МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ

ХАРКІВСЬКИЙ НАЦІОНАЛЬНИЙ ЕКОНОМІЧНИЙ УНІВЕРСИТЕТ ІМЕНІ СЕМЕНА КУЗНЕЦЯ

**Збірник практичних завдань
з англійської мови
для студентів II курсу галузі знань
0501 "Інформатика та обчислювальна техніка"
денної форми навчання**

Затверджено на засіданні кафедри іноземних мов.
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Подано практичні завдання з лексики англійської мови з метою систематизації
знань студентів у сфері інформаційних систем та технологій.
Рекомендовано для студентів II курсу галузі знань 0501 "Інформатика та обчислю-
вальна техніка" денної форми навчання.

Вступ

Збірник практичних завдань з навчальної дисципліни "Іноземна мова" розроблено для студентів 2-го курсу галузі знань 0501 "Інформатика та обчислювальна техніка" денної форми навчання та організовано відповідно до завдань та умов вивчення іноземних мов у вищих навчальних закладах немовного профілю.

Вправи розроблено до підручника "Principles of Information Systems. A Managerial Approach" авторів Stair R. M., Reynolds G. W., що забезпечує міжпредметний зв'язок та спрямовує студентів на розвиток фахових компетенцій із застосуванням англійської мови.

Метою роботи є поглиблення знань та вдосконалення мовленнєвих компетенцій студентів з англійської мови у сфері інформаційних систем та технологій. Вона спрямована на збагачення і розширення активного та пасивного словника студентів шляхом засвоєння термінології за допомогою лексичних завдань; вдосконалення навичок побудови діалогічних та монологічних висловлювань, обговорення запропонованих тем та проблем.

Завдання розроблені на основі поетапного засвоєння знань, на базі якого у студентів будуть сформовані мовні компетенції з англійської мови. Студенти вдосконалюватимуть навички обговорення професійних проблем на основі питань до різноманітних професійних тем, пов'язаних з тематикою навчальної дисципліни.

Контроль знань, вмінь та навичок студентів може здійснюватися під час виконання завдань, термінологічних диктантів та обговорення поставлених проблем.

Unit 1
Information Systems in the Global Economy.
Porsche AG, Germany

Task 1. Comprehension questions.
1. What innovations has the Porsche Company implemented?
2. How are companies using computer hardware to compete and meet their business objectives?
3. How do organizations go about selecting computer hardware and what must you know to assist in the process?
4. Do you think it is worth investing much money in hardware?
5. Can the new processing requirements be met in any other way without buying new hardware?

Task 2. Say whether the statements below are true or false.
1. The Porsche Company has sales offices only in Germany.
2. The company was the third of the automakers to introduce ERP.
3. Porsche plans to use new ERP software modules to support additional business processes.
4. Employees of the PIKS are responsible for planning and operating the IS infrastructure for only one subsidiary.
5. PIKS decided to replace its old servers with new ones.

Task 3. Fill in the gaps with the appropriate words.
Reliable and available, production plan, upgraded, transactions, servers, hardware(2), information systems, storage systems, processing, requirements, ERP.

1. Porsche must employ ... as cutting edge as its cars.
2. The company was one of the first to introduce ... software to support its accounting, finance, purchasing.
3. It chose then the state-of-the-art V-class ... as the underlying computer ... .
4. Over the years, however, the volume of ... its system must handle has more than doubled.
5. The company built a new ... for the Cayenne and Carerra GT.
6. Its 86 employees are responsible for planning and operating the IS infrastructure, including networks, servers, security systems and … .

7. For over a year, PIKS evaluated several different computer manufacturers and hardware options to meet the new … .

8. Obviously, the new … must work well with existing components of the infrastructure.

9. Importantly, the new hardware must be extremely ... and ... .

10. Superdome server can be ... to processors from the Intel Itanium processor family to double the processing capability.

Task 4. Find the words in the text to match the definitions given below.

