МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ ФЕДЕРАЦИИ

ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ ОБРАЗОВАТЕЛЬНОЕ
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«САМАРСКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ»

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Структурно пособие состоит из нескольких разделов, приложения (проверочные задания) и списка используемой литературы. Каждый из разделов направлен на отработку стратегий выполнения определенных заданий: unit I – Gapped Text (восстановление текста), unit II – Word Formation (словообразование), unit III – Information Classification and Sequencing (классификация и установление последовательности), unit IV – True/False Statements (верные/неверные утверждения), unit V – Multiple Choice (множественный выбор), что достигается путем последовательной отработки алгоритма выполнения типовых заданий. В конце представлен вариант тестовых заданий, позволяющих проверить и определить уровень сформированности отработанных умений.

Пособие состоит из различных типов аутентичных текстов, объединенных компьютерной тематикой. Все виды заданий формируют аналитические умения (анализ, синтез, классификация, сравнение, сопоставление).

Учебное пособие можно использовать на занятиях под руководством преподавателя или для самостоятельной работы студентов в качестве дополнения к основным учебникам.

Предназначено для студентов 1–2 курса по направлению подготовки «Прикладная математика и информатика» (010400.62), «Информационная безопасность» (090900.62), «Математическое обеспечение и администрирование информационных систем» (010500.62), для студентов 1–3 курса специальности «Компьютерная безопасность» (090301.65).

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UNIT I. Gapped Text

TASK 1

1. Scan the text and complete each gap (1 – 10) with the most suitable word.

Access threat hackers inputting theft database crimes criminals damage technology

COMPUTER CRIME

As (1) _____ has outpaced the law, it is sometimes almost impossible to prosecute computer (2)_____, which often fall into rather gray legal areas. Some fraud is straightforward; for instance, forging checks with magnetic ink character recognition (MICR) numbers at the bottom, or the false (3)_____of data. Such crimes can easily be prosecuted as forgery, (4)_____, or extortion. However, consider the case of a studio employee who sold story ideas and gossip to the tabloids. The information came from the studio's (5)_____, but there were no company guidelines on how the database should be used, so no rule had been broken. Criminal cases against (6)_____ are often lost because, although it is easy to prove intentional (7)_____, it is almost impossible to prove intentional (8)_____. Hackers contend their motivations are intellectual rather than criminal and that they are an annoyance rather than a serious (9)_____ to business. Britain has recently passed the Computer Misuse Bill and the Data Protection act in an effort to cope with computer crime. But it remains to be seen how successfully these laws will deter computer (10)_____.

TASK 2

1. Scan the text and complete each gap (1 – 11) with the most suitable verb in the correct form

Accept reduce replace re-design refuse adapt design offer present provide produce

Nowadays computers have become a necessary part of almost any professional field. They (1)_____ people and (2)_____ the number of workplaces even further. Employees who (3)_____ to use a computer will have a problem to find a job. People have to (4)_____ technological progress and try to (5)_____ (on their own and at their own expense).Computer technology has (6)_____ new occupations considered unthinkable a few years ago e.g. the Internet Provider and Homepage Publisher who (7)_____ and continuously (8)_____ homepages for companies. Many firms believe it is essential for their reputation to have their own homepage on the internet to (9)_____ their products in an attractive way using the multiple opportunities of all the media. Internet thus can (10)_____ an almost unlimited opportunity for new occupations; therefore new rules and laws have to be (11)_____. Besides that there is a growing number of computer –related occupations, opening up new opportunities, e.g. CAD-Designer, Developer, Programmer.

TASK 4

1. Read the text, complete the gaps with the most suitable word in brackets.

THE INTERNET

As well as impacting on the commercial world, the Internet has had an _____ (abnormal, enormous, nominal) impact on all areas of life. While there are still people in many parts of the world who do not have _____(excess, access, assessment) to an internet connection, the majority of people in the developed world now have access either at home or at work, and have the _____(ability, option, opportunity) to use online information resources, or communicate with others using email, instant messaging or discussion groups. New online communities have developed and existing communities have_____ (credited, created, contributed) new ways of communicating. However, issues of identity and security have become a _____(concern, conclusion, concept). New technologies have engendered new types of crime, including identity _____ (theft, code, thing)

and financial frauds. These problems have fostered the development of new security technologies.

The internet has become a _____(minor, major, middle) factor in enabling information sharing and has had a huge impact on the availability of information of all kinds. Material on the internet reflects widely differing viewpoints and sources: from official news bulletins to unofficial rumours, and from commercial megastores to community portals. The internet has revolutionised the way information can be published, _____ (rising, raising, raisin) questions about the authority and regulation of content. Because of the way the internet has been designed, no individual government, company or person has control over it.

TASK 5

1. Read the text “Computer” complete the gaps (1-5) with the most suitable word combinations (a-d).

2. Find the sentences carrying the main idea of each part. Make a plan.

COMPUTER

More than a hundred years ago Charles Babbage, an English mathematician, (1)_____ an analytical engine to perform calculations. It worked in decimal numbers but it was too complicated and cumbersome to build. ENIAC, the first electronic computer also worked in decimal.

Modern devices, however, all work in binary. Binary numbers need only two symbols. An electric current not flowing is represented by 0 and a current flowing is represented by 1. (2)_____ a number is converted into a series of electric pulses. Each unit (0 or 1) is called a bit.

The modern computer has several parts. (3)_____, store (sometimes called memory) for holding numbers, both those forming the data of the problem and those generated in the course of calculations. Second, an arithmetic unit, a device for performing calculation on those numbers. Third, a control unit, a device that causes the machine to perform the required operations (4)_____. The control and arithmetic section of the computer is often called the central processing unit or CPU. Fourth, input devices whereby numbers and operations can be supplied to the machine and finally, output devices

for displaying the results of calculation. The input and output devices are called peripherals.

The equipment and machines used for input, output and storage (5)_____ the hardware. The program, which consists of the instructions telling the CPU what to do with the input, is the software.

1. a) designed b) to design
   c) has designed d) was designing
2. a) By the way b) In a way
   c) In this way d) Anyway
3. a) First b) First of all
   c) Typically d) At first
4. a) to be correct b) in order to
   c) should be corrected d) in the correct sequence
5. a) are not b) for calling
   c) are called d) so called

TASK 6

1. Read the article “History of the Future” Six sentences have been removed from the article. Choose from the sentences A-G the one which fits each gap (0-5). There is one extra sentence which you do not need to use. The first sentence is an example (0).

HISTORY OF THE FUTURE

A. If the Internet stumbles, it will not be because we lack for technology, vision, or motivation.

B. It will continue to change and evolve at the speed of the computer industry if it is to remain relevant.

C. Together with the success of the Internet a proliferation of stakeholders has come.

D. According to the resolution “Internet” refers to the global information system

E. It is evolving to permit more sophisticated forms of pricing and cost recovery, a painful requirement in this commercial world.

F. The purpose of the Internet has changed dramatically over its history.

G. It was designed before LANs existed, but has accommodated that new network technology, as well as the more recent ATM and frame switched services.

On October 24, 1995, the Federal Networking Council (FNC) unanimously passed a resolution defining the term Internet. [0/D] This system is (i) logically linked together by a globally unique address space based on the Internet Protocol (IP) or its subsequent extensions/follow-ons; (ii) is able to support communications using the Transmission Control Protocol/Internet Protocol (TCP/IP) suite or its subsequent extensions/follow-ons, and/or other IP-compatible protocols; and (iii) provides, uses or makes accessible, either publicly or privately, high level services layered on the communications and related infrastructure described herein.

The Internet has changed much in the two decades since it came into existence. It was conceived in the era of time-sharing, but has survived into the era of personal computers, client-server and peer-to-peer computing, and the network computer. [1/] It was envisioned as supporting a range of functions from file sharing and remote login to resource sharing and collaboration, and has spawned electronic mail and more recently the World Wide Web. But most important, it started as the creation of a small band of dedicated researchers, and has grown to be a commercial success with billions of dollars of annual investment.

One should not conclude that the Internet has now finished changing. The Internet, although a network in name and geography, is a creature of the computer, not the traditional network of the telephone or television industry. [2/] It is now changing to provide new services such as real time transport, in order to support, for example, audio and video streams.

The availability of pervasive networking (i.e., the Internet) along with powerful affordable computing and communications in portable form (i.e., laptop computers, cellular phones), is making possible a new paradigm of nomadic computing and communications. This evolution will bring us new applications - Internet telephone and, further out, Internet television. [3/] It is changing to accommodate another generation of underlying network technologies with different characteristics and requirements, e.g. broadband residential access and satel-

lites. New modes of access and new forms of service will spawn new applications, which in turn will drive further evolution of the net itself.

The question for the future of the Internet is not how the technology will change, but how the process of change and evolution itself will be managed. The architecture of the Internet has always been driven by a core group of designers, but the form of that group has changed as the number of interested parties has grown. [4/] Now stakeholders are with an economic and an intellectual investment in the network.

There is a struggle to find the next social structure that will guide the Internet in the future. The form of that structure will be harder to find, given the large number of concerned stakeholders. At the same time, the industry struggles to find the economic rationale for the large investment needed for the future growth, for example to upgrade residential access to a more suitable technology. [5/] It will be because we cannot set a direction and march collectively into the future.

TASK 7

1. Read an extract from the article “Does Modern Technology Affect Teens?” Six sentences have been removed from the article. Choose from the sentences A-G the one which fits each gap (1-5). There is one extra sentence which you do not need to use. The first sentence is an example (0).

DOES MODERN TECHNOLOGY AFFECT TEENS?

A. Most teens don’t even realize how modern technology has changed their lives and what it is doing to their moral values.

B. Now, these teens have ease in encoding their reports, making changes and erasures and print the final work.

C. The cell phone gives them access to persons they want instant contact, be it due to emergency, on issues that need urgent responses or mere social calls.

D. Modern technology is so engrossing that a teen feels helpless in accomplishing his daily tasks without the necessary gadgets, equipments and tools.

E. He wants to be a contributor to peace, economic reforms, the improvement of public services and many other aspects of the society.

F. But these teens must see to it that in order to help make a better future, they have to use technology for the common good.

G. Through the Internet, the teens are able to do research using the available engines resulting to earlier submission of their reports, assignments and other school requirements.

A teen wants to help change the world and make it a better place to live. [0/E]. To him, the best way contribute to these changes is through modern technology.

Before the advent of the computer, the teens spent much time and effort in using their manual typewriters and had headaches in using erasing liquids, retyping their works, crumpling their papers and throwing them to the baskets. The computer changes this. [1/]

It shortens their time, saves a lot of money for supplies and helps create presentations that wowed their teachers.

If the computer affects the teens, the Internet catapulted the teens in greater heights. The Internet revolutionized the way teens look at the world and the future. [2/] Most of all, it gives them the opportunity to interact with other teens and discuss relevant issues making them mature and real decision makers. The Internet allows them to post comments and suggestions to various organizations, government agencies and other concerned personalities, before the teens had a hard time to criticize government leaders for their shortcomings, modern technology had encouraged them to speak up and be counted. The teen wants to be heard and they got it!

Another technological breakthrough is the cell phone. Almost every teen owns a cell phone, some the lesser types, others the most advanced ones. [3/] Some TV networks had programs allotted for public announcements and interactions, and these teens express their criticisms, observations and requests for positive actions from the government. Problems are now attended to, thanks to the teens and their cell phones.

[4/] Try imagining of a day that a teen has to be late because he must go to the library but has no way of informing his parents except to scamper to the nearest public phone which might be congested of callers. Or he has to find his way over dusty bookshelves to look for the needed book. What about those teens who are really shy to stand up during forums, and instead will opt to keep silent with a big idea buzzing in his head. What a pity!

These teens really want a change, and modern technology is the answer. [5/] They must not allow these high-tech tools to enslave them, but rather, utilize modern technology its fullest for the good of mankind.

TASK 8

1. Look through the title of the text and guess what ideas the text contains. Scan the text and say why the Internet is called a big picture.

2. Read the text thoroughly. Seven paragraphs have been removed from the text. Choose from the sentences A-G the one which fits each gap (1-5). There is one extra paragraph. The first sentence is an example (0).

THE BIG PICTURE

A. Advertising suits and recruitment agencies use the term new media mainly to differentiate between the old media world – print, radio, television and so on – and new media such as electronic and digital communication methods, including the Internet, CD-ROMs.

B. As the Cold War petered out and personal computers became wide-spread, the Internet grew more publicly accessible and user friendly, with the World Wide Web emerging as a key way for non-technical people to exploit its potential.

C. Indeed, some states actively censor sites they deem problematic: in China, for example, the government temporarily banned the Google search engine when it realized that a search for the premier's name, Jiang Zemin, returned a link to an online game called "Slap the Evil Dictator".

