<i>I wish I <b>had visited</b> my parents last holidays. (But I didn't. It's a pity I didn't visit them)</i>		
<b>I wish (If only)</b> (impossible wish for a future change)	+ <b>subject+would+bare Inf.</b> ('wish' and 'would' should have different subjects)	wish for a future change unlikely to happen or wish to express dissatisfaction; polite request implying lack of hope
<i>I wish <b>he would drive</b> more carefully. (But I don't think he will) I wish <b>the children would be</b> more co-operative. (The children have refused to co-operate. – dissatisfaction) I wish <b>you would be</b> more patient with Jim. (Please be more patient with him! – request implying lack of hope)</i>		

\* In wishes, we go one tense back. This means that we use the **Past Simple in the present or the Past Perfect in the past.**

*He's ill. He wishes he **weren't** ill. (present)*

*I overslept yesterday. I wish I **hadn't** overslept yesterday. (past)*

\* **After I wish we can use were instead of was in all persons.**

*I wish I **was/were** richer.*

\* **If only means the same as I wish but it is more dramatic.**

*If only I **was/were** richer.*

### 12. Fill in the gaps with an appropriate auxiliary verb.

**Example:** She can't type but she wishes she ... *could* ... .

1. They didn't buy the antique vase but they wish they ... .
2. I'm not going to the concert but I wish I ... .

3. I'm not very tall but I wish I ... .
4. I didn't go to the meeting but I wish I ... .
5. I can't tell him the truth but I wish I ... .
6. I don't earn much money but I wish I ... .
7. She won't accept help but I wish she ... .
8. They haven't got any children but they wish they ... .
9. I didn't see the program but I wish I ... .
10. I don't live close to the University but I wish I ... .

**13. Complete these sentences with the correct form of the verb in brackets. Some sentences require a negative.**

1. Bruce wishes he ... (have) more money so he could buy a new sweater.
2. I wish it ... (snow) now that it's Christmas.
3. I wish I ... (be) taller so that I could be in the basketball team.
4. I wish you ... (stop) watching television while I am talking to you.
5. I wish you ... (do) that. It annoys me.
6. I wish the holidays ... (come) so we could go off to the seaside.
7. I wish they ... (build) that block of flats right in front of our window.
8. Of course Tom wishes he ... (come) with us to Paris, but he has to stay here and work.
9. I wish we ... (go) to the match on Saturday but we are visiting my uncle instead.
10. If only I ... (lose) all my money. Now I'm broke.

**14. Here are some problems in the brackets. How could they have been avoided? Use the words and phrases to help you write two sentences about each problem using *I wish* and *If only*.**

a) keep mouth shut, b) eat less, c) tell the news, d) waste water, e) drive carefully, f) keep calm, g) lose temper, h) use bins, i) take more exercise, j) take rubbish, k) recycle more paper, l) come earlier, m) save water, n) protect the forests, o) let someone else drive, p) use cars less often, q) be more disciplined for a change, r) walked more, v) play fewer computer games, w) watch less TV

1. (I've gained a lot of weight.) <i>I wish</i> ..... <i>If only</i> .....	6. (We are cutting down too many trees.) <i>I wish</i> ..... <i>If only</i> .....
2. (The rivers and reservoirs have dried up.) <i>I wish</i> ..... <i>If only</i> .....	7. (People use their cars when they don't need to.) <i>I wish</i> ..... <i>If only</i> .....
3. (He crashed his car.) <i>I wish</i> ..... <i>If only</i> .....	8. (Children don't read enough nowadays.)

4. (He had a row with his best friend.) <i>I wish</i> ..... <i>If only</i> .....	<i>I wish</i> ..... <i>If only</i> .....
5. (People drop litter in the street.) <i>I wish</i> ..... <i>If only</i> .....	9. (Now Mary knows everything.) <i>I wish</i> ..... <i>If only</i> .....
	10. (Peter is always late.) <i>I wish</i> ..... <i>If only</i> .....