1. A set of interrelated components that collect, manipulate, store and disseminate data and information and provide a feedback mechanism to meet an objective. (par. 2)

2. The computer programs that govern the operation of the computer. (par. 2)

3. A set of integrated programs capable of maintaining a company's vital business operations for an entire multisite, global organization. (par. 2)

4. Connected computers and computer equipment in a building, around the country, or around the world to enable electronic communications. (par. 3)

5. Any machinery that assists in the input, processing, storage and output activities of an information system. (par. 3)

Task 5. Points for discussion.
1. What role do information systems play in the global economy?
2. How can information systems be connected with Porsche AG?
3. Can any enterprise be a leader without updated software and hardware?
4. What new requirements to the hardware can appear nowadays?
5. Are there any disadvantages of the information systems?

Task 6. Match the words with their definitions.

1. Information system	a) the computer programs that govern the operation of the computer
2. Software	b) a set of interrelated components that collect, manipulate, store and disseminate data and information and provide a feedback mechanism to meet an objective
3. ERP	c) any machinery that assists in the input, processing, storage and output activities of an information system

4. Network	d) a set of integrated programs capable of maintaining a company's vital business operations for an entire multisite, global organization
5. Hardware	e) connected computers and computer equipment in a building, around the country, or around the world to enable electronic communications
6. Transaction	f) a part of a computer, such as the central processing unit, that performs calculations or other manipulations of data
7. Processor	g) the transmission and processing of an item of data

Unit 2
Computer Systems: Integrating the Power of Technology

Task 1. Comprehension questions.

1. Why is it difficult to put together a complete computer system?

2. Is it important to apply business understanding to reach necessary hardware decisions?

3. Why did all the mentioned companies choose different types of computer hardware?

4. What are the components of all information systems?

5. What should you consider when selecting computer hardware?

Task 2. Say whether the statements below are true or false.

1. In an effective and efficient system, components are selected and organized with no understanding of the inherent trade-offs between overall system performance and cost, control and complexity.

2. People selecting their organization's computer hardware must have a clear understanding of the business requirements.

3. Specialized Bicycles selected computer hardware that could rapidly increase computing capacity.

4. The components of all information systems are independent of each other.

5. Your choice of a particular computer system should always allow for later innovations.

Task 3. Fill in the gaps with the appropriate words.

Electronic commerce, computing capacity, computer system, application software, improvements, inventory control, processing costs, mainframe computers, computer hardware, interdependent.

1. Putting together a complete … is more involved than just connecting computer devices.

2. ARZ is interested in reducing ..., maintaining sufficient capacity to handle an increasing workload.

3. ARZ selected two large, extremely powerful IBM z-Series … . To handle the workload.

4. Continental Technology Group needed a safe, reliable, and user-friendly development environment to write new … .

5. Continental Technology Group uses Non-Stop server for financial transactions and in … industries.

6. Specialized Bicycles selected computer hardware that could rapidly increase … .

7. Sullivan Street Bakery's new computers can support billing and … .

8. Assembling the right … requires an understanding its relationship in the information system.

9. The components of any information system are ... .

10. The choice of a computer system must allow for later … in the overall information system.

Task 4. Find the words in the text to match the definitions given below.

1. Large, powerful computer often shared by hundreds of concurrent users connected to the machine via terminals. (par. 4)

2. The computer programs that govern the operation of the computer. (par. 5)

3. A measure of what is produced divided by what is consumed. (par. 2)

4. A set of tools, devices, a kit, etc., assembled for a specific purpose. (par. 6)

5. Something that improves especially an addition or alteration. (par. 11)

Task 5. Points for discussion.

1. Prove or disprove the point that technology has great power in modern world.

2. Explain why it is important to know business requirements in selecting computer hardware.

3. Why do different organizations require different hardware systems?

4. Advise what computer hardware is needed for a music instrument shop.

5. What other components of information system do you consider important?

Task 6. Match the words with their definitions.

1. Mainframe computer	a) the ability to process data and information
2. Software	b) large, powerful computer often shared by hundreds of concurrent users connected to the machine via terminals
3. Computer system	c) a system of one or more computers and associated software with common storage
4. Computing capacity	d) the computer programs that govern the operation of the computer
5. Equipment	e) a set of tools, devices, kit, etc., assembled for a specific purpose

Unit 3
Hardware Components. Hardware Components in Action

Task 1. Comprehension questions.
1. What hardware components can you name?
2. What is a central processing unit and what are its components?
3. Explain what takes place during the instruction phase.
4. What happens during the last step of the instruction phase?
5. What is pipelining?