D. On the practical level meanwhile, aspects such as software, network routing and wiring are largely controlled by corporations such as Microsoft, Cisco, AOL and the world's cable providers. There is no official body responsible for tying these elements together.

E. But the Internet is much bigger and much older - than the World Wide Web. Roughly speaking, anything you do online that doesn't involve websites is part of the Net but not part of the Web. This includes everything from video conferencing and peer-to-peer file sharing to email.

F. But that's not to say the Internet is merely something to play around on. It's also firmly entrenched in the workplace. Millions of companies use it to

promote their products, take orders and support their customers, and more business communication is done by email than via phone, fax and printed letter combined.

G. Strictly speaking, what we refer to as the Internet is actually only one of many. When a number of computers are connected together in a workplace, at home or anywhere else, they are referred to as a network. And if you connect two or more of these together - to create a network of networks - the result is “an internet”.

But for non-geeks, this is all academic. Just as there's only one sun that matters - the one that illuminates our planet - there's only one internet that matters: the giant network of computers that in the last couple of decades has revolutionized many aspects of modern life. It's this internet - the Internet, written with an uppercase ”I”.

The Internet, or the Net as it’s often called, is a real bag of tricks. You can find an answer to any question, shop the globe, send documents worldwide in a flash, hear new music, dabble in the stock market, visit art galleries, read books, play games, video chat with far-away relatives, make friends with similar interests, catch up on your latest hometown news, make phone calls, grab free software, manage your bank account - or just fritter away your spare time surfing the almost infinite content of the Web.

[0/]. The Internet consists of millions of computers connected via cables and radio waves. At the core of this giant network are a series of computers permanently joined together through high-speed connections. To connect to the Net, you simply connect your computer to any one of these networked computers via an Internet Service Provider (ISP). The moment you do this, your computer itself becomes part of the Internet. Of course, the Net is not really about the computers or the cables and satellites that string them together. It's about people, communication and sharing knowledge. Indeed, in the last decade or so, the Net has revolutionized the way we access information, stay in touch, shop the list goes on.

[1/]. On a more specific level, the Internet is different things to different users, but two activities dominate most people’s experience of it: the transfer of email and browsing the World Wide Web.

Many long-time Net users - and almost all journalists – don’t know the difference between the Internet and the Web. The World Wide Web - or simply the

Web - is the popular face of the Internet, taking the form of billions of websites, each comprising one or more webpages. In practice, browsing the Web works a bit like flicking through a huge magazine, using your mouse to click on links (or “hyperlinks”) between pages.

[2/]. No one actually “runs” the entire Internet but there are several major players who exert a great deal of influence. On the theoretical and administrative levels there is ICANN, which coordinates domain names (also called Web addresses); the Internet Society, which, among other things, acts as a clearing house for technical standards; and the World Wide Web Consortium (W3C), which mulls over the Web's future. You are unlikely to encounter any of these groups directly.

[3/]. The legal level is governed by local authorities. What's OK in one territory may be an offence in another. That means if you break a local law, you could be prosecuted - irrespective of whether you are accessing something that’s legal at the source. So just because you can download a pirated copy of PhotoShop from a Vietnamese Web server doesn’t make you immune to copyright laws at home. And while you might have the freedom to express your views about a foreign government, nationals of that state may not be so free to read it.

[4/]. The Internet was first conceived a few decades ago as a network for the American Defense Department, its primary purpose being to act as a nuclear-attack-resistant method of exchanging scientific information and intelligence. In the 1970s and 1980s several other networks, such as the National Science Foundation Network (NSFNET), jumped on board, linking the Net to research agencies and universities.

[5/]. It’s impossible to give an accurate figure, but surveys estimate that somewhere between 750 million and one billion people use the Net – that’s around one in seven people worldwide. Around ninety percent of these are split roughly equally between Europe, USA/Canada and Asia/Pacific. Of course, far fewer people are regular users.

UNIT II. Word Formation

TASK 1

1. Read the text quickly and underline the words derived from other words.
2. What parts of speech are these words?

NETWORKS

Computers in a network can be connected in different ways, in different topologies. The three basic ways of connecting computers are: a star, a ring, and a bus topology.

A star topology has a server computer at the centre and a separate cable connecting the server to each of the other computers in the network. The central server controls the flow of data in the network. If the central server fails, the whole network will fail.

In a ring topology, each computer is connected to its neighbour in a circle. The data flows in one direction round the ring. If a cable breaks or one of the computers fails, the whole network will be affected.

A bus topology has all the computers connected to a common cable. The data travels in both directions along the cable. If a computer fails, or we remove one from the network, it won't affect the other computers. Most networks are usually a combination of star, ring, and bus topologies to overcome some of these problems.

TASK 2

Choose the most suitable word form to complete each sentence and fill in the gaps.

1. *addition, added, additional, additionally*

a. When buying a system there is often no _____ charge for the programs.

b. _____ and subtraction are two basic mathematical operations.

c. Many terminals can be _____ to a basic system if the need arises.

2. *create, creating, creation, creativity*

a. The _____ of this database will give us a huge advantage over our competitors in the long run.

b. The procedure for _____ a new file is very simple.

c The new position we are advertising is going to require someone with enormous _____.

3. *generate, generated, generative, generation*

a. Exercises can be quickly _____ using the program.

b. Our company is working on a new _____ of software products.

c. This development is sure to _____ great interest.

4. *reliably, rely on, reliable, reliability*

a. If you don't know the meaning of a computer term, you cannot always _____ an all-purpose dictionary for the answer.

b. Computers are _____ machines.

c. Computers can do mathematical operations quickly and _____.

5. *access, accessed, accessible, accessibility*

a. All user requests to _____ a database are handled by the database management system.

b. _____ to the computer room is restricted to unauthorized personnel.

c.Those files are not _____ unless you know the password.

6. *difference, differ, different, differentiate*

a. The opinions of programmers as to the best way of solving a problem often _____ greatly.

b. There isn't a very big _____ in flowcharting for a program to be written in Cobol or Fortran.

c. There are many _____ computer manufacturers today, and a buyer must be able to _____ between the advantages and disadvantages of each.

7. *analyse, analysed, analysis, analyst*

a. When a text is _____, all pronouns, prepositions, conjunctions, and verb forms are automatically identified.

b. This _____ shows that most PC users are not aware of the full potential of the software products they buy.

c The DBMS first receives the request and _____ it for syntax errors.

8. *complication, complicatedly, complicated, complicating*

a. There can be many _____ involved in setting up a computer in an old building.

b. It is sometimes a very _____ process getting into a computer installation for security reasons.

c. It is very _____ to explain computer concepts.

TASK 3

1. Read the text and define what word form should be inserted in the gap.
2. Make a suitable form using suffixes and fill in the gaps.

Electronic computers have only been around for a _____ short time. They started out as very big mainframe systems that consumed a lot of power, were unreliable, and needed a team of professionals to operate and maintain them. Mainframes are still in use however and have continued to be developed. Supercomputers such as the Cray computers are the most _____ type of mainframe available today. _____ personal computers that consume a modest amount of power, are fairly _____, and can be controlled and maintained by the _____ are now very common. The _____ of network systems using personal computers has encouraged the move away from centralized systems, controlled by a large mainframe to the development of distributed systems, where _____ smaller computers share the workload and control the system. Computers are _____ to continue to become faster, _____, and more efficient	RELATE POWER SMALL RELY USE DEVELOP VARY LIKE CHEAP

TASK 4

1. Read the text and define what word form should be inserted in the gap.
2. Make a suitable form using prefixes and fill in the gaps.

Viruses are programs that have been written to make a computer behave in an _____ and _____ way.	EXPECTED, DESIRED PROVED
Computer technology has often _____ the quality of life for those who are disabled, but simply using the computer can sometimes be a problem.	MOVED
They also can be found and _____ by the same security program.	POSSIBLE
It is _____ to predict with any certainty how computers will be used in the future, but some new developments have already taken place.	AUTHORIZED
Passwords are supposed to prevent _____ users, or hackers, from breaking into the system, so they must not be easy for outsiders to guess.	COMMON
In PC systems it is also not _____ for memory problems to occur, particularly if the user is using a large number of programs at the same time.	PUTTING
For _____ information, two common devices used are a printer which prints the new information on paper, or a CRT display screen which shows the results on a TV-like screen.	INTELLIGIBLE OPENED
Data encryption is the translation of data into a form that is _____ without a deciphering mechanism.	LIKE
The browser in turn stores the cookie information on the hard drive so when the browser is closed and _____ at a later date the cookie information is still available.	CODES
Worms spread from computer to computer, but _____ a virus, it has the capability to travel without any human action.	
When the computer finds the closest match, it _____ the character in memory and displays it on the screen as if it had been typed.	

TASK 5

1. Read the text. Pay special attention to the words in capital.

2. Choose the most suitable word form and underline it.

WHAT ARE BLENDED THREATS?

A blended threat is a more sophisticated attack that bundles some of the worst aspects of viruses, worms, Trojan horses and MALICE, MALICIOUSLY, MALICIOUS code into one single threat. Blended threats can use server and Internet INVALNERABLE, VULNERABILITIES, VULNERABLY to initiate, then transmit and also spread an attack. CHARACTERISTICS CHARACTERS, CHARACTERIZE of blended threats are that they cause harm to the infected system or network, they propagates USING, USE, USABLE multiple methods, the attack can come from multiple points, and blended threats also EXPLOIT, EXPLOITER, UNEXPLOITED vulnerabilities.

To be considered a blended thread, the attack would ENORMOUS, NORMALLY, NORMAL serve to transport multiple attacks in one payload. For example it wouldn't just launch a DoS attack — it would also, for example, install a backdoor and maybe even damage a local system in one shot. ADDITIONALLY, ADD, ADDITION, blended threats are designed to use multiple modes of transport. So, while a worm may travel and spread through e-mail, a single blended threat could use multiple routes INCLUDING, EXCLUDING, INCLUSIVE e-mail, IRC and file-sharing networks.

LAST, LASTLY, LASTING, rather than a specific attack on DETERMINANCY, DETERMINE, PREDETERMINED, .exe files, a blended thread could do multiple malicious acts, like modify your exe files, HTML files and registry keys at the same time — basically it can cause damage within several areas of your network at one time.

Blended threats are CONSIDERABLY, CONSIDERED, CONSIDERATE to be the worst risk to security since the inception of viruses, as most blended threats also require no human intervention to propagate.

TASK 6

1. Scan the text below. Pay attention to the italicized words. Try to define what form they were derived from.

2. Try to make all possible parts of speech or forms of the words in italics (you can use suffixes and prefixes) as in the example.

Package – pack.

Pack (n), to pack (v), unpack, packed, packable, packing, packer, packet.

GRAPHICS AND MULTIMEDIA

A graphics *package* is used for creating and *editing* graphical images or drawings. This type of program usually has a set of icons called a toolbox to access the most *commonly* used graphics tools. It allows users to perform functions, such as creating shapes, scaling them to *different* sizes, rotating them, and *filling* them with *colour*. Simple drawings can be created *using* a combination of *pre-defined* shapes such as squares, rectangles, triangles, and ellipses.

Multimedia is a *combination* of text, graphics, animation, sound, and video. A popular multimedia encyclopaedia program created by the Microsoft Corporation is called Microsoft Encarta. The text *displayed* on the screen contains hyperlinks, i.e. words that are linked to other text. When the user clicks on a link, the linked text is displayed on the screen. Encarta also has icons for displaying maps, charts, tables, pictures, sounds, *animation*, videos, and interactive *activities*.

Computers are general purpose instruments that are controlled by programs. Present-day computers are electronic devices but the first computers were mechanical. They were *replaced* by electromechanical computers that used electrical mechanisms. The first electronic computers used electronic switches in the form of vacuum tube valves. Valves were later replaced by semiconductor transistors. The *development* of integrated circuits that contained millions of transistors in one small semiconductor chip *enabled* the development of microprocessors. This allowed much *smaller* computers, called microcomputers, to be introduced. The most *common* type of microcomputer is small enough to sit on an office desk and is often *referred* to as a desktop computer

TASK 7

1. Read the text and fill in the gaps (0-12) with the word form which suits bets. (0) is given as an example.

Computers are machines designed to process, electronically, (0) SPECIALLY (SPECIAL) prepared pieces of information which are termed data. Handling the information that has been given to the computer, in such ways as doing (1)_____ (CALCULATE), adding information or making (2)_____ (COMPARE) is called processing. Computers are made up of millions of electronic devices capable of (3)_____ (STORE) data or moving them, at enormous speeds, through complex circuits with different functions.