## PROGRESS CHECK TEST 2 (*Conditionals*)

### 15. Choose the correct item.

1. The children always ... frightened if they watch horror films.  
a) would get                      b) will get                      c) get
2. I don't know what I'd do if John ... in an accident.  
a) were                              b) is                              c) will be
3. There ... trouble if they try to stop him leaving.  
a) would be                      b) is                              c) will be
4. Can I take the typewriter if you ... with it?  
a) will finish                      b) would finish                      c) finish
5. Shout if you ... anything unusual.  
a) see                              b) would see                      c) will see
6. If you ... the car, it will never break down.  
a) will look after                      b) look after                      c) would look after
7. If you ... that program, you would have enjoyed it.  
a) watched                      b) had watched                      c) would watch
8. If he weren't so bad-tempered, his wife ... him so soon after the marriage.  
a) won't leave                      b) didn't leave                      c) wouldn't leave
9. I ... if I'd known he was so ill.  
a) won't go out                      b) wouldn't have gone out                      c) wouldn't go out
10. What ... you ... if I offered you a job?  
a) will ...say                      b) would ... say                      c) would have said
11. Tell me if there ... anything wrong.  
a) is                              b) will be                      c) would be
12. The engine will start if you ... this key.  
a) will turn                      b) turn                      c) would turn
13. If John had come to the football match, he ... it.  
a) would have liked                      b) will like                      c) would like
14. I'll go home as soon as I ... my work.  
a) carry out                      b) will carry out                      c) would carry out
15. We won't have the meeting tomorrow unless everybody ...  
a) will agree                      b) agree                      c) agrees

## Keys to grammar exercises

### THE PASSIVE VOICE

**1 Keys:** to be asked, to be read, to be written, to be invited, to be drunk, to be eaten, to be smoked, to be driven, to be seen, to be sent, to be informed, to be built, to be published, to be helped, to be advised, to be given, to be brought, to be spoken.

**2 Keys:** 1. Много книг публикуются в России. 2. Машины проверяются полицией. 3. Меня всегда подвозит на работу мой сосед. 4. Машины проверяют перед их использованием. 5. Машину полируют раз в три месяца. 6. Бетон готовят из цемента, песка и гравия. 7. Пикник проводится один раз в месяц нашим клубом. 8. Эти ворота не красят каждый год. 9. Меня не приглашают к дяде каждые выходные. 10. Его не спрашивают на каждом уроке.

**3 Keys:** 1. I invite – I am invited. 2. He sends – He is sent. 3. She tells – She is told. 4. They inform – They are informed. 5. A worker builds – The house is built. 6. The writer writes a book – The book is published. 7. The student writes an exercise – The exercise is written. 8. The students help – The students are helped. 9. We ask questions – We are asked the questions. 10. I give some advice – I am given some advice.

**4 Keys:** 1. Выбрали лучшую машину. 2. На прошлой неделе украли мой велосипед. 3. Вызвали полицию. 4. Книгу закончили читать вчера. 5. Митинг проводился в понедельник. 6. Его не пригласили на вечеринку. 7. Их представили моему другу. 8. Меня посетил учитель на прошлой неделе. 9. Много вопросов было задано нам на уроке. 10. Письма были принесены почтальоном.

**5 Keys:** 1) will be shown; 2) will be cleaned; 3) will be introduced; 4) will be painted; 5) won't be fed; 6) won't be bothered; 7) will be invited; 8) will be allowed; 9) will be asked; 10) will be written.

**6 Keys:** 1) was founded; 2) is played; 3) will be finished; 4) will be received; 5) was given; 6) was broken; 7) will be told; 8) was taken; 9) will be published; 10) are sent.

**7 Keys:** 1) is still being discussed; 2) was being built; 3) was being asked; 4) is being explained; 5) was being made; 6) is being examined; 7) is being broadcast; 8) is/was being listened; 9) will be watered; 10) are being looked.