Task 2. Say whether the statements below are true or false.
1. Computer system hardware components include devices that perform 3 functions.
2. Each CPU consists of three associated elements.
3. Registers are low-speed storage areas used to temporally hold small units of program instructions and data.
4. The fetch stage receives a program's instruction from the processor.
5. The execution stage is where the hardware element carries out the instruction.

Task 3. Fill in the gaps with the appropriate words.

Processor, computation, machine cycle, memory, process, execution phase, ALU, instruction phase, registers, hardware element.

1. The ability to … data is a critical aspect of a computer system.
2. The … performs mathematical calculations and makes logical comparisons.
3. … are high-speed storage areas used to temporally hold small units of program instructions.
4. … holds program instructions and data immediately before or immediately after the registers.
5. The fetch stage reads a program's instructions and any necessary data into the … .
6. The execution of any machine-level instruction involves two phases: the instruction phase and the … .
7. Steps 1 and 2 are called the … .
8. The execution stage is where the … carries out the instruction.
9. This could involve making arithmetic ..., logical comparison, bit shift, or vector operation.
10. The instruction phase followed by the execution phase is called a … .

Task 4. Find the words in the text to match the definitions given below.

1. The part of the computer that consists of three associated elements: the ALU, the control unit, and the register areas. (par. 2)
2. The portion of the CPU that performs mathematical calculations and makes logical comparisons. (par. 2)
3. The part of the computer that holds program instructions and data. (par. 3)
4. The instruction phase followed by the execution phase. (par. 10)
5. A form of the CPU operation in which there are multiple execution phases in a single machine cycle. (par. 10)

Task 5. Points for discussion.

1. What hardware components does your computer consist of?
2. Describe possible characteristics of a CPU.
3. What output and input devices can be connected to a computer?
4. On what does the speed of work of the computer depend?
5. Describe the process of the execution of an instruction.

Task 6. Match the words with their definitions.

1. Pipelining	a) the time it takes to perform the fetch-instruction and decode-instruction steps of the instruction phase
2. Primary storage	b) high-speed storage area in the CPU used to temporarily hold small units of program instructions and data immediately, before, during and after the execution of the CPU
3. CPU	c) a form of the CPU operation in which there are multiple execution phases in a single machine cycle
4. ALU	d) the part of the computer that consists of three associated elements: the ALU, the control unit, and the register areas
5. Machine cycle	e) the part of the computer that holds program instructions and data
6. Execution time	f) the portion of the CPU that performs mathematical calculations and makes logical comparisons
7. Control unit	g) the instruction phase followed by the execution phase
8. Register	h) the part of the CPU that sequentially accesses program instructions, decodes them, and coordinates the flow of data in and out of the ALU
9. Instruction time	i) the time it takes to execute an instruction and store the results

Unit 4
Processing Characteristics and Functions

Task 1. Comprehension questions.

1. What is machine cycle time and how is it measured?
2. Is it easy to compare the processing speed of different computers?
3. What is the essence of Moore's Law?
4. What is superconductivity?
5. What are the differences between complex and reduced Instruction Set Computing?

Task 2. Say whether the statements below are true or false.

1. There is a variety of measures including clock speed and the time needed to gauge processing capacity of a computer.
2. The shorter the interval between pulses of the CPU clock, the faster it executes microcode instructions.

3. Computers with smaller wordlength can transfer more data between devices.

4. Superconductivity allows current to flow with minimal resistance which reduces the processing speed.

5. The McPower PC chip can perform such functions as voice recognition, pen input, dictation, etc.

Task 3. Fill in the gaps with the appropriate words.

Microcode, instruction, digital circuits, wordlength, optical processors, superconductivity, clock speed, bus lines, RISC, pipelining.