All computers have several characteristics in common, (4)_____ (REGARD) of make or design. Information, in the form of instructions and data, is given to the machine, after which the machine acts on it, and a result is then returned. The information presented to the machine is the input; the internal (5)_____ (MANIPULATE) operations, the processing; and the result, the output. These three basic concepts of input, (6)_____ (PROCESS), and output occur in almost every aspect of human life whether at work or at play.

Computers have often been thought of as (7)_____ (EXTREME) large adding machines, but this is a very narrow view of their function. Although a computer can only respond to a certain number of instructions, it is not a single-purpose machine since these instructions can be combined in an infinite number of sequences.

In the late 1950s and early 1960s when electronic computers of the kind in use today were being developed, they were very expensive to own and run. Moreover, their size and (8)_____ (RELY) were such that a large number of support personnel were needed to keep the (9)_____ (EQUIP) operating. This has all changed now that computing power has become portable, more compact, and (10)_____ (CHEAP).

In only a very short period of time, computers have greatly changed the way in which many kinds of work are performed. Computers can (11)_____ (MOVE) many of the routine and boring tasks from our lives, thereby., leaving us with more time for interesting, (12)_____(CREATE) work. It goes without saying that computers have created whole new areas of work that did not exist before their development.

TASK 8

1. Read the text Spyware Programs.
2. Form the derivatives of the words in capitals and fill in the gaps in the text.

SPYWARE PROGRAMS

Spyware is _____ that covertly gathers user information through the user's Internet connection without his or her _____, usually for advertising purposes. Spyware applications are typically bundled as a _____ component of freeware or shareware programs that can be _____ from the Internet; however, it should be noted that the majority of shareware and freeware _____ do not come with spyware. Once installed, the spyware monitors user _____ on the Internet and transmits that information in the background to someone else.	SOFT KNOW HIDE LOAD APPLY ACT
Spyware is not a virus, as it does not replicate itself once on your system, but it is somewhat similar to a Trojan horse in that users _____ install the product when they choose to install something else.	WITTING
Aside from the questions of ethics and privacy, spyware steals from the user by using the computer's memory _____ and also by eating bandwidth as it sends information back to the spyware's home base via the user's Internet _____. Because spyware is using memory and system resources, the applications _____ in the background can lead to system crashes or general system _____.	SOURCE CONNECT RUN STABLE
Spyware exists as _____ executable programs, so they have the ability to monitor keystrokes, scan files on the hard drive, snoop other applications, such as chat programs or word processors, install other spyware programs, read cookies, change the _____ home page on the Web browser, relaying this information back to the spyware author.	DEPEND FAULT
To help protect against malicious spyware, users can run _____ programs on their computer system. Antispyware programs are _____ to search hard drive for traces of known spyware and adware.	SPYWARE DESIGN

UNIT III. Information Classification and Sequencing

TASK 1

1. Skim the text. Find the main idea, major details, and minor details.
2. Complete the diagram.

Railway companies use large computer systems to control ticket reservations and to give immediate information on the status of their trains. The computer system is connected by private telephone lines to terminals in major train stations, and ticket reservations for customers are made through these phone lines. The passenger's name, type of accommodation, and the train schedule is put into the computer's memory. On a typical day. a railway's computer system gets thousands of telephone calls about reservations, space on other railways, and requests for arrivals and departures. A big advantage of the railway computer ticket reservation system is its rapidity because a cancelled booking can be sold anywhere in the system just a few seconds later. Railway computer systems are not used for reservations alone. They are used for a variety of other jobs including train schedules, planning, freight and cargo loading, meal planning, personnel availability, accounting, and stock control.

Main idea			
Major details			
Minor details			

TASK 2

1. Skan the text. Match the words with the definitions in the table below the text.
2. After reading the text answer the following questions.
    1. What are computers designed for?
    2. Which are the basic parts of a computer system?
    3. How does it work?
    4. Why do we use computers?
    5. Can a computer think?

INTRODUCTORY COURSE IN COMPUTER SCIENCE

The basic job of the computers is the processing of information. For this reason computers can be defined as devices which accept information in the form of instructions called a program and characters called data, perform mathematical and/or logical operations on the information and then supply results of these operations.

Every computer system consists of a processor, two forms of memory (main and auxiliary), input units and output units. These parts represent the actual physical components of a computer system and are referred to as the hardware of the system. When a computer system is operating, the components of the system are constantly interacting with each other, often resulting in the execution of millions of instructions per second by the processor. The operating system comes to help people to manage the computers.

An OS is a master control program, which controls the functions of the computer system as a whole and communicates with the user in an appropriate way. A computer can solve series of problems and make a great number of logical decisions without becoming tired or bored. It can find the solution to a problem in a fraction of the time it takes a human being to do the job. A computer can replace people in dull, routine tasks, but it has no originality; it works according to the instructions given to it and cannot exercise any value judgements. There are times when a computer seems to operate like a mechanical “brain” but its achievements are limited by the human minds.

processor	a storage device
processing	the physical components of a computer system
data	performs mathematical and logical operations
memory	internal manipulative operations with data
hardware	information processed by the computer

TASK 3

1. Scan the text and find the information how the CPU executes program instruction.

2. Put the stages in the table after the text in the correct order.

THE MACHINE CYCLE

Let us examine the way the central processing unit, in association with memory, executes a computer program. Many personal computers can execute instructions in less than one-millionth of a second, whereas supercomputers can execute instructions in less than on *e-billionth* of a second.

Before an instruction can be executed, program instructions and data must be placed into memory from an input device or a secondary storage device. The data will probably make a temporary stop in a register. As soon as the necessary data and instruction are in memory, the central processing unit performs the following four steps for each instruction:

1. The control unit *fetches* the instruction from memory.

2. The control unit *decodes* the instruction and directs that the necessary data be moved from memory to the arithmetic/logic unit. These first two steps together are called *instruction time,* or *I-time.*

3. The arithmetic/logic unit *executes* the arithmetic or logical instruction. That is, the ALU is given control and performs the actual operation on the data.

4. The arithmetic/logic unit *stores* the result of this operation in memory or in a register.

Steps 3 and 4 together are called *execution time,* or *E-time.* The control unit eventually directs memory to release the result to an output device or a secondary storage device. The combination of I-time and E-time is called the *machine cycle.*

Step	*Description*
1.	The control unit decides what the instruction means
2.	Arithmetic or logical instructions are carried out by the arithmetic/logic unit
3.	The control unit gets the instruction from memory
4.	Operation results are stored are stored in a register by the arithmetic/logic unit

TASK 4

1. Scan the text “Denial of Service Attacks”. Specify the concept of DoS Attacks.

2. Read the text again and answer the questions (a-e).

a. DoS attack is a kind of malicious attack targeted on a network, isn’t it?

b. One of the purposes of DoS attack is not let the legitimate users get access to computer network resources, is it?

c. DoS attack increases frequency and volume traffic to enormous level, doesn’t it?

d. DoS attack can result in loss of information and security, can’t it?

e. Hackers create DoS attack for computer boosting, don’t they?

3. Fill in the table after the text with the information about DoS attacks.

DENIAL OF SERVICE ATTACKS

Denial of Service, or DoS as it is often abbreviated, is a malicious attack on a network. This type of attack is essentially designed to flood network with useless traffic.

Hackers use DoS attacks to prevent legitimate uses of computer network resources. DoS attacks are characterized as attempts to flood a network, attempts to disrupt connections between two computers, attempts to prevent an individual from accessing a service or attempts to disrupt service to a specific system or person. Those on the receiving end of a DoS attack may lose valuable resources, such as their e-mail services, Internet access or their Web server. Some DoS attacks may eat up all your bandwidth or even use up all of a system resource, such as server memory.

A DoS attack may appear to be legitimate traffic on the system or network, but differs in that the volume and frequency of the traffic will increase to unmanageable levels. An attack on a Web server, for example, would a large barrage of hits in close proximity so the server cannot keep up with the sheer volume of page requests. On a mail server, hundreds of thousands of messages can be sent to the server in a short period of time where the server would normally only handle under a thousand messages in that same time period. The targeted server would most likely be brought to a halt from a DoS attack because it runs out of swap space, process space or network connections.

While DoS attacks do not usually result in information theft or any security loss for a company, they can cost an organization both time and money while

their network services are down. For the hacker, a DoS attack is usually committed for “ego boosting” purposes.

Definition	Features	Purpose	Aim	Result

TASK 5

1. Scan the text and try to get major details about Hardware.
2. After reading the text fill in the table with the information from the text.

HARDWARE

According to Webster's dictionary hardware is the mechanical, magnetic, electronic, and electrical devices composing a computer system.

Computer hardware can be divided into four categories: input hardware, processing hardware, storage hardware, output hardware.

Input hardware

The purpose of the input hardware is to collect data and convert it into a form suitable for computer processing. The most common input device is a keyboard. The mouse is a hand held device connected to the computer. The mouse controls the cursor moves across the screen.

The light pen uses a light sensitive photoelectric cell to signal screen position to the computer. Another type of input hardware is optic-electronic scanner that is used to input graphics as well as typeset characters. Microphone and video camera can be also used to input data into the computer.

Processing hardware

The purpose of processing hardware is to retrieve, interpret and direct the execution of software instructions provided to the computer. The most common components of processing hardware are the Central Processing Unit and main memory.

The Central Processing Unit (CPU) is the brain of the computer. It reads and interprets software instructions and coordinates the processing activities that must take place. The design of the CPU affects the processing power and the

speed of the computer, as well as the amount of main memory it can use effectively.

Memory is the system component of the computer in which information is stored. There are two types of computer memory: RAM (random access memory) and ROM (read only memory).

The more memory you have in your computer, the more operations you can perform.

Storage hardware

The purpose of storage hardware is to store computer instructions and data in a form that is relatively permanent and retrieve when needed for processing. Storage hardware serves the same basic functions as do office filing systems except that it stores data as electromagnetic signals. Nowadays together with hard disk USB flash drives and CD-ROM are widely used.

Output hardware

The purpose of output hardware is to provide the user with the means to view information produced by the computer system. Information is output in cither hardcopy or softcopy form. Hardcopy output can be held in your hand, such as paper with text or, graphics printed on it. Softcopy output is displayed on a monitor.

Monitor is a component with a display screen for viewing computer data, television programs, etc.

Printer is a computer output device that produces a paper copy of data or graphics.

Hardware comes in many configurations, depending on what the computer system is designed to do. Hardware can fill several floors of a large office building or can fit on your lap.

Hardware	Components	Purpose
	Memory, RAM, ROM	
		Provide users with the means to view information produced by the computer
Input hardware		
	Hard disk, CD-ROM, flash drive	

TASK 6

1. Scan the text and answer the questions below.

2. Read the text thoroughly and try to find out what is the author's major concern about intelligent machines.

Questions

1. How is the "intelligence" of a computer defined in the text?

2. What does the Turing Test consist in?

3. Why can't any machine pass Turing test?

4. What laws did Isaac Asimov proposed to program into intelligent machines?

5. What is your opinion about the planet "run by the computers"? Give your reasons.

INTELLIGENT MACHINES

The evolution of artificial intelligence is now proceeding very rapidly. "Intelligence" in a machine, as in a human, is best defined as the ability to solve complex problems swiftly.

While computers have already enhanced the deadliness of weapons, the prospect for the future is that they will play the more beneficial role of preventing wars. If asked to assess the chances of victory, the computer will analyze facts quite differently from the life-long military expert with his martial enthusiasm and ambitions.

When the same statistics are fed into the emotionless machine each to be weighed with cold objectivity and then assessed against each other, the answer, far more often than in human decision-making, will be "if you start this war you will lose".

The computer coolly appraises the chances of success before the conflict begins, may well advise that the fight is unwinnable - or that the chances of victory are unacceptably low - and needless disaster can be avoided.

At what point today we decide that their mental capacity is approaching the human level? This question will be answered by an ingenious trick known as the Turing Test.

We most easily assess people's intelligence by communicating with them. The late British mathematician, Alan Turing, proposed a simple test. A person would sit alone in a room talking by teleprinter with two other beings elsewhere, one of them human and the other a computer. When after substantial conversa-

tion he no longer knew which was which, the computer would have passed the Turing Test, and arguably would have attained human intelligence.

No machine today comes near to passing the Turing Test. These are early days, however, and we may suspect that the rise of machine's IQ will be swift.

What will happen when this moment arrives? The most likely outcome is a world-wide slave empire, in which we are the masters and the computers virtually run the planet for us. But what if there arises a "Spartacus computer", a series of rebel machines with the ambition to reverse these roles?