**8 Keys:** 1. Новая станция метро строится на нашей улице. 2. Когда вы вошли в лабораторию, испытывали прибор. 3. Этот вопрос не связан



с проблемой, которая обсуждается сейчас. 4. Много разнообразных машин для промышленности производится на нашем заводе. 5. Художественная выставка молодых художников широко комментируется прессой. 6. Машины, выпускаемые на этом заводе, используются в сельском хозяйстве. 7. Шедевры из нашего музея экспонировались в разных городах в июле прошлого года. 8. Его ждут. 9. Пока выполнялся эксперимент, никто не покидал лабораторию. 10. Оратора слушали с огромным вниманием.

**9 Keys:** 1) is being asked; 2) was being typed; 3) will be translated; 4) is ... illustrated; 5) will be laughed; 6) is ... being worked; 7) is ... being looked; 8) are spoken; 9) will be followed; 10) was sent.

**10 Keys:** 1. Вступительная речь была произнесена мистером Брауном. 2. Том сказал, что условия работы намного улучшились. 3. Проект был представлен на комиссию. 4. Он спросил меня, был ли я приглашен на вечеринку. 5. Проект подготовят ко вторнику. 6. Огромное внимание было уделено дальнейшему улучшению жизненных условий людей. 7. Она сказала, что ее поэмы посвящены молодежи. 8. Этими молодыми художниками была получена хорошая художественная подготовка. 9. Ее прослушали с огромным вниманием.

**11 Keys:**

1. I was taken by him for a walk. 2. Your telephone number won't be forgotten by her. 3. Tickets will be booked by us tomorrow. 4. She was met by us at the corner of the street. 5. Such problems were discussed at our meetings. 6. A new cinema is being built in his street. 7. That beautiful building was designed by a young architect. 8. My friend was rung up by me. 9. The translation has just been done by me. 10. The examinations will have been passed by February.

**12 Keys:** 1. The politician is being interviewed now. 2. The Mona Lisa was painted by Leonardo da Vinci. 3. My flat was burgled last night. 4. All tickets had been sold before we got there. 5. The dog hasn't been fed yet. 6. The presents are being wrapped now. 7. The prizes will be awarded by President tomorrow. 8. Tea is grown in India. 9. The prisoners are being taken to prison now. 10. The book will have been read by next week.

**13 Keys:** 2) with; 3) by; 4) with; 5) with; 6) by; 7) by; 8) with; 9) with; 10) by.

**14 Keys:** 2) is believed; 3) is hoped; 4) will be visited; 5) has been planned; 6) has only been made; 7) hasn't been finished; 8) is thought; 9) will have been completed; 10) can be booked; 11) is claimed; 12) was bought; 13) is provided; 14) is paid.

## PROGRESS CHECK TEST 1 (The Passive forms)

**15 Keys:** 1) c; 2) b; 3) a; 4) c; 5) b; 6) c; 7) c; 8) b; 9) a; 10) a; 11) c ;12) c; 13) b; 14) a; 15) b; 16) c; 17) c; 18) b; 19) c; 20) a; 21) b; 22) c; 23) b; 24) a; 25) b; 26) a; 27) c; 28) c; 29) b; 30) c.

## CONDITIONALS

**1 Keys:** 1. If I lose my job, I won't find another job. 2. If I don't find another job, I'll lose my flat. 3. If I lose my flat, I'll move back to my parents' house. 4. If I move back to my parents' house, I'll get bored. 5. If I get bored, I'll go swimming every day. 6. If I go swimming every day, I'll look very good. 7. If I look very good, I'll meet interesting people. 8. If I meet interesting people, I'll go to lots of parties. 9. If I go to lots of parties, I'll have a wonderful time. 10. If I have a wonderful time, I'll be happy.

**2 Keys:** 1) If; 2) Unless; 3) Unless; 4) if; 5) Unless; 6) if ; 7) Unless; 8) if; 9) unless; 10) if.

**3 Keys:** 1) go; 2) will need; 3) is; 4) construct; 5) don't wear; 6) will experience; 7) are allowed; 8) aren't; 9) will have; 10) am not.

**4 Keys:** 1) would need; 2) would go; 3) had; 4) weren't, wouldn't be; 5) lived; 6) would go; 7) wouldn't buy; 8) didn't go; 9) could talk; 10) didn't travel.