1. Computers with larger … can use the larger number of bits to address more memory locations.

2. A CPU produces a series of electronic pulses at a certain rate which determines … .

3. Some companies are experimenting with … which use light waves instead of electrical current.

4. Each … instruction takes the same time as the interval between electronic pulses.

5. From the CPU data are transferred via … to other system components.

6. Certain metals have … that allows current to flow with minimal electrical resistance.

7. The machine cycle is measured in terms of a number of … executed in a second.

8. A new approach to chip design is called … and it involves a reduced number of microcode instructions built into a chip.

9. Most CPUs are collections of … imprinted on silicon chips.

10. Most RISC chips use … which helps execute multiple instructions in a single machine cycle.

Task 4. Find the words in the text to match the definitions given below.

1. Steps performed by the computer processor for each machine language instruction received.

2. Circuitry that directs operations within the computer processor by directing the input and output of a computer systems.

3. One of processing characteristics that involves ability to process relatively easy instructions.

4. A complete path of wires and equipment along which an electric current flows.

5. A measure of the processing speed consisting of a thousand billion floating-point operations a second.

Task 5. Points for discussion.

1. Describe your computer in terms of its processing characteristics. What convinced you to choose this model?

2. Which opportunities may the enlarging of the computer wordlength create? Explain and give examples.

3. The hypothesis known as Moore's Law states that in a few years chip-makers will need new ways to decrease the minimum width of basic circuit features of chips. Can you predict how they will solve this problem?

Task 6. Match the words with their definitions.

1. Pipelining	a) a measure of processing speed, consisting of a thousand billion floating-point operations a second
2. Control unit	b) steps performed by the computer processor for each machine language instruction received
3. Machine cycle	c) a device, such as a transistor or integrated circuit, that depends on the properties of such a substance
4. Memory location	d) a processing characteristic that involves the ability to process relatively easy instructions
5. Processing capability	e) connecting a set of data processing elements in series, so that the output of one element is the input of the next one
6. Circuit	f) a central (or sometimes distributed but clearly distinguishable) part of a mechanism, e.g. a computer, which controls its operation
7. Semiconductor	g) the complete path of wires and equipment along which electric current flows
8. Teraflop	h) to carry out; to complete; to perform
9. To manipulate	i) to handle or use, esp. With some skill, in a process or action
10. To execute	j) a data concept, used at various levels by software and hardware to access the computer's primary storage memory; a fixed-length sequence of bits conventionally displayed and manipulated as unsigned integers

Unit 5
Memory Characteristics and Functions

Task 1. Comprehension questions.
1. How are data stored in a computer?
2. What types of memory can you name?
3. What is cache memory? How many types of cache memory are there and what are they?
4. How long does it take to retrieve information from different levels of cache memory?
5. Why is memory capacity important in the effective operation of CBIS?

Task 2. Say whether the statements below are true or false.
1. Memory devices contain thousands of circuits imprinted on a silicon chip.
2. ROM chips are mounted directly on the computer's main circuit board or in other chips.
3. The contents of ROM are lost when the power is removed.
4. Over the past decade microprocessor speed has been tripling every 18 months.
5. If the data are not in any cache, the CPU requests data from the main memory.

Task 3. Fill in the gaps with the appropriate words.
RAM, switches, storage area, execute, cache memory, non-volatile, storage capacity, CPU chip, PROM, memory chip.

1. Main memory provides working … for program instructions and data.
2. Most often … is measured in bytes with one byte equal to one character.
3. Instructions are temporarily stored on … which is volatile.
4. A common use of … chips is for storing the instructions to popular video games.
5. Frequently used data are stored in easily accessible … instead of RAM.
6. The Level 1 cache memory is placed on the … .
7. Ram chips consist of millions of … that are sensitive to changes in electric current.
8. Read-only memory is usually … so its content is lost not when the power is off.

9. EPROM is similar to PROM but the … can be erased.

10. With cache memory the CPU can … instructions much faster.

Task 4. Find the words in the text to match the definitions given below.

1. Not retaining the stored information when the power supply is cut off.

2. A board that holds electrical circuits inside a piece of electrical equipment.

3. A small piece of electronic equipment that stores computer data.

4. The degree to which a product, device, service, or environment is available to as many people as possible; the ability to access and benefit from some system or entity.

5. The central memory-storage facility in a computer.

Task 5. Points for discussion.