Prof. Isaac Asimov may have solved the problem with a masterpiece of mathematical logic. He proposes that all intelligent machines should have the following three "Laws" programmed into them as instincts:

1. A robot may not injure a human being, or through inaction allow a human being to come to harm.

2. A robot must obey the orders given it by human beings, except when such orders would conflict with the First Law.

3. A robot must protect its own existence so long as such protection does not conflict with the First and Second Laws.

It sounds foolproof, but will it work? Pessimists will still pay attention to the ominous words of Arthur C. Clarke: "The first invention of a super-intelligent machine will be the last invention mankind will be allowed to make."

TASK 7

1. Skim the text "Database Management Systems" and find out how a DBMS deals with an access request.

2. Put the steps after the text in the correct order.

DATABASE MANAGEMENT SYSTEMS

Databases are used within a medical context for many purposes. For example, they are used to hold patient details so they can be accessed from anywhere within a hospital or network of hospitals. With the recent improvements in image compression techniques, X-rays and scan output can also be held in databases and accessed in the same way.

These multi-user databases are managed by a piece of software called a database management system (DBMS). It is this which differentiates a database

from an ordinary computer file. Between the physical database itself (i.e. the data as actually stored) and the users of the system is the DBMS. All requests for access to data from users – whether people at terminals or other programs running in batch – are handled by the DBMS.

One general function of the DBMS is the shielding of database users from machine code (in much the same way that COBOL shields programmers from machine code). In other words, the DBMS provides a view of the data that is elevated above the hardware level, and supports user-requests such as 'Get the PATIENT record for patient Smith', written in a higher-level language.

The DBMS also determines the amount and type of information that each user can access from a database. For example, a surgeon and a hospital administrator will require different views of a database.

When a user wishes to access a database, he makes an access request using a particular data-manipulation language understood by the DBMS. The DBMS receives the request, and checks it for syntax errors. The DBMS then inspects, in turn, the external schema, the conceptual schema, and the mapping between the conceptual schema and the internal schema. It then performs the necessary operations on the stored data.

In general, fields may be required from several logical tables of data held in the database. Each logical record occurrence may, in turn, require data from more than one physical record held in the actual database. The DBMS must retrieve each of the required physical records and construct the logical view of the data requested by the user. In this way, users are protected from having to know anything about the physical layout of the database, which may be altered, say, for performance reasons, without the users having their logical view of the data structures altered.

The DBMS

Step	*Operation*
	inspects the mapping between the conceptual schema and internal schema
	performs operations on the stored data
	inspects the external schema
	checks for syntax errors
	inspects the conceptual schema
	receives the request

TASK 8

1. Scan the text and say which information of password creation is familiar to you.

2. Read the text again and find synonyms to: *numerous, to memorize, fundamental,*

safe/protected, advice/hints, to break, to get/acquire, data, the right to use, legal, to retain/keep, to let, often, to invent/compose, mixture.

3. Sum up the principles of secure password

10 TIPS FOR CREATING SECURE PASSWORDS

Most people have multiple passwords for e-mail accounts, online banking, discussion forums and site memberships. It can be difficult to remember all of them, and people may think it is easier to simply use the same password on different sites, or to use passwords that are easy to remember such their date-of-birth or a child's name. Unfortunately, these types of passwords can easily be hacked.

The problem is that while you might be able to remember these passwords, which is why so many people use basic passwords and phrases, they are not at all secure and hackers will be able to easily crack them to obtain your account information.

The following tips can help to create strong, secure and hacker-proof passwords

1. Use a strong password. A strong password contains a combination of six or more uppercase and lowercase letters, plus punctuation and numbers. Using all four types of characters works the best. For example instead of using welcome use W3Lc0mE^9.

2. Passwords should be eight or more characters in length. The longer the password, the harder it is to crack.

3. Never use the same password twice. If, for example, your eBay account were hacked and your password obtained, the hacker would have instant access to your PayPal account if you use the same password.

4. Do not use common information in your password, such as birthdates, your phone number, or other information directly related to you.

5. Passwords comprised of characters rather than proper words are more secure.

Refrain from writing passwords down and do not login to accounts via a public computer (e.g., at the library or Internet cafe) and save the password details in the browser.

Never click an e-mail link and log into a secure site from an e-mail. Even if the e-mail looks legitimate, always type the URL into a browser yourself, then log in to your account. This will help you avoid phishing attacks.

Do not allow applications to store your passwords online, and remember to clear your browser cache, history and clear passwords frequently.

Remember to change your passwords frequently. The more important the account, the more frequently the password should be changed.

Never communicate a password to anyone, especially via e-mail or instant messenger. Passwords should always be kept private.

10. Create a Strong Password from a Pass Phrase

Some systems will allow you to use a pass phrase, that is a phrase with spaces. These are the most secure types of log-ins. If the system does not support phrases, then you can create a secure password from a phrase.

For example "My son Ryan is 12 years old" as a password could be msRi12yo. You can make this more secure my replacing some characters with uppercase letters and adding numbers and punctuation, like this: msRi12Y0!. These types of passwords are often easier to remember.

There are many online services that can help you determine how secure your password really is. Microsoft's Password Checker lets you enter in a password and the service will help you to gauge the strength of your password. Microsoft also recommends that a strong password should be 14 characters or longer, (eight characters or longer at a minimum), and it should include a combination of uppercase and lowercase letters, numbers, and symbols.

TASK 9

1. Scan the text below and choose the most suitable job title according to job description and skills required.

2. Classify the jobs according to their importance in the IT world. Give your reasons.

GREAT JOBS NO ONE HAS HEARD OF—*YET*

Job titles: Organic/cryogenic chip designer.
Virtual reality designer
Superprogrammer

Network surveillance specialist

We managed to coax some industry observers and employment experts into describing new kinds of jobs they believe will soon emerge.

1. Job description: Will create applications that can be used with little or no computer knowledge. Using complex C code or object-oriented programming tools, these specialists will design easy-to-use workstation screens and windowing programs. These programmers will also push new features into electronic mail systems for the office and will make connections to far-flung databases a simple matter of clicking on a few icons.

Skills: C language programming expertise, in-depth knowledge of windowing technology and object-oriented programming and the ability to learn about new software tools as they become available.

2. Job description: Will create virtual reality simulation systems, combinations of software and bodyware that make the user part of the computer systems. The ultimate in friendly user interfaces, virtual reality systems convert body motions into computer commands and allow users to interact on a real-time basis with an animated three-dimensional environment. Such systems are likely to be used extensively in training and design engineering.

Skills: Creating superrealistic graphics techniques that allow users to fly a fighter plane without leaving the ground, become an instant neurosurgeon or be shrunk as small as a blood cell for a tour of the cardiovascular system will call for familiarity with animation techniques, 3-D modeling and advanced programming for interactive systems. Some exposure to robotics and fascination with video games will also be helpful.

3. Job description: The world of open networking is booby-trapped with security flaws, and your assignment will be to find those gaps and plug them.

Skills: In these days of enterprisewide networking, it will take the mind of a detective, the brains of a math whiz and the patience of a freshwater fisherman to secure networked computers. In addition to advanced skills in network secu-

rity administration, these specialists will have to have knowledge of encryption techniques, access control devices and virus identifications.

Considerable diplomacy will also be required because this job will often involve interacting with supplier and customer organizations whose systems intertwine with those of the employer.

4. Job description: Will create chips using the latest in materials and techniques. Today's semiconductor chips are, for the most part, made of silicon. But tomorrow's will almost certainly be made of other, more challenging, materials – possibly including organic materials.

Skills: Will require familiarity with new materials, such as carbon-60 atoms shaped like soccer balls that can be arranged in layers one-thousandth the size of current chip components, as well as light-emitting silicon that is the basis for chips used in light-based optical computers.

Experience with making traditional silicon chips run faster using supercooled liquid nitrogen will be a must. Ideal candidate will be an electrical engineer with a background in both chemistry and crystallography.

TASK 10

1. Look through the title of the text. Can you grasp the context of the article?

2. Read the preface of the article. Give the definition of the term *eponym*, as you understand it.

3. Skim the article. Choose 2 examples you like best, read them carefully and reproduce them.

MATHEMATICAL FIRSTS — WHO DONE IT?

In mathematics and other scientific disciplines a common practice is to name a theory, an equation and other discoveries in honor of the scientist who pioneered the investigation. Some examples of such expressions are Galois theory, Fahrenheit scale, Freudian psychoanalysis, pasteurization, Zorn's lemma, Planck's constant, Linnaean system of botanical classification, Hilbert space, Darwin's theory of evolution, Hailey's comet, Keynesian economic theory, Mendelian genetics and so on.

Designations of this type are called *eponyms*.

In the November1983 an article “Who Discovered Bayes’s Theorem?” appeared in issue of the *American Statistician*. The author, S.M. Stigler. provides evidence that the expression “Bayes’s theorem” may be a misnomer or a pseudoeponym.

Here is the list of such mathematical misnomers.

The Pythagorean Theorem

The Pythagorean theorem states that in a right triangle, the sum of the squares of the legs equals the square of the hypotenuse. It would be difficult to overestimate the importance of this result. It is generally acknowledged that this remarkable theorem was known before the time of Pythagoras of Samos (582-500 B.C.), the Greek philosopher and mathematician. Van der Waerden hypothesized that since the Pythagorean theorem was known in four ancient civilizations—Babylonia, India, Greece and China—it is probable that a common origin of the whole theory of right triangles exists. Using both written sources and archeological evidence, Van der Waerden concluded: “I am convinced that the excellent neolithic mathematician who discovered the Theorem of Pythagoras had a proof of the theorem”. He also remarked that the best account of mathematical science in the Neolithic Age is to be found in Chinese texts.

1. Euler's Polyhedral Theorem

One of the most interesting formulas relating to simple polyhedra is $F+V-E=2$, where F is the number of faces, V is the number of vertices, and E is the number of edges. The five simple polyhedra are tetrahedron (pyramid), hexahedron (cube), octahedron, dodecahedron and icosahedron. For the cube, $F=6$, $V=8$ and $E=12$. Although this formula may have been known to Archimedes (225 B.C.), Rene Descartes, the French mathematician and philosopher, was the first to state this concept (1635). Leonard Euler independently discovered the theorem and announced his finding in Petrograd in 1752. Since Descartes’s findings were not generally known until his unpublished mathematical works were made available in I860, the polyhedral formula became known as Euler’s theorem rather than Descartes’s theorem.

2. L’Hôpital’s Rule

The first textbook on the calculus was published in Paris in 1696. Its author, Marquis Guillaume Francois Antoine de L’Hôpital, included in the text a method for finding the limiting value of a fraction whose numerator and denominator simultaneously approach zero as a limit. This method is now known

as L'Hôpital's rule, even though it was discovered by Johann Bernoulli. Apparently L'Hôpital paid Bernoulli a regular salary and under their pact Bernoulli was obliged to send L'Hôpital his mathematical discoveries.

3. Leibniz's Method of Determinants

The concept of a determinant first appeared in the Western world in 1693 in a series of letters to L'Hôpital from Gottfried Leibniz. On this basis, Leibniz is credited with inventing the method of determinants. In 1683, however, Seki Kowa, the greatest of the seventeenth-century Japanese mathematicians, produced a mathematical treatise that contained the concept of determinants. A determinant is a function that assigns a numerical value to a square array of symbols. Determinants are useful in solving systems of simultaneous equations.

4. Cardan's Formula

The formula for the roots of a cubic is called Cardan's formula because it first printed in his Ars Magna [The great art] in 1545. Girolamo Cardano (i. e. Jerome Cardan), who was a gambler, a doctor and a teacher of mathematics, wheedled the solution of the cubic from Niccolo Tartaglia under solemn oath to the latter that he would not reveal the secret. Evidence also indicates that Sc i pione del Ferro discovered the solution to the cubic even earlier than Tartaglia, but he failed to publish his findings.

6. Bernoulli's System of Polar Coordinates

Although Jakob Bernoulli is credited with the discovery of polar coordinates there is a convincing evidence that Sir Isaac Newton was actually the originator of this geometric concept. Polar coordinates, like rectangular coordinates are used to locate the position of a point in a plane. With rectangular coordinates the point is located by specifying its distance from two perpendicular axes, whereas with polar coordinates the point is specified by its distance and direction from a fixed reference point relative to a given reference line. The point is called the *pole* and the line is called the *polar axis.*

7. Gauss's Nnumber Plane

The first published account of the graphical representation of complex numbers (i.e. numbers of the form $a+bi$, where a and b are real numbers and i is imaginary) appeared in 1798 in the *Transactions of the Royal Danish Academy* and was written by Caspar Wessel, a Norwegian surveyor. Although Carl Friedrich Gauss did not publish his research on this concept until 1831, the complex

number plane is now referred to as Gauss's number plane rather than Wessel's number plane. Apparently Wessel's work went virtually unnoticed. This concept is important because it made it possible for mathematicians to visualize imaginary numbers.