**5 Keys:** 1) would see; 2) will go, is; 3) are, will feel; 4) doesn't take, will be; 5) will be, is; 6) go, will include; 7) take traveller's cheques, will be able to exchange; 8) won't pay; 9) would take; 10) comes, won't play.

**6 Keys:** 1) lost; 2) rains; 3) could; 4) is; 5) would worry; 6) will come; 7) hurry; 8) would do; 9) asked; 10) complains; 11) would tell; 12) will meet; 13) have; 14) am/'m; 15) spoke; 16) won; 17) closed; 18) comes; 19) is; 20) was/were.

**7 Keys:** 2) a; 3) c; 4) b; 5) d; 6) e; 7) h; 8) f.

**8 Keys:** 1) I would stay; 2) would you look for; 3) would you feel; 4) I would spend; 5) it will cost; 6) you went; 7) we would feel; 8) hitch-hiking weren't; 9) doesn't talk; 10) were.

## 9 Student's individual answer

**10 Keys:** 1) had worked; 2) had taken; 3) hadn't played; 4) would you have crashed; 5) wouldn't have slept; 6) had come, would have had; 7) hadn't

broken down, would have been; 8) Would you have studied, had liked; 9) wouldn't have got, hadn't wanted; 10) Would you have helped, had asked.

### **11 Keys:**

1. I would go out unless I were so tired. 2. Why don't change the route of travelling? 3. You'll miss the train if you wake up late. 4. If I were you I would visit your old granny. 5. You won't find the accommodation unless you reserve it in advance. 6. If you don't take an umbrella, you will get wet. 7. If I were you, I would call the receptionist. 8. Unless you fly via Novosibirsk, it will take you more time. 9. It's the last time I've used that travel agent. 10. You'll miss your flight unless you leave right away. 11. I'll have a hot shower as soon as I get to the hotel. 12. Children can visit the gallery as long as they are accompanied by an adult. 13. The museum will only be able to buy that sculpture provided that the government makes a contribution. 14. I'm sure I'll never understand this painting, however much you keep explaining it to me. 15. Whatever exhibition is on in that gallery, she always goes.

### **WISHES**

**12 Keys:** 1) had; 2) were/was; 3) was/were; 4) had; 5) could; 6) did; 7) would; 8) had; 9) had; 10) did.

**13 Keys:** 1) had; 2) would snow; 3) was/were; 4) would stop; 5) wouldn't do; 6) would come; 7) wouldn't build; weren't building; 8) could come; 9) could go; 10) hadn't lost.

**14 Keys:** 1. I wish I ate less. If only I had taken more exercise.

2. I wish people wouldn't waste water. If only people would save water.  
3. I wish he would drive carefully. If only he had let someone else drive.  
4. I wish he would keep calm. If only he hadn't lost his temper. 5. I wish people would use bins. If only they would take rubbish home. 6. I wish he would recycle more paper. If only we protected (would protect) the forests.  
7. I wish people would use their cars less often. If only people would walked more. 8. I wish children would play fewer computer games. If only children would watch less TV. 9. I wish you would keep your mouth shut. If only I hadn't told her the news.

### **PROGRESS CHECK TEST 2 (Conditionals)**

**15 Keys:** 1) c; 2) a; 3) c; 4) c; 5) a; 6) b; 7) b; 8) c; 9) b; 10) b; 11) b; 12) b; 13) a; 14) c; 15) c.

## APPENDIX 1

### Рекомендации по написанию аннотации английского текста

#### (Abstract)

#### Рекомендуемый объем аннотации — 150–200 слов.

Аннотация к тексту включает только самые основные положения и выводы, которые даются в сжатой форме.

Аннотация выполняет следующие функции:

- позволяет определить основное содержание текста (или статьи), его релевантность и решить, следует ли обращаться к полному тексту;
- предоставляет информацию о тексте (статье) и устраняет необходимость чтения его полного текста в случае, если он представляет для читателя второстепенный интерес;

В аннотации не должны повторяться предложения из текста (нельзя брать предложения из текста и переносить их в аннотацию), а также ее название.