1. Memory has recently become the bottleneck to higher performance. Think of ways it can be extended in order to meet the present-day demands.

2. Memory is still rather expensive compared with other types of secondary storage. Are there any ways to reduce its cost in the nearest future?

Task 6. Match the words with their definitions.

1. Volatile	a) a form of digital memory which is used to store programs permanently; the programming is applied after the device has been constructed
2. To mount	b) to fix securely to a support; to set in position for use
3. Circuit board	c) a type of memory chip that retains its data when its power supply is switched off; an array of floating-gate transistors individually programmed by an electronic device that supplies higher voltages than those normally used in digital circuits
4. To plug into	d) to connect (an electrical appliance) with a power source by means of an electrical plug
5. PROM	e) system that stores information in case one needs to retrieve or restore and manipulate the data
6. EPROM	f) not retaining stored information when the power supply is cut off
7. Accessibility	g) the maximum data rate of a channel between a user site and a network, as defined by the bandwidth of the access link available for data transmission

8. Main memory	h) a board that holds electrical circuits inside a piece of electrical equipment
9. Access rate	i) the degree to which a product, device, service, or environment is available to as many people as possible; the ability to access and benefit from some system or entity
10. CBIS	j) the central memory-storage facility in a computer

Unit 6
Multiprocessing

Task 1. Comprehension questions.

1. What is multiprocessing?

2. What forms of multiprocessing can you name?

3. Which companies use symmetrical multiprocessing to solve their production tasks?

4. What are the functions of the central and the controlling servers in grid computing?

5. What was the aim of the Big Mac experiment?

Task 2. Say whether the statements below are true or false.

1. Coprocessors can be internal and external and they have the same clock speed as the CPU.

2. In parallel processing each part of a business problem is solved by the same processor.

3. Massively parallel processing can analyze data to create the information necessary to build an effective marketing program.

4. The grid may include millions of computers that run collectively to solve large processing problems.

5. Symmetrical multiprocessing is a form of parallel processing in which multiple processors run a single copy of the operating system.

Task 3. Fill in the gaps with the appropriate words.

SMP, network, coprocessors, processing capability, grid, parallel, processing, central server, data, to manipulate output.

1. One form of multiprocessing involves … that speed processing by executing specific types of instructions.

2. With … a business problem is divided into several parts.

3. In … processors run a single copy of the operating system and share the memory of one computer.

4. The controlling server divides the task and assigns the work to computers on the … .

5. If a member of the grid fails to complete the subtask, the … restarts the task.

6. The processors in the Big Mac experiment are linked by a high-speed … called Infiniband.

7. The … of SMP systems isn't proportionally greater than that of single processor systems.

8. The results from each processor are assembled to get the final … .

9. A graphics coprocessor chip decreases the time it takes … graphics.

10. Massively parallel processing systems can coordinate large amounts of … and access them with greater speed.

Task 4. Find the words in the text to match the definitions given below.

1. To handle or use, esp. with some skill, in a process or action.

2. A microprocessor circuit that operates alongside and supplements the capabilities of the main processor, providing, for example, high-speed arithmetic.

3. A collection of computer resources from multiple administrative domains to work in a coordinated manner to reach a common goal.

4. Part of the computer that provides the necessary functionality for handling event information, node management and performance monitoring.

5. Capable of being used together without special modification or adaptation.

Task 5. Points for discussion.

1. Which way can multiprocessing facilitate present-day business processes? Give examples.

2. What are the advantages of grid computing? How can business organizations benefit from implementing grid computing? Can you think of any disadvantages?

Task 6. Match the words with their definitions.