8. Cramer's Rule

Gabriel Cramer published his *Introduction a I'Analyse des Lignes Courbes Algebriques* [Introduction to the analysis of algebraic curves] in 1750. In the appendix he gives a method for solving systems of linear equations using determinants, which is now known as Cramer's rule. In 1748, however, the rule appeared in a posthumous publication by Colin Maclaurin entitled *A Treatise of Algebra.* Although the rule was first stated by Maclaurin Cramer's superior mathematical notation was probably instrumental in popularizing the method; thus, it has been suggested that the procedure be referred to as the Maclaurin-Cramer rule.

9. Pascal's triangle

Although Blaise Pascal's *Traite du Triangle Arithmetique* [Treatise on the Arithmetic Triangle] was published posthumously in 1665, he was using the arithmetic triangle that now bears his name as early as 1653. This mathematical concept was known to the Arabs in the eleventh century. It is believed to have been imported into China and recorded by Chu Shih-Chieh, the greatest of the Chinese algebraists of his time, in 1303. It was indicated that Pascal's arithmetic triangle was published earlier by his teacher Herigone and it is also claimed that the arithmetic triangle was discovered by Omar Khayyam, the Persian poet and astronomer, almost six centuries before Pascal. Since Pascal developed many properties of the triangle it is now known as Pascal's triangle. Perhaps the most commonly encountered property of the arithmetic triangle is that its rows contain the coefficients in the binomial expansion.

TASK 11

1. Read the two texts below and compare the information. Which text is more informative?

2. Say what information was not mentioned in the Russian text. Render the key points of the text in English.

At the heart of the Internet Protocol (IP) portion of TCP/IP is a concept called the Internet address. This 32-bit coding system assigns a *X*, number to every node on the network. There are various types of addresses designed for networks of different sizes, but you can write every address with a series of numbers that identify the major network and the sub-networks to which a node is attached. Besides identifying a node, the address provides a path that gateways can use to route information from one machine to another. Although data-delivery systems like Ethernet or X.25 bring their packets to any machine electrically attached to the cable, the IP modules must know each other's Internet addresses if they are to communicate. A machine acting as a gateway connecting different TCP/IP networks will have a different Internet address on each network. Internal look-up tables and software based on another standard – called Resolution Protocol –	TCP/IP – это средство для обмена информацией между компьютерами, объединенными в сеть, даже если они подключены к отдельным сетям. Компьютеры могут иметь разные операционные системы, Cray и Macintosh. TCP/IP – это стандарт, который соединяет разнородные компьютеры, операционные системы и сети. Это протокол, который глобально управляет Internet. Понимание TCP/IP главным образом подразумевает способность разбираться в наборах протоколов, которые используются главными компьютерами TCP/IP для обмена информацией. **Основы TCP/IP** TCP/IP – Протокол управления передачей/Протокол Internet [Transmission Control Protocol/Internet Protocol], В терми-нологии вычислительных сетей протокол – это согласованный стандарт, который; позволяет двум компьютерам обмениваться данными. TCP/IP часто называют набором, или комплектом протоколов. Среди них TCP и IP являются основными. Программное обеспечение для TCP/IP на компьютере, представляет собой специфичную для данной платформы реализацию TCP, IP и других, членов семейства TCP/IP. Обычно в нем также имеются высокоуровневые прикладные программы, такие как FTP – Протокол передачи файлов [File Transfer Protocol], которые дают возможность через командную строку управлять обменом файлами по Сети. TCP/IP позволяет самостоятельны сетям подключаться к Internet или объеди-

are used to route the data through a gateway between networks. Another piece of software works with the IP-layer programs to move information to the right application on the receiving system. This software follows a standard called the User Datagram Protocol (UDP). You can think of the UDP software as creating a data address in the TCP/IP message that states exactly what application the data block is supposed to contact at the address the IP software has described. The UDP software provides the final routing for the data within the receiving system. The Transmission Control Protocol (TCP) part of TCP/IP comes into operation once the packet is delivered to the correct Internet address and application port. Software packages that follow the TCP standard run on each machine, establish a connection to each other, and manage the 40 communication exchanges. A data-delivery	няться для создания частных интрасетей. Вычислительные сети, составляющие интрасеть, физически подключаются через устройства, называемые маршрутизаторами или IP-маршрутизаторами. Маршрутизатор – это компьютер, который передает пакеты данных из одной сети в другую. В интрасети, работающей на основе TCP/IP, информация передается в виде дискретных блоков, называемых IP-пакетами [IP packets] или IP-дейтаграммами [IP datagrams]. Благодаря программному обеспечению TCP/IP все компьютеры, подключенные к вычислительной сети, становятся «близкими родственниками». Оно скрывает маршрутизаторы и базовую архитектуру сетей. Таким образом, все это выглядит как одна большая сеть. Точно так же, как подключения к сети Ethernet распознаются по 48-разрядным идентификаторам Ethernet, подключения к интрасети идентифицируются 32-разрядными IP-адресами. Они выражаются в форме десятичных чисел, разделенных точками (например, 128.10.2.3). Взяв IP-адрес удаленного компьютера, компьютер в интрасети или в Internet может отправить данные на него, как будто они составляют часть одной и той же физической сети. TCP/IP дает решение проблемы, обмена данными между двумя компьютерами, подключенными к одной интрасети, но принадлежащими различным физическим сетям. IP – самый фундаментальный протокол из комплекта. TCP/IP – передает IP-дейтаграммы по интрасети и выполняет важную функцию, называемую маршрутизацией.

system like Ethernet doesn't promise to deliver a packet successfully. Neither IP nor UDP knows anything about recovering packets that aren't successfully delivered, but TCP structures and buffers the data flow, looks for responses and takes action to replace missing data blocks. This concept of data management is called reliable stream service. After TCP brings the data packet into a so computer, other high-level programs handle it. Some are enshrined in official US government standards, like the File Transfer Protocol (FTP) and the Simple Mail Transfer Protocol (SMTP). If you use these standard protocols on different kinds of computers, you will at least have ways of easily transferring files and other kinds of data. Conceptually, software that supports the TCP protocol stands alone. It can work with data received through a serial port, over a packet- switched network, or from a network system like Ethernet. TCP	TCP – это протокол более высокого уровня, который позволяет прикладным программам, запущенным на различных главных компьютерах сети, обмениваться потоками данных. TCP делит потоки данных на цепочки, которые называются TCP-сегментами, и передает их, с помощью IP. В большинстве случаев каждый TCP-сегмент пересылается в одной IP-дейтаграмме. Однако при необходимости TCP будет расщеплять сегменты на несколько IP-дейтаграмм, вмещающихся в физические кадры данных, которые используют для передачи информации между компьютерами а сети. Поскольку IP не гарантирует, что дейтаграммы будут получены в той же самой последователь-ности, в которой они были посланы, TCP осуществляет повторную «сборку» TCP-сегментов на другом конце маршрута, чтобы образовать непрерывный поток данных. FTP и telnet – это два примера популярных прикладных программ TCP/IP, которые опираются на использование TCP. Другой важный член комплекта TCP/IP – User Datagram Protocol (UDP, протокол пользовательских дейтаграмм), который похож на TCP, но более примитивен. TCP - «надежный» протокол, потому что он обеспечивает проверку на наличие ошибок и обмен подтверждающими сообщениями, чтобы данные достигали своего места назначения без искажений. Протокол UDP не гарантирует, что, дейтаграммы будут приходить в том порядке, в котором были посланы, и даже того, что они придут вообще.

software doesn't need to use IP or UDP. it doesn't even have to know they exist. But in practice TCP is an integral part of the TCP/IP picture, and it is most frequently used with those two protocols. [Adapted from Flow TCP/IP Links Dissimilar Machines', PC Magazine. September 1989]	Другие TCP/IP протоколы играют менее заметные, но в равной степени важные роли в работе сетей TCP/IP. Например, протокол определения адресов (Address Resolution Protocol. ARP) преобра-зует IP-адреса в физические сетевые адреса, такие, как идентификаторы Ethernet. Родственный протокол – протокол обратного преобразования адресов (Reverse Address Resolution Protocol, RARP) – выполняет обратное действие, преобразуя физические сетевые адреса в IP-адреса.

UNIT IV. True/False Statements

TASK 1

1. Read the text below. The information in the sentences 1-5 after the text does not comply with the information in the text.

2. Change the statements in order to make them true to the text.

In the computer industry, the term security or computer security refers to techniques for ensuring that data stored in a computer cannot be read or compromised by any individuals without authorization. Security is not just about having an antivirus program. There are many security measures you can apply to your Windows PC to decrease the likelihood of running into problems with your Windows-based computer. Most computer security measures involve data encryption and passwords. Data encryption is the translation of data into a form that is unintelligible without a deciphering mechanism. A password is a secret word or phrase that gives a user access to a particular program or system.

1. The term computer security refers to technical ensuring of data stored in a computer.

2. Security means having an antivirus program.

3. You can apply many security measures to your Windows PC to increase the likelihood of running into problems with your Windows-based computer.

4. Data encryption is transformation of data into a form that is intelligible without a deciphering mechanism.

5. A secret word or phrase gives a user access to a particular program or system.

TASK 2

1. Read the text quickly. Statements (1-5) after the text are false. Think and say what make them false?

2. Make the statements true to the text.

COMPUTERS: A HAZARD TO THE ENVIRONMENT

Computers were supposed to create “the paperless office,” but things don’t seem to have worked out that way. The spread of the PC, plus high-speed copiers, laser printers, and FAX machines, have all dramatically increased the consumption of paper in the office. Many companies are recycling their paper, and some paper products are made using recycled materials, but paper is only one of the problems. In an effort to recycle hardware components, some companies are now accepting empty toner cartridges and selling refurbished ones.

Batteries are another problem. Though they only constitute two-tenths of one percent of the total volume in landfills, their toxic heavy metals make them account for 20 percent of the hazardous waste from households and offices. Some companies are collecting worn-out batteries and others are developing batteries that do not use heavy metals.

Statements

1. Computers made offices paperless.
2. Many companies do not want to recycle their paper products.
3. Paper is the only problem.
4. Toxic heavy metals constitute 20 percent of batteries.
5. Some companies are collecting batteries that do not use heavy metals.

TASK 3

1. Scan the text “Firewalls”. Which of the sentences (a,b) from task 1-5 are true to the text.

FIREWALLS

A firewall is a protective system that lies, in essence, between your computer network and the Internet. When used correctly, a firewall prevents unauthorized use and access to your network. The job of a firewall is to carefully analyze data entering and exiting the network based on your configuration. It ignores information that comes from an unsecured, unknown or suspicious locations. A firewall plays an important role on any network as it provides a protective barrier against most forms of attack coming from the outside world.

Firewalls can be either hardware or software. The ideal firewall configuration will consist of both. In addition to limiting access to your computer and network, a firewall is also useful for allowing remote access to a private network through secure authentication certificates and logins.

While many people do not completely understand the importance and necessity of a firewall, or consider it to be a product for businesses only, if your network or computer has access to the outside world via the Internet then you need have a firewall to protect your network, individual computer and data therein.

1. a) When used correctly, a firewall prevents access to your network.

b) Correctly used firewall prevents unauthorized use and access to your network.

2. a) A firewall protects the outside world against most forms of attack.

b) A firewall provides a protective barrier against attacks coming from the outside world.

3. a) Firewalls are hardware or software.

b) Hardware or software can be firewalls.

4. a) A firewall limiting access to your computer and network is additional.

b) A firewall limits access to your computer and network.

5. a) Many people do not understand the importance and necessity of a firewall.

b) While many people completely understand the importance of a firewall, they do not use it.

TASK 4

1. Scan the text Laser Printers. Compare the information in the text and in the statements (1-5) below the text.

2. Change the statements to make them true to the text

LASER PRINTERS

A laser printer is a printer that uses a focused beam or light to transfer text and images onto paper. Though contrary to popular belief, the laser does not actually burn the images onto the paper. Instead, as paper passes through the printer, the laser beam fires at the surface of a cylindrical drum called a photoreceptor. This drum has an electrical charge (typically positive), that is reversed in

areas where the laser beam hits it. By reversing the charge in certain areas of the drum, the laser beam can print patterns (such as text and pictures) onto the photoreceptor.

Once the pattern has been created on the drum, it is coated with toner from a toner cartridge. The toner is black in most cartridges, but may be cyan, magenta, and yellow in color laser printers. The positively charged toner clings to areas of the drum that have been negatively charged by the laser. When the paper passes through the printer, the drum is given a strong negative charge, which allows the toner to transfer and stick to the paper. The result is a clean copy of the image written on the paper.