В аннотации должны излагаться существенные факты, приведенные в тексте, и не должен содержаться материал, который отсутствует в самом тексте.

В тексте аннотации следует избегать слишком длинных предложений, а также сложных грамматических конструкций. Он должен быть лаконичен и четок.

#### Аннотация (abstract) состоит из:

1. Вводная часть – главная идея текста и основная информация (Кто? Что? Где? Когда?).
2. Основная часть – перечень затронутых в тексте проблем.
3. Заключительная часть, в которой пишущий высказывает свое мнение.

При написании аннотации следует использовать клишированные вводные слова:

#### **Вводная часть:**

The text deals with ...

As the title implies the text describes ...

The text is concerned with...

#### **Основная часть**

It is known that ...

It should be noted about/that ...

It is spoken in detail about...  
It is reported that ...  
The text gives valuable information on/about...  
Much attention is given to...  
It is shown that...  
The main idea of the text is...  
It gives a detailed analysis of...  
It draws our attention to...  
It is stressed that...

**Заключение:** оценка:

The following conclusions are drawn...  
The text gives valuable information about...

рекомендация:

The main idea of the text is ...  
The text is of great help to ...  
The text is of interest to ...

**Пример составления аннотации:**

### **Subwavelength Plasmonic Waveguides and Plasmonic Materials**

**This text is concerned with** surface plasmon based photonics materials to show possibility of creation such plasmonic device as plasmonic waveguide with new properties.

**It should be noted that** such process is still kind of obscure and requires precise investigation and research. **It is spoken in detail about** formation of plasmon-polariton metal surface as a result of extreme light irradiation and transmission through these layers. **It is shown that** free-electron model could be used for describing plasmon system inside the glass and light distribution through the plasmonic waveguide made of metal nanolayers.

**The main idea of the text** is to study surface plasmons and show opportunity to fabricate standalone devices to plasmonics, assisted by advanced simulation and fabrication tools, emphasizes the integration of plasmonic features into subsystems for all sorts of optical communications and information exchange.

**This text is of great help to** researchers involved into waveguide technologies and plasmonic waveguides devices formation.

## GLOSSARY

### A

- access (un)authorized, full, restricted) – доступ (не)санкционированный, полный, ограниченный
- access code – код доступа
- access the Internet – получить доступ в Интернет
- achieve – добиваться, достигать
- adjust – приспособливаться
- administration – администрация
- administrator – лицо, ответственное за установку и поддержание программного обеспечения
- advanced technology – улучшенная, усовершенствованная технология
- analyse – анализировать
- appearance – внешний вид, проявление
- applicant – претендент
- application – заявление
- apply for a job – устраиваться на работу
- apply for a patent / register & protect – подавать заявку на патентование изобретения, регистрировать, защищать
- appoint – назначать aptitude – способность
- architecture – структура, архитектура
- attach – прикреплять
- attend – посещать
- award – вознаграждение

### B

- back up – выполнять резервное копирование, резервное дублирование (файла, системы, диска), создавать резервную копию (данных)
- be concerned with – иметь дело с ч.-л.
- be cut off – быть отсоединенным
- be implemented – быть внедренным
- be in charge of – быть ответственным за ч.-л.
- be made of (from, out of) – быть изготовленным из
- be on the cutting / leading edge – занимать лидирующую / передовую позицию
- be responsible for – быть ответственным за ч.-л.
- be self-employed – работать на себя
- beneficial invention – благотворное, прибыльное изобретение
- benefits – льготы
- bookmark – закладка

boot / to reboot – выполнять начальную загрузку / перезагружать  
brainstorm – искать решение какой-либо задачи с помощью техники «мозгового штурма»