1. CPU	a) the set of software that controls the overall operation of a computer system, typically by performing such tasks as memory allocation, job scheduling, and input/output control
2. Instruction	b) a part of a program consisting of a coded command to the computer to perform a specified function

3. To manipulate	c) the information operated on by a computer program
4. Data	d) only relevant or applicable for a short period of time
5. Operating system	e) the part of a computer that performs logical and arithmetical operations on the data as specified in the instructions
6. Grid	f) part of the computer that provides the necessary functionality for handling event information, node management and performance monitoring
7. Central server	g) to handle or use, esp. with some skill, in a process or action
8. Compatible	h) a distributed system with non-interactive workloads that involve a large number of files
9. Time-sensitive	i) a smaller part of the parent task into which it can be assigned and tracked separately in a project
10. Subtask	j) capable of being used together without special modification or adaptation

Unit 7
Secondary Storage. Access Methods

Task 1. Comprehension questions.
1. What role does the computer play in your life?
2. How often do you use the Internet in your life, study, and job?
3. Do you know what secondary storage is?
4. Why is secondary storage device needed?
5. What do you think if it helps in your future career?

Task 2. Say whether the statements below are true or false.
1. The amount of data that companies store digitally is increasing at a rate of 60 % annually.
2. Secondary storage is less expensive and slower than memory.
3. Primary characteristics of the secondary storage are access method, capacity and portability.
4. Sequential access means that data can be retrieved directly without the need to pass by other data in sequence.
5. Direct access means that data must be accessed in order in which it is stored.

Task 3. Fill in the gaps with the appropriate words.

IT, computer animation, electronic computers, software, computers and information, integration, transmitting, technologies, database, information systems.

1. Information technologies deal with the use of … in order to process, store and transmit information.

2. People usually associate IT with the use of … .

3. To communicate in the computer net means … information from one computer to another.

4. The details of each call taken by the receptionist in the call centre are stored in a … .

5. To keep within the budget of a new … was a great achievement.

6. Computers offer a great degree of … in the way work in any field is organized.

7. Managers in the IT industry are facing some real challenges but developing new … . They are not difficult to cope with.

8. The study of ... originated as a sub-discipline of computer science, in an attempt to understand and rationalize the management of technology within organizations.

9. A new employee managed to load down the … in a few minutes.

10.   … is the art of creating moving images via the use of computers.

Task 4. Match the words from the text with the definitions given below.

1. A storage medium that holds information until it is deleted or overwritten regardless if the computer has power.

2. Access to a computer data file that requires the user to read through the file from the beginning in the order in which it is stored.

3. A portable computer is a personal computer that is designed to be easily transported and relocated, but is larger and less convenient to transport than a notebook computer.

4. A machine or tool used for a specific task.

5. A disk coated with plastic that can store digital data as tiny pits etched in the surface; is read with a laser that scans the surface.

Task 5. Points for discussion.

1. What is permanent storage?

2. What advantages does secondary storage have?

3. Why is secondary storage less expensive than memory?
4. What are the primary characteristics of the secondary storage?
5. What does sequential access mean?

Task 6. Match the words with their definitions.

1. Data	a) devices that store larger amounts of data, instructions, and information more permanently than allowed with main memory
2. Secondary storage	b) a common form of optical disc on which data, once it has been recorded, cannot be modified
3. CD-R	c) retrieved method in which data must be accessed in the order to in which it is stored
4. CD-RW.	d) retrieval method in which data can be retrieved without the need to read and discard other data
5. CD-ROM	e) raw facts such as an employee's name or number of hours worked in a week, inventory part numbers, or sales orders
6. Direct access	f) sequential access storage device – device used to sequentially access secondary storage data
7. Information system	g) computer small enough to be carried easily
8. Portable computer	h) an optical disc that allows personal computer users to replace their disks with high capacity CDs that can be written on and edited
9. Sequential access	i) a set of interrelated components that collect, manipulate, store, and disseminate data and information and provide a feedback mechanism to meet an objective
10. SASD	j) an optical disc that can be written on only once

Unit 8
Secondary Storage Devices

Task 1. Comprehension questions
1. What are IT technologies?
2. What do you know about the origin and the process of development of IT?

3. What are the main purposes of IT?
4. What place do IT technologies take in modern world?
5. What role do automated processes play in modern business?

Task 2. Say whether the statements below are true or false.

1. The most common forms of secondary storage include magnetic tapes, magnetic disks, virtual tapes and optical disks.

2. Disk devices can't be operated in a sequential mode, most disk devices use direct use.

3. CD-RW technology allows personal computer users to replace their diskettes with high-capacity CDs that can't be written on and edited.