Because laser printers do not use ink, they have less image smearing problems than inkjet printers and are able to print pages faster. While laser printers and toner cartridges typically cost more than inkjet printers and ink cartridges, most laser toner cartridges last several times longer than ink cartridges, which makes their cost per page about equal. For this reason, businesses tend to use laser printers, while consumers are more likely to use inkjet printers. Laser printers typically have a resolution of 600 dpi (dots per inch) or higher.

Statements

1. Laser printers transfer texts and images onto paper by means of a laser beam.
2. After the pattern is created it is covered with toner.
3. All laser printers print out colored images.
4. Ink is usually used in laser printers.
5. Consumers like using inkjet printers because their toners last long enough.

TASK 5

1. Scan the text “The ZX Spectrum” and mark the statements True or False (T/F).

THE ZX SPECTRUM

In April 1982 a British company, headed by Sir Clive Sinclair, launched the ZX Spectrum computer on the market and sparked an IT revolution.

The tiny black computer with its rubber keys ignited the home computer age both in the UK and elsewhere, which led to an boom in computer manufacturing and developed software programmers whose talent is still evident today.

The ZX Spectrum was the brainchild of the entrepeneur Clive Sinclair, who had previously developed one of the first cheap and slim pocket calculators. The Spectrum was Sinclair's fourth computer, but was by far the most successful.

For many people, the ZX Spectrum was their first experience of using a computer and it soon gained a loyal following. In fact, it would not be a great exaggeration to credit Clive Sinclair and his ZX Spectrum with almost single-handedly creating the IT industry in the UK and providing the first learning tools for the programmers who shape today's video games and information technology.

Even today, there are programs being written for the Spectrum, though it has not been made for years. The computer was so successful that there are many nostalgic users all over the world, who look back on this machine with great affection.

True/False Statements

1. The ZX Spectrum had an ordinary keyboard.
2. The computer had a great impact only in the UK.
3. The impact of the computer is still noticeable today.
4. Clive Sinclair had not worked in electronics before making the computer.
5. He only made computers.
6. A lot of people had not used a computer before they bought the ZX Spectrum.
7. The IT industry in the UK owes a lot to Clive Sinclair.
8. The computer was influential in the area of video games.
9. People are writing programs for it because the computer is still on the market.
10. Many people have fond memories of this computer.

TASK 6

1. Scan the text and mark the statements True or False (T/F).
2. Identify Ada's contribution to the development of computer programming.

THE FIRST COMPUTER PROGRAMMER

Ada Lovelace was the daughter of the poet Lord Byron. She was taught by Mary Somerville, a well-known researcher and scientific author, who introduced her to Charles Babbage in June 1833. Babbage was an English mathematician, who first had the idea for a programmable computer.

In 1842 and 1843, Ada translated the work of an Italian mathematician, Luigi Menabrea, on Babbage's Analytical Engine. Though mechanical, this machine was an important step in the history of computers; it was the design of a mechanical general-purpose computer. Babbage worked on it for many years until his death in 1871. However, because of financial, political, and legal issues, the engine was never built. The design of the machine was very modern; it anticipated the first completed general-purpose computers by about 100 years.

When Ada translated the article, she added a set of notes which specified in complete detail a method for calculating certain numbers with the Analytical Engine, which have since been recognized by historians as the world's first computer program. She also saw possibilities in it that Babbage hadn't: she realized that the machine could compose pieces of music. The computer programming language "Ada", used in some aviation and military programs, is named after her.

True/False Statements

1. Ada Lovelace's teacher introduced her to Charles Babbage.
2. Babbage programmed the first computer.
3. Ada translated the article in 1842.
4. The Analytical Engine was electronic.
5. Luigi Menabrea designed the first computer.
6. Babbage finished the machine before he died.
7. Babbage's design was ahead of its time.
8. Ada's work was instantly recognized as being the first computer program.
9. Babbage saw that his machine could write music.
10. Ada wrote military and aviation computer programs.

TASK 7

1. Scan the text “Cookies” and mark the statements True or False (T/F).

2. Read the text again and find the definitions of the following: *cookies, HTML, cookie list*

COOKIES

The WWW is built on a very simple, but powerful premise. All material on the Web is formatted in a general, uniform format called HTML (Hypertext Markup Language), and all information requests and responses conform to a similarly standard protocol. When someone accesses a server on the Web, such as the Library of Congress, the user’s Web browser will send an information request to the Library of Congress’ computer. This computer is called a Web server. The Web server will respond to the request by transmitting the desired information to the user’s computer. There, the user’s browser will display the received information on the user’s screen.

Cookies are pieces of information generated by a web server and stored in the user’s computer, ready for future access. Cookies are embedded in the HTML information flowing back and forth between the user’s computer and the servers. Cookies were implemented to allow user-side customization of Web information. For example, cookies are used to personalize Web search engines, to allow users to participate in WWW-wide contests (but only once!), and to store shopping lists of items a user has selected while browsing through a virtual shopping mall.

Essentially, cookies make use of user-specific information transmitted by the Web server onto the user’s computer so that the information might be available for later access by itself or other servers. In most cases, not only does the storage of personal information into a cookie go unnoticed, so does access to it. Web servers automatically gain access to relevant cookies whenever the user establishes a connection to them, usually in the form of Web requests.

Cookies are based on a two-stage process. First the cookie is stored in the user’s computer without their consent or knowledge. For example, with customizable Web search engines like My Yahoo!, a user selects categories of interest from the Web page. The Web server then creates a specific cookie, which is essentially a tagged string of text containing the user's preferences, and it transmits this cookie to the user’s computer. The user’s Web browser, if cookie-savvy, re-

ceives the cookie and stores it in a special file called a cookie list. This happens without any notification or user consent. As a result personal information is formatted by the Web server, transmitted, and saved by the user's computer.

During the second stage, the cookie is clandestinely and automatically transferred from the user’s machine to a Web server. Whenever a user directs her Web browser to display a certain Web page from the server, the browser will, without the user’s knowledge, transmit the cookie containing personal information to the Web server (hosted with any web hosting provider).

True/False Statements

1. The WWW is based on a simple condition.
2. The material on the Web is formatted in HTML.
3. Cookies are generated by a web server and stored in the user’s computer.
4. Cookies allow user-side customization of Web information.
5. Cookies are used to personalize Web search engines.
6. Web servers access to relevant cookies when the user establishes a Web request.
7. The process of cookies operation involves two stages.
8. Personal information is transmitted to the Web server.
9. At the second stage the cookie is transferred from the user’s computer to a Web server.
10. A user directs the Web browser to display a certain Web page and the browser transmits the cookie containing personal information to the Web server.

UNIT V. Multiple Choice

TASK 1

Read the text below. Try to identify which of the questions (1-3) corresponds to the paragraph, to the sentence, to the word or word combination?

PROGRAMMING

Computers are controlled by sets of instructions called programs. Programs are written by a person called a programmer using special languages called programming languages.

Programmers usually do a lot more than just write the program code. Their first task is usually to analyze the problem, so that they can design a system to deal with it. When they have designed a code for a system and tested it, they then have to create documentation, i.e. notes which explain the structure and logical steps of the program for future users and trainers. They have to be involved in the initial training of users, so that they can make changes to the program according to information obtained from the users. They sometimes use diagrams, called flowcharts, to show the sequence of logical steps in a program.

Flowcharts have arrowheads to indicate the direction of program flow and special symbols to indicate different functions in the program.

It is very difficult to write a program without any faults. The errors, or bugs as they are commonly known, can be caused by a number of factors, and programs usually have to be debugged, i.e. tested and altered to eliminate all the errors, before they are used.

1. The set of instructions

A) control programs

B) is called programs

C) is used in programming

2. Programmers usually

A) design systems and codes

B) have to analyze programs before designing the code

C) get the information about the program from the users

3. It is not easy to

A) write a program

B) make program work

C) write programs without errors

TASK 2

Read the text “Computer Viruses”. In questions 1-4 the wrong answers are underlined. Identify which information from the wrong answers was not in the text

COMPUTER VIRUSES

Viruses are programs which are written deliberately to damage data. Viruses can hide themselves in a computer system. Some viruses are fairly harmless. They may flash a message on screen, such as 10 “Gotcha! Bet you don’t know how I crept in”. The Yankee Doodle virus plays this American tune on the computer’s small internal speaker every eight days at 5 p.m. Others have serious effects. They attach themselves to the operating system and can wipe out all your data or turn it into gobbledegook. When the Cascade virus attacks, all the letters in a file fall into a heap at the bottom of the screen. This looks spectacular but it’s hard to see the funny side when it’s your document.

Viruses are most commonly passed via disks but they can also spread through bulletin boards, local area networks, and email attachments. The best form of treatment is prevention. Use an antivirus program to check a flash drive before using it. Always download email attachments and check for viruses. If you do catch a virus, there are antivirus programs to hunt down and eradicate the virus.

1. Viruses are programs

A) written purposely

B) created by programmers

C) which damage data

2. The Yankee Doodle is a virus which

A) is called after American tune

B) plays specific music on a computer at the specific time

C) exists eight days

3. The Cascade virus

A) attacks only word documents

B) turn documents into gobbledegook

C) produces a spectacular effect

4. Viruses are spread

A) through the networks and infected disks

B) by inexperienced users

C) via email messages

TASK 3

Read the text and choose one sentence (1-3) after each part which corresponds to the main idea of the paragraph.

PEOPLE AND COMPUTERS

1. You may be surprised to learn that people are part of the computing process. Some computers, such as the computer chip that controls an automobile engine, function without human intervention. But even these computers were designed by people and occasionally require maintenance by people. Most computers require people, who are called users.

The main idea of the part is

1) Computers control automobile engine without human intervention

2) Computers were designed by people

3) Most computers are controlled by people

2. Some users progress beyond the basic of computer literacy. They learn the advanced features of application programs. With this knowledge, these users can customize an application program for a specific task. These specialists are called power users.

Computer professionals have taken intermediate and advanced courses about computers. These people apply their professional training to improve the performance, ease of use and efficiency of computer systems. One kind of computer professionals are programmers who create new programs.

The main idea of the part is

1) Power users and computer professionals have been trained to work with computers

2) A programmer is a person who writes new programs

3) Power users can customize application programs for specific tasks.

3. Procedures are steps that must be followed to accomplish a specific computer-related task. Knowing common computer procedures is a part of person's computer literacy.

Chances are, you already know several computer procedures. For example, you have probably used an automated teller machine (ATM). Inside the ATM is a computer. In response to on-screen message called prompts, you insert your card, enter your personal identification number (PIN), and tell the machine how much money you want. You also follow computer procedures when you program your tablet PC or set an alarm clock on your telephone.

The main idea of the part is

1) To receive your money you must know your PIN

2) Inside the ATM is a computer

3) Computer procedures are inside many things we use in everyday life

TASK 4

Read the text. Look through the task after text.

For questions 1-5 choose the most suitable answer (A, B, C, D).

ARCHITECTURE

The word "architecture" typically refers to building design and construction. In the computing world, "architecture" also refers to design, but instead of buildings, it describes the design of computer systems. Computer architecture is a broad topic that includes everything from the relationship between multiple computers (such as a "client-server" model) to specific components inside a computer.

The most important type of hardware design is a computer's processor architecture. The design of the processor determines what software can run on the computer and what other hardware components are supported. For example, In-

tel's x86 processor architecture is the standard architecture used by most PCs. By using this design, computer manufacturers can create machines that include different hardware components, but run the same software. Several years ago, Apple switched from the PowerPC architecture to the x86 architecture to make the Macintosh platform more compatible with Windows PCs.

The architecture of the motherboard is also important in determining what hardware and software a computer system will support. The motherboard design is often called the "chipset" and defines what processor models and other components will work with the motherboard. For example, while two motherboards may both support x86 processors, one may only work with newer processor models. A newer chipset may also require faster RAM and a different type of video card than an older model.

Most modern computers have 64-bit processors and chipsets, while earlier computers used a 32-bit architecture. A computer with a 64-bit chipset supports far more memory than one with a 32-bit chipset and can run software designed specifically for 64-bit processors.