## С

cable – кабель

cad (computer assisted design) – система автоматизированного проектирования, САПР

cal (computer-assisted learning) – компьютерное, машинное обучение

calculator / to make calculations – вычисления / производить вычисления

call for improvement – требовать улучшения

candidate – претендент

career – карьера

career path – карьерная лестница

carry out a test – провести тестирование

casual – повседневный

CBT (Computer based training) – курсы компьютерного обучения

chairman – председатель

check viruses / virus checker – проверить вирусы

chief executive officer – исполнительный директор

civil engineering – гражданское строительство

classify, categorize materials – классифицировать материалы

brainwave – блестящая идея

branch – ветвь

bug – ошибка [в программе], сбой, дефект

click and drag – щелкнуть и перетащить

code / to do coding – кодировать, зашифровывать

come up with new ideas / invention – придумывать, создавать новые идеи, изобретения

communication skills – навыки общения

communication technology – коммуникационная технология

competences – компетенции

competitor – конкурент

component – компонент

compress / to zip (a file) – сжимать, уплотнять [данные]

comprise / to consist of – содержать в себе, состоять из

computer 3D (three-dimensional) graphics – компьютерная графика,

computer addiction – компьютерная зависимость

computer file – машинный файл

computer language – язык программирования

computer science – теория вычислительных систем

computer system / platform – вычислительный комплекс, вычислительная система / платформа  
computer technology – компьютерная технология  
computer user – пользователь компьютера  
computing – вычислительная техника  
configuration – состав оборудования, конфигурация  
conservative – консервативный  
consumer – потребитель  
copy (a file) – копировать (файл)  
copyright infringement – нарушение авторского права, контрафакция  
cordless phone – беспроводной телефон  
CPU (central processing unit) – центральный процессор  
create (a file) – создать (файл)  
create backups – создать копию  
cursor / pointer – курсор, стрелка / указатель  
customer feedback – обратная связь с потребителем, информация от потребителя  
customer services department – отдел по работе с клиентами  
customers' needs & expectations – потребности заказчика  
CV (curriculum vitae) – резюме  
cybercrime – преступления в интернете, сетевая преступность

## **D**

(double-) click on – щелкнуть (мышкой) два раза  
data processing – обработка данных  
database – база данных  
deadline – предельный срок  
deal with – иметь дело с ч.-л.  
debug a program – отлаживать программу, исправлять ошибки  
decision-making – принятие решения  
decline – уменьшаться, идти на убыль  
defragmentation / defragging – дефрагментация  
delete (a file) – удалить (файл)  
deliver – доставлять  
design – проектировать  
design brief – проектное задание, инструкция  
design requirements – технические требования  
detail drawing – подробный чертеж  
detect – обнаруживать  
develop – разрабатывать  
developer – разработчик



development – развитие  
digital technology – цифровая технология  
disc drive: CD-ROM, DVD-ROM, floppy – дисковод накопитель на дисках  
discovery – обнаружение, открытие  
distance learning – дистанционное обучение  
divide into – делить  
download / upload – скачивать файл / загружать файл  
drag and drop – перетаскать и бросить  
DTP (Desktop Publishing) – вёрстка печатных изданий на компьютере

## **E**

e-commerce – электронная коммерция  
e-currency – электронный оборот, средство денежного обращения  
edit – редактировать  
efficient – квалифицированный  
electrical engineering – электротехника  
electronic waste – электронные «отходы, потери»  
electronics – электроника  
email back – отвечать на письмо  
embedded computer – встроенный компьютер  
employ – принимать на работу  
employer – работодатель  
encourage – поощрять  
engage – обязывать, связывать обязательствами  
establish – основывать  
evaluate – оценивать  
experiment – проводить эксперименты  
explore the Web – исследовать всемирную паутину

## **F**

failure – провал  
fill in – заполнять  
fit (a new sound card) – установить (новую звуковую карту)  
flash disk drive – флэш (групповая запись) дисковод  
flat panel / LCD monitor – плоское табло / жидко-кристаллический дисплейный монитор  
flexible – гибкий  
fluctuate – колебаться, быть неустойчивым  
format – форматировать  
found – основывать

## G

general arrangement drawing – чертеж общего (полного) вида  
generate – вырабатывать  
goal-setting – постановка цели  
GPS (Global Positioning System) receiver – получатель, приемник глобальной системы навигации и определения положения  
graphic program – графическая программа  
graphics tablet – графический планшет  
ground-breaking invention – новаторское изобретение  
guidelines – рекомендации