4. Flash memory is a silicon computer chip that unlike RAM is volatile and keeps its memory when the power is shut off.

5. Expandable storage devices use removable disk cartridges.

Task 3. Fill in the gaps with the appropriate words.

No	a	b	c	d
0	way	style	method	manner
1	largely	deeply	mainly	widely
2	existed	occurred	happened	developed
3	led	brought	caused	resulted
4	number	percentage	division	quantity
5	pulled	made	turned	carried
6	sum	total	amount	figure
7	applying	exerting	struggling	forcing
8	left out	gave up	drew back	ran down
9	adds	connects	combines	links
10	confidence	security	certainty	promise

So the Internet hasn't revolutionized the (0) ___a___ most of us buy petrol, or watch movies. But there is one thing the Internet does very well. It can bring together (1) _____ dispersed buyers and sellers to create active, efficient markets where none (2) _____ before. This facility has (3) _____ to the emergence of online exchanges: retail businesses with none of the usual; traders' risks – no merchandise, no storefronts – and with nothing to do but take a (4) _____ of each transaction that takes place on the site.

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This may sound straightforward, but some high-profile online exchanges have (5) _____ out to be major embarrassments. One company, which tried to establish a central marketplace on the Internet for auto parts, has invested, in (6) _____, a massive $250m and is (7) _____ to stay in business. Another businessman, who facilitated online trading in business equipment and supplies, (8) _____ after he had lost $280m.

So what does a company need in order to be successful? You could call it good 'market architecture – a structure that (9) _____ the right business plan and top technology with good timing and the (10) _____ of both buyers and sellers.

Task 4. Find definitions to the next words taken from the text and translate them.

MO, DVD, magnetic type, RAID, expandable storage devices, CD-RW, flash memory, hardware, magnetic disk, software.

Task 5. Points for discussion.
1. What are the most common forms of secondary storage?
2. What is the disadvantage of the magnetic type?
3. How can disk devices be operated?
4. What does RAID mean? How can it be implemented?
5. What is called a virtual tape server?
6. What does a magneto-optical disk mean?
7. Why is flash memory used?

Task 6. Match the words with their definitions.

1	Magnetic disk	a) a common secondary storage medium; Mylar film coated with iron oxide with portions of the tape magnetized to represent bits
2	Magnetic type	b) the computer programs that govern the operation of the computer
3	Hardware	c) redundant array independent/inexpensive disks – a method of storing data that generates extra bits of data from existing data, allowing the system to create a reconstruction map so that if a hard drive fails, the system can rebuild the lost data

4	Software	d) an optical disc that allows personal computer users to replace their disks with high capacity CDs that can be written on and edited
5	Flash memory	e) storage that uses removable disk cartridges to provide additional storage capacity
6	CD-RW	f) common secondary storage medium with bits represented by magnetized areas
7	DVD	g) a silicon computer chip that unlike RAM is nonvolatile and keeps its memory when the power is shut off
8	RAID	h) a magneto-optical disk – a hybrid between a magnetic disk and an optical disc
9	MO	i) a digital versatile disk – a storage medium used to store digital video or computer data
10	Expandable storage devices	j) any machinery that assists in the input, processing, storage and output activities of an information system

Unit 9
Enterprise Storage Options

Task 1. Comprehension questions.

1. What is information system?

2. Give examples of any information system that people use in their everyday life.

3. What is computer software? Give examples.

4. Who creates computer software?

5. Do you use computer software? Supply examples of the programs that you use.

Task 2. Say whether the statements below are true or false.

1. There are five forms of enterprise data storage.

2. Industry experts estimate that up to 70 % of system downtime is a direct result of data-storage failures.

3. NAS employs storage devices that attach to a network instead of to a single computer.

4. Implementing a SAN enables an organization to centralize the people, policies, procedures, and practices for managing storage.

5. SAN manufacturers include EMC, Hitachi Data System Corp., IBM and Microsoft.

Task 3. Fill in the gaps with the appropriate words.

Marketing, search engine, design, the Internet, are concerned, inaccessible, website, brochure, customers, box.

You log on to (1) … because you want to find out more about, say, helicopters. So you use a (2) … like