1. The word architecture

A) is a construction term

B) is used both in construction and building design

C) describes the structure of computer system

D) means clients-server relationship

2. The architecture of computer's processor

A) determines the capacity of the computer

B) supports hardware components

C) refers to the design of hardware

D) determines types of software which can be used for this computer

3. Computer manufactures

A) switched Apple from the PowerPC architecture to the x86 architecture

B) created different hardware components

C) designed machines with different hardware components that run the same software

D) use the design to create computers with different hardware components

4. Motherboard architecture

A) is as important as computer's processor architecture

B) defines the hardware components

C) refers to the computers software

D) determines the software and hardware that can be used for the computer

5. Modern computers

A) use 32-bit architecture

B) support more memory than earlier computers

C) can run only specific software

D) have a processors and chipsets

TASK 5

Read the text about the Facebook. For questions 1-6 after the text choose the correct answer (A,B,C,D)

FACEBOOK

Facebook is a social networking website that was originally designed for college students, but is now open to anyone 13 years of age or older. Facebook users can create and customize their own profiles with photos, videos, and information about themselves. Friends can browse the profiles of other friends and write messages on their pages.

Each Facebook profile has a "wall", where friends can post comments. Since the wall is viewable by all the user's friends, wall postings are basically a public conversation. Therefore, it is usually best not to write personal messages on your friends' walls. Instead, you can send a person a private message, which will show up in his or her private Inbox, similar to an e-mail message.

Facebook allows each user to set privacy settings, which by default are pretty strict. For example, if you have not added a certain person as a friend, that person will not be able to view your profile. However, you can adjust the privacy settings to allow users within your network (such as your college or the area you live) to view part or all of your profile. You can also create a "limited profile", which allows you to hide certain parts of your profile from a list of us-

ers that you select. If you don't want certain friends to be able to view your full profile, you can add them to your “limited profile” list.

Another feature of Facebook, which makes it different from MySpace, is the ability to add applications to your profile. Facebook applications are small programs developed specifically for Facebook profiles. Some examples include SuperPoke (which extends Facebook's "poke" function) and FunWall (which builds on the basic "wall" feature). Other applications are informational, such as news feeds and weather forecasts. There are also hundreds of video game applications that allow users to play small video games, such as Jetman or Tetris within their profiles. Since most game applications save high scores, friends can compete against each other or against millions of other Facebook users.

Facebook provides an easy way for friends to keep in touch and for individuals to have a presence on the Web without needing to build a website. Since Facebook makes it easy to upload pictures and videos, nearly anyone can publish a multimedia profile. Of course, if you are a Facebook member or decide to sign up one day, remember to use discretion in what you publish or what you post on other user’s pages. After all, your information is only as public as you choose to make it!

1. Facebook is a social network for

A) everyone who is older than 12 years of age
B) college students
C) those who can create profiles
D) those who have access to the Internet

2. A “wall” in Facebook is

A) an open source of information about its user
B) used for public conversations
C) good private messaging
D) a means of viewing photos

3. Facebook allows its users

A) to add persons as friends
B)) to create personal settings
C to make friends
D) to create list of unwanted friends

4. Facebook feature

A) is designed for playing games

B) makes it different from other social networking websites

C) helps to compete against other Facebook users

D) allows the users to add applications programs to their profiles

5. Facebook is good for

A) communication in the net

B) posting news and photos

C) learning rules of behavior in the net

D) presence in the Web

6. Information in Facebook is

A) public

B) private

C) public to certain degree

D) chosen by you

TASK 6

1. Read the article. For questions 1-7, choose the answer (A, B, C or D) which fits the text best.

THE EBAY ADDICTS

Katie is sitting at her computer, eyes glued to the screen. It's 2 am and the eBay auction is about to end. Within minutes the 25-year-old events manager from London will know if she has won another pair of Gucci shoes to add to her collection.

The scene may sound familiar. Indeed, eBay – the Internet auction site – has become a modern phenomenon, with 10 million British users, 135 million worldwide and up to 600,000 joining every month.

The other side-effects of her self-confessed addiction are far more alarming. Katie has spent so much of her year salary on eBay since discovering it in November that she is already £10,000 in debt.

It is not just her finances which are feeling the strain. Her health is also deteriorating under the stress of owing so much, and she has been to see her GP. What horrifies Katie even more is the fact that she can see her personality changing as a result of her addiction: she admits she is now prepared to lie to cover the extent of her problem.

Natalie, 27, from London, who works for a casting agency, also finds taking part in the eBay auctions and hunting for bargains addictive.

“I admit that I am an addict and I probably do need professional help,” she says. “Every day I wake up and say that today I am not going on eBay. But I can't stop myself. It started as my stress-buster from work and now it's the cause of my stress. The thrill of the auction is like a gambling rush.”

These young women are not isolated cases. David Nott, Addictions Programme Manager, is seeing an increasing number of patients with eBay addiction, which he says is a very real condition.

Shopaholism has been recognized as a problem for years. EBay addiction is different because of the combination of shopping and gambling which makes it so compelling and potentially more addictive.

“While a lot of people claim that the possibility of picking up a bargain is what attracts them to eBay, the single biggest thing that tends to keep them coming back is not what they buy, but how they buy it.” Ebay addiction is potentially life-destroying. While it doesn’t have the immediate health implications, it can lead to disrupted sleep, the same types of adrenaline highs and lows and obviously the overspending and consequent financial problems that this entails”.

1. People taking part in the eBay auctions are:

A) a rare case

B) ordinary buyers

C) spread all over the world

D) decreasing in number

2. People visiting eBay auctions are:

A) gamblers

B) addicts

C) shopaholics

D) lonely people

3. According to the author people are attracted in eBay auctions by

A) the rush of excitement
B) anticipation, winning and losing
C) the need to bue things
D) the possibility to pick up a bargain

4. EBay addiction is different from shopaholism because:
A) there is no human interaction
B) it is a combination of shopping and gambling
C) it is more addictive
D) you buy things online

5. David Nott says that the side effects of eBay addiction are:
A) destroyed relationship and stress
B) financial problems
C) deteriorating health and change of personality
D) adrenaline rush, disrupted sleep and financial problems

6. EBay addiction according to David Nott should be treated seriously because:
A) you get hooked
B) it has immediate health implications
C) bidding is exciting
D) it may destroy your life

7. Natalie thinks that her addiction:
A) is self-destructing
B) influences her relationship with parents
C) is the cause of her stress
D) is just a hobby

TASK 7

1. Without reading the text try to predict what it is about.

2. Skim the text. Was your suggestion right or wrong? In what style is the story written?

3. For questions 1-7, choose the most suitable answer (A,B, C, D).

LIGHT VERSE

The very last person anyone would expect to be a murderer Mrs. Avis Lardner. Widow of the great astronaut-martyr, she was a philanthropist, an art collector, an extraordinary hostess, and an artistic genius. But above all, she was the gentlest kindest human being one could imagine.

Mrs. Lardner had received a generous pension, and she had t invested wisely and well. By late middle age she was very wealthy.

Her house was a showplace, a veritable museum, containing a collection of extraordinarily beautiful jeweled objects. She had one of the first jeweled wrist-watches manufactured in America, a jeweled dagger from Cambodia, a jeweled pair of spectacles from Italy, and so on almost endlessly.

All was open for inspection. The artifacts were not insured, and there were no ordinary security provisions. There was no need for anything conventional, for Mrs. Lardner maintained a large staff of robot servants, all of whom could be relied on to guard every item with imperturbable concentration, irreproach-able honesty, and irrevocable efficiency.

Everyone knew the existence of those robots and there is no record of any attempt at theft, ever.

And then, of course, there was her light-sculpture. On each occasion a new symphony of light shone throughout the rooms.

It was for the light-sculpture more than anything else that the guests came. It was never the same twice, and never failed to explore new experimental ave-nues of art.

She was charmingly modest about it. “No, no,” she would protest when someone waxed lyrical. “I wouldn’t call it “poetry in light.’ That’s far too kind. At most, I would say it was mere ‘light verse.’ “And everyone smiled at her gentle wit.

Though she was often asked, she would never create light-sculpture for any occasion but her own parties. “That would be commercialization,” she said.

She had no objection, however, to the preparation of elaborate holograms of her sculptures so that they might be made permanent and reproduced in mu-seums of art an over the world. Nor was there ever a charge for any use that might be made of her light-sculptures.

“I couldn’t ask a penny,” she said, spreading her arms wide. “It’s free to all. After all, I have no further use for it myself.” It was true. She never used the same light-sculpture twice.

When the holograms were taken, she was cooperation itself. Watching benignly at every step, she was always ready to order her robot servants to help. “Please, Courtney,” she would say,” would you be so kind as to adjust the step ladder?”

It was her fashion. She always addressed her robots with the most formal courtesy.

Once, years before, she had been almost scolded by a government functionary from the Bureau of Robots and Mechanical Men. “You can’t do that,” he said severely. “It interferes with their efficiency. They are constructed to follow orders, and the more clearly you give those orders, the more efficiently they follow them. When you ask with elaborate politeness, it is difficult for them to understand that an order is being given. They react more slowly.”

Mrs. Lardner lifted her aristocratic head. “I do not ask for speed and efficiency,” she said. “I ask goodwill. My robots love me.”

The government functionary might have explained that robots cannot love, but he withered under her hurt but gentle glance.

It was notorious that Mrs. Lardner never even returned a robot to the factory for adjustment.

Mrs. Lardner shook her head. “Once a robot is in my house,” she said, “and has performed his duties, any minor eccentricities must be borne with. I will not have him manhandled.”

It was the worst thing possible to try to explain that a robot was but a machine. She would say very stiffly, “Nothing that is as intelligent as a robot can ever be but a machine. I treat them as people.”

She kept even Max, although he was almost helpless.

“But why not have him adjusted?” asked a friend, once.

“Oh, I couldn't. He's himself. He's very lovable, you know.”

“But if he's maladjusted,” said the friend looking at Max nervously, “might he not be dangerous?” “Never,” laughed Mrs. Lardner. “I’ve had him for years. He’s completely harmless and a dear.”

Actually he looked like all the other robots, smooth, metallic, vaguely human but expressionless.

To the gentle Mrs. Lardner, however, they were all individual, all sweet, all lovable. It was the kind of woman she was.

How could she commit murder?

The very last person anyone would expect to be murdered would be John Semper Travis. He was chief engineer of U.S. Robots and Mechanical Men, Inc.

But he was also an enthusiastic amateur in light-sculpture. He had written a book on the subject, trying to show that the type of mathematics he used in working out positronic brain-paths might be modified into a guide to the production of aesthetic light-sculpture.

His attempt at putting theory into practice was a dismal failure, however. The sculptures he himself produced, following his mathematical principles, were stodgy, mechanical, and uninteresting.

It was the only reason for unhappiness in his quiet, introverted, and secure life, and yet it was reason enough for him to be very unhappy indeed. He knew his theories were right, yet he could not make them work. If he could but produce one great piece of light-sculpture.

Naturally, he knew of Mrs. Lardner's light-sculpture. She was universally hailed as a genius, yet Travis knew she could not understand even the simplest aspect of robotic mathematics. He had corresponded with her but she consistently refused to explain her methods, and he wondered if she had any at all. Might it not be mere intuition? But even intuition might be reduced to mathematics. Finally he managed to receive an invitation to one of her parties. He simply had to see her.

Mr. Travis arrived rather late. He greeted Mrs. Lardner with a kind of puzzled respect and said, "That was a peculiar robot who took my hat and coat."

"That is Max," said Mrs. Lardner.

"He is quite maladjusted, and he's a fairly old model. How is it you did not return it to the factory?"

"Oh, no," said Mrs. Lardner. "It would be too much trouble."

"None at all, Mrs. Lardner," said Travis. "You would be surprised how simple a task it was. Since I am with U. S. Robots, I took the liberty of adjusting him myself. It took no time and you'll find he is now in perfect working order."

A queer change came over Mrs. Lardner's face. Fury found a place on it for the first time in her gentle life.

"You adjusted him?" she shrieked. "But it was he who created my light-sculptures. It was the maladjustment, the maladjustment, which you can never restore, that -that -"

It was really unfortunate that she had been showing her collection at the time and that the jeweled dagger from Cambodia was on the marble tabletop before her.

Travis's face was also distorted. “You mean if I had studied his uniquely maladjusted positronic brain-paths I might have learned -”

She lunged with the knife too quickly for anyone to stop her and he did not try to dodge. Some said he came to meet it — as though he wanted to die.