## H

hacker – лицо, занимающееся взломом программ  
handheld, portable / PDA (Personal Digital Assistant) – переносной, портативный компьютер / персональный цифровой секретарь  
handwriting / voice / face / gesture recognition – распознавание почерка / голоса / лица / жеста  
hard disc drive – накопитель на жестких дисках  
hardware – аппаратные средства, «железо»  
hi(gh)-tech / low-tech – высокая / низкая технология  
high-quality / low-quality – высококачественный / низкокачественный  
home page – домашняя страница  
hot-key combination – сочетание «горячих клавиш»

## I

icon – значок; образ  
implement a quality control program / system – внедрять программу / систему контроля качества  
implementation – реализация, внедрение  
import a picture / image into a file – импортировать, заимствовать картинку / образ в файл  
include – включать в себя  
information technologies – информационные технологии  
initiative – инициатива  
innovation – инновация  
input – ввод  
input / output devices – устройства, механизмы входа (ввода) и выхода (вывода)  
insert – вставлять, вкладывать  
install (the latest version of Office) – устанавливать последнюю версию Офис

installation (full / typical / custom) – инсталляция (полная, типичная, сделанная по заказу клиента)

intellectual property – интеллектуальная собственность

Intranet – корпоративная локальная сеть

invest – вкладывать капитал, инвестировать

## **Ж**

judge – судить

## **К**

keypad – дополнительная клавиатура

know-how – знание дела, владение технологией

## **Л**

LAN (local area network) – локальная сеть, глобальная сеть

laptop (computer) / notebook / netbook – портативный компьютер

launch – запускать

layout – схема расположения, размещения

licence – лицензия

links / hyperlinks – ссылки / гипертекстовые связи

log in – войти в систему, зарегистрироваться

log off / out – выйти из системы, завершить сеанс работы

login (to log in) – начало сеанса, вход в систему

## **М**

mainframe – мэйнфрейм, главный компьютер вычислительного центра

maintenance – поддержка

maintenance / computing support – текущее обслуживание, поддержка вычислительной техники

make / achieve a breakthrough – добиться революционного достижения, прорыва

malware – вредоносное программное обеспечение

manage – руководить

manufacturer – производитель

manufacturing – производство

manufacturing technology – производственная технология

measure – измерять

measurement unit – единица измерения

mechanical engineering – механика

meet technical requirements – соответствовать техническим требованиям

memory stick – карта памяти

microchip – микросхема

missile – ракета  
move (a file) – переместить (файл)  
multimedia – мультимедийные средства (общее название компьютерных технологий, использующих аудиовизуальные средства)  
multinational company – международная компания  
multitasking – многозадачность

## N

nanotechnology – нанотехнология  
navigate – передвигаться, двигаться  
negotiate – вести переговоры  
netiquette – сетевой этикет, правила поведения в интернете

## O

objective – цель  
open / to close (a file) – открыть / закрыть (файл)  
operate – действовать  
outdated (out-of-date, obsolete) technology – несовременная, устаревшая технология  
output – выход, результат  
outstanding – выдающийся  
oversee – наблюдать

## P

PA (personal assistant) – личный ассистент  
password – пароль  
paste – вставлять  
PC (Mac) user – пользователь ПК  
PC / personal computer / desk computer – персональная вычислительная машина  
performance – выполнение  
peripherals – внешние устройства, периферийное оборудование  
persuade – убеждать  
precision (relative, extended) – (относительная, повышенная) точность, погрешность  
preliminary drawing – предварительный чертеж  
printer / plotter (ink-jet, laser) – (струйный, лазерный) принтер / плоттер  
processor – процессор  
profit – прибыль  
prototype – прототип, модель, макет  
provide – обеспечивать

purchase – приобретать  
put in extra memory – ввести дополнительную память

## Q

qualification – квалификация  
quality assurance – гарантия качества  
quality engineering – проектирование качества