1. *Mrs. Lardner was wealthy because*_____

A) she had sold some beautiful jeweled objects

B) she had invested her pension wisely

C) she created light-sculpture for rich people

D) she had come into a fortune

2. *Mrs. Lardner's artifacts were not insured because*_____

A) she was not afraid of thieves

B) they were fakes

C) robot servants guarded them

D) the house had a good burglar alarm

3. *The main reason why the guests came to Mrs. Lardner's house was*_____

A) to look at the collection of jeweled objects

B) to see robot servants

C) to admire the light-sculpture

D) to enjoy her hearty welcome

4. *Mrs. Lardner treated her robots*_____

A) as if they were people

B) like servants

C) like slaves

D) as if they were her children

*5. Mrs. Lardner kept Max in spite of the fact that he was*_____

A) dangerous

B) slow

C) expressionless

D) maladjusted

6. *John Semper Travis was unhappy because*_____

A) he could not produce beautiful light-sculpture

B) he did not understand the simplest aspects of robotic mathematics

C) Mrs. Lardner had not invited him to her party

D) many of the robots that he had produced reacted slowly

7. *Mrs. Lardner killed Travis because*_____

A) he wanted to steal the jeweled dagger from Cambodia

B) he had adjusted Max

C) he had created light-sculpture which was better than hers

D) he wanted to die

TESTS

Unit I

1. Scan the text. Choose the sentences A-G and fill in the gaps (0-5). There is one extra sentence which you don't need. The first sentence is an example (0).

MACHINE TRANSLATIONS

A. It isn't just users who have trouble with evaluation.

B. A new machine translation system has been recently developed.

C. Developers are looking for bigger, better test suites to help to keep such bugs under control.

D. If one system produces vastly more errors than another, it is obviously inferior.

E. To offer a useful saving, the machine must make the time the translator spends significantly less than he or she would have taken by hand.

F. The big problem with MT systems is that they don't actually translate: they merely help translators to translate.

G. But just what is a good translation?

There are a lot of different machine translation systems you can use. [0/F]

All machine-translated texts have to be extensively post-edited (and often pre-edited) by experienced translators. [1/]

Inevitably, the MT manufacturers' glossies talk blithely of "a 100 per cent increase in throughput", but scepticism remains. Potential users want to make their own evaluation, and that can tie up key members of the corporate language centre.

Take error analysis, a fancy name for counting the various types of errors the MT system produces. [2/]. But suppose they produce different types of error in the same overall numbers: which type of error is worse? Some errors are bound to cost translators more effort to correct, but it requires a lot more work to find out which.

[3/]. Elliott Macklovitch, of Canada, described an evaluation of a large commercial MT system, in which he analysed the error performance of a series of software updates only to find that not only had there been no significant improvement, but the latest release was worse.

And bugs are still common. Using a “test suite” of sentences designed to see linguistic weaknesses, researches in Stuttgart found that although one large system could cope happily with various complex verb-translation problems in a relative clause, it fell apart when trying to do exactly the same thing in a main clause. [4/].

Good human translators produce good translations; all MT systems produce bad translations. [5/] One traditional assessment technique involves a bunch of people scoring translations on various scales for intelligibility; accuracy; style, and so on. However, such assessment is expensive, and designing the scales is something of a black art.

Properly designed and integrated MT systems really ought to enhance the translator's life, but few take this on trust.

Unit II

1. Read the text and complete each gap with the correct form of the word in capitals.

COMPUTER THAT PLAY GAMES

Computers have had the (1)_____ to play chess for many years now, and their (2)_____ in games against the best player in the world has shown steady (3) _____. However it will be years before the designers of computer games machines can beat their (4)_____ challenge yet– the ancient board game called ‘Go’. The play area is (5)_____ larger than in chess and there are far more pieces, so that the (6) _____ of moves is almost (7)_____. The game involves planning so many moves ahead that even the (8)_____ calculations of the fastest modern computer are(9)_____ to deal with the problems of the game. In recent 10)_____ for compute ‘Go” machines, the best machine beat all its rivals, but lost (11)_____ to three young school children, so there is _____ still a lot work to do	ABLE PERFORM IMPROVE BIG CONSIDER COMBINE END IMPRESS SUFFICIENT COMPETE HEAVY OBVIOUS

Unit III

1. Look through the title of the text. What sort of topics do you think the author will be dealing with?

2. Skim through the text. Get a general idea of what the author has to say.

3. List out all revolutionary developments the author describes and fill in the table.

A LINGUISTIC REVOLUTION: LANGUAGE AND THE INTERNET

A linguist cannot help but be impressed by the Internet. It is an extraordinarily diverse medium. The World Wide Web, in particular, offers a home to virtually all the styles that have so far developed in the English language-newspapers, scientific reports, bulletins, novels, poems, prayers – you name it, you'll find a page on it. Indeed, it is introducing us to styles of written expression which none of us have ever seen before. It has often been said the Internet is a revolution – yes, indeed, but it is also a linguistic revolution.

The Internet is not a single thing. It consists of several domains – e-mails, the World Wide Web, chatrooms and the world of fantasy games. Each offers us possibilities of human communication.

What is revolutionary about e-mails is called *framing*. You receive a message which contains, say, three different points in a single paragraph. You can, if you want, reply to each of these points by taking the paragraph, splitting it up into three parts, and then responding to each part separately, so that the message you send back then looks a bit like a play dialogue. Then, your sender can do the same thing to your responses, and when you get the message back, you see his replies to your replies. You can then send the lot onto someone else for further comments, and when it comes back there are now three voices framed on the screen. And so it can go on – replies within replies within replies – all unified within the same screen typography. There's never been anything like this in the history of human written communication.

The pages of the Web offer a different kind of revolutionary development. The one thing we can say about traditional writing is that it is permanent. You open a book at page 6, close the book, then open it at page 6 again. You expect to see the same thing. You would be more than a little surprised if the page had

changed in the interim. But this kind of impermanence is perfectly normal on the Web – where indeed you can see the page changing in front of your eyes.

Words appear and disappear, in varying colours. Sentences slide onto the screen and off again. Letters dance before your eyes. The Web is truly part of a new, animated linguistic channel – more dynamic than traditional writing, and more permanent than traditional speech. It is neither speech nor writing. It is a new medium.

Real-time Internet discussion groups – chatrooms – also offer a revolutionary set of possibilities. You see on your screen messages coming in from all over the world. If there are 30 people in the room, then you could be seeing 30 different messages, all making various contributions to the theme, but often clustering into half a dozen or more sub-conversations. It has never been possible before in the history of human communication, to "listen" to 30 people at once. Now you can. Moreover, you can respond to as many of them as your mental powers and typing speed permit. This too is a revolutionary state of affairs, as far as speech is concerned.

But there is a further reason for the revolutionary status of the Internet – the fact that it offers a home to all languages. Its increasingly multilingual character has been the most notable change since it started out – not very long ago – as a totally English medium. By the mid-1990s about 80% of the Internet was in English.

Since then, estimates for English have been steadily falling. A recent Global Reach survey estimated that people's Internet access in non-English speaking countries increased between 1995 and 2000 from 7 million to 136 million. In certain countries, the local language is already dominant. According to one Japanese Internet author, Yoshi Mikami, 90% of Web pages in Japan are already in Japanese.

My feeling is that the future looks good for Web multilingualism. The Web offers a World Wide Welcome for global linguistic diversity.

N	Technology	Features

Unit IV

1. Scan the text and mark the statements (1-6) in the table True or False

ADDRESS BAR

An address bar is a text field near the top of a Web browser window that displays the URL of the current webpage. The URL, or web address, reflects the address of the current page and automatically changes whenever you visit a new webpage. Therefore, you can always check the location of the webpage you are currently viewing with the browser's address bar.

While the URL in the address bar updates automatically when you visit a new page, you can also manually enter a web address. Therefore, if you know the URL of a website or specific page you want to visit, you can type the URL in the address bar and press Enter to open the location in your browser.

The URL typically begins with "http://", but most browsers will automatically add the HTTP prefix to the beginning of the address if you don't type it in.

The appearance of the address bar varies slightly between browsers, but most browsers display a small 16x16 pixel icon directly to the left of the URL. This icon is called a “favicon” and provides a visual identifier for the current website. Some browsers also display an RSS feed button on the right side of the address bar when you visit a website that offers RSS feeds. In the Safari web browser, the address bar also doubles as a progress bar when pages are loading and includes a refresh button on the right side. Firefox includes a favorites icon on the right side of the address bar that lets you add or edit a bookmark for the current page.

The address bar is sometimes also called an “address field”. However, it should not be confused with a browser toolbar, such as the Google or Yahoo! Toolbar. These toolbars typically appear underneath the address bar and may include a search field and several icons.

True/False Statements

Statement	*True*	*False*
1. A text field that displays the URL of the webpage is an address bar		
2. An address bar helps to view the location of the webpage		

3. As soon as you visit a new page you manually update URL		
4. The HTTP prefix is usually automatically added in the beginning of the address		
5. "Favicon" is an icon which provides information about browsers.		
6. The term "address field" corresponds to the address bar		

Unit V

1. Read the text "What Price Privacy". For each statement find the correct answer A-D

WHAT PRICE PRIVACY?

Don't blame technology for threatening our privacy: it's the way the institutions choose to use it.

The most depressing moment of my day is first thing in the morning, when I download my overnight batch of emails. Without fail, it will contain dozens of messages from people who, knowing my interest in the subject, write to me describing violations of their personal privacy. Throughout the day, the stream continues, each message in my inbox warning of yet another nail in the coffin of personal privacy.

So, when those of us who value personal privacy are asked for their view, we will invariably speak in disparaging terms about such technologies. In an effort to stem the speed and force of the invasion, we will sometimes argue that the technologies themselves should simply be banned. But things are not so simple. Technology can offer enormous benefits to individuals and to society. To prohibit a technology on the grounds that it is being used to invade privacy would also be to deny society the benefits of that innovation.

The sensible perspective is that technology does not necessarily have to invade privacy. In the reality it does. Companies may well argue that customers are prepared to "trade off a little privacy in return for better service or a cooler and more sophisticated product". This is a matter of free choice. I doubt that there is any genuine free choice in the matter. Whether I go with Orange or Vodaphone is indeed a free choice. But I have no choice over whether my communications data

will or will not be stored by my communications provider. They know the location of my mobile and the numbers from which I received calls, and the emails I send are routinely stored by all providers, whether I like it or not.

CCTV also gives me no free choice. Its purpose may be to keep me secure, but I have no alternative but to accept it. Visual surveillance is becoming a fixed component in the design of modern urban centres, new housing areas, public buildings and even throughout the road system. Soon, spy cameras will be part of all forms of architecture and design. Of course, there is another side to the coin, many technologies have brought benefits to the consumer with little or no cost to privacy. Encryption is one that springs to mind. Many of the most valuable innovations in banking and communications could never have been deployed without this technique.

The problem with privacy is not technology, but the institutions which make use of it. Governments are hungry for data, and will use their powers to force companies to collect, retain and yield personal information on their customers. Governments have managed to incorporate surveillance into almost every aspect of our finances, communication and lifestyle. They acknowledge the privacy a fundamental right, but they argue that surveillance maintains law and order and creates economic efficiency. The right to privacy should not be allowed to stand in the way of the wider public interest. This argument is sound in principle, but there seems little intellectual or analytical basis for its universal and unquestioned application.

When the UK government introduced the RIP legislation in 2000, it originally intended to allow an unprecedented degree of communications interception on the grounds that the dangers of crime on the Internet warranted increased surveillance. At no time did anyone produce much evidence for this crime wave, however, nor did anyone in government seem to think any was required. It was left to an eleventh-hour campaign by civil rights activists to block the more offensive elements of the legislation from a personal privacy point of view. Such lack of prior justification is a common feature of privacy invasion for law enforcement and national security purposes.

Technology does not have to be the enemy of privacy. But while governments insist on requiring surveillance, and while companies insist on amassing personal information about their customers, technology will continue to be seen as the enemy of privacy.

From the first paragraph, we understand that the writer
A resents receiving such distressing emails from people.
B is surprised that people should contact him about privacy.
C finds it hard to cope with the tone of the emails he receives.
D is resigned to the fact that invasions of privacy are on the increase.

The second paragraph the writer speaks about
A People should be willing to do without certain forms of technology.
B It is a mistake to criticize people for the way they use technology.
C It is unrealistic to deny people the benefits that technology can bring.
D People shouldn't be allowed to use technologies that threaten privacy.

The writer feels that some companies
A do not really give customers a say in issues related to privacy.
B fail to recognize that their products may invade people's privacy.
C underestimate the strength of their customers' feelings about privacy.
D refuse to make compromises with customers concerned about privacy.

What point does the writer make about CCTV?
A People no longer question how necessary it is.
B People feel more secure the more widely it is used.
C It ought to be a feature of all new building projects.
D it would be difficult for society to function without it.

The writer gives encryption as an example of a technology which
A brings only questionable benefits to society in general.
B poses much less of a threat to privacy than others.
C actually helps us to protect personal privacy.
D is worth losing some personal privacy for.

In the fifth paragraph, the writer suggests that governments are
A justified in denying the right of privacy to criminals.
B mistaken in their view that surveillance prevents crime.
C wrong to dismiss the individual's right to privacy so lightly.
D unreasonable in their attitude towards civil rights campaigners.

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