## R

R&D – научно-исследовательские и опытно-конструкторские работы  
RAM (random access memory / memory), ROM (read-only memory) – оперативное запоминающее устройство, ОЗУ, постоянное запоминающее устройство ПЗУ  
reach a peak – достигнуть наивысшей точки  
remain constant – оставаться, неизменной, постоянной  
rename (a file) – переименовать (файл)  
report to – докладывать к.-л.  
requirement – требование  
research / investigation – изучение, исследование  
responsibility – обязанность, ответственность  
retail – розничная торговля  
run – однократно выполнять, прогонять (программу)  
run – руководить

## S

safety or performance testing – тестирование безопасности  
save (a file) – сохранить (файл)  
scale – масштаб, шкала, система сличения  
scanner – сканер  
scrollbar – управляющая линейка с бегунком  
security – безопасность  
select – выбирать  
send and receive e-mail – посылать и получать электронную почту  
server – сервер, обслуживающее устройство  
set objectives – устанавливать цели  
set up – регулировать, настраивать  
set up business – основывать бизнес  
setback – регресс, задержка назад (например в развитии)  
shut down – отключить (электричество), остановить  
sketch – упрощенная схема, эскиз, чертеж

software / programme / applications – программное обеспечение, программа, приложение  
software technology – технология программного обеспечения  
solve a problem – решать проблему  
sophisticated technology – сложная технология  
sound-/ graphics- / video- / network card – звуковая-, графическая-, видео-, сетевая карта  
specialise in – специализироваться на ч.-л.  
spreadsheet – крупноформатная электронная таблица  
standard / fine resolution – стандартное разрешение / высокое разрешение  
store and listen to MP3 audio files / storage devices – хранить или слушать аудио файлы мп3 (формат преобразования аудиоданных) / запоминающие устройства  
supercomputer – сверхбольшая вычислительная машина  
supervise – следить, наблюдать  
supplier – поставщик  
supply – поставлять  
surf the Internet / troll – переходить с одного сайта на другой / бродить  
surface – поверхность, плоскость  
switch on / off – включить / выключить  
switchboard – коммутатор  
synchronize data with other computers – синхронизировать данные с другими компьютерами  
scroll (up / down / left / right) – прокручивать изображение в окне (вверх, вниз, влево, вправо)

## **Т**

table / grid with columns & rows – таблица / решетка с колонками и рядами  
take a message – принимать сообщение  
take responsibility – брать на себя обязанность  
team manager – руководитель группы  
technical / design specification – техническая спецификация telecommunications technology – технология телекоммуникаций  
test procedure – процедура тестирования  
text – писать  
text box – текстовое окно  
top management – высшее руководство  
touchpad – сенсорная панель  
touch-sensitive screen – сенсорный экран  
traffic (low, high) – медленный / скоростной трафик (поток данных в передающей среде)  
transfer / transmit data – переносить / перемещать данные

## U

upgrade – модернизировать, совершенствовать, наращивать возможности компьютера

up-to-date / modern technology – отвечающая современным требованиям, современная технология

USB (Universal Serial Bus) – универсальная последовательная шина, шина USB

user interface – пользовательский интерфейс

user name / user ID / login name – имя пользователя

## V

VDU (visual display unit) – монитор [компьютера], экран которого используется компьютером для вывода текстов и графики

virtual reality – возможная действительность

virus – вирус

visit a website – посетить веб-сайт

voicemail – голосовая почта VoIP (Voice over Internet Protocol)

IP Telephony – передача голоса по IP-протоколу / Интернет протокол телефония

wireless technology – беспроводная технология

wires – провода

word processing – электронная обработка текста

word-processing program – программа электронной обработки текста

work flexi time – работать по гибкому графику

work out – решать

work overtime – работать сверхурочно

work station – автоматизированное рабочее место, АРМ

working drawing – рабочий (действующий) рисунок

World Wide Web (the Web) – всемирная паутина

## W

warehouse – склад

Wi-Fi (Wireless Fidelity) – беспроводной доступ (в интернет)

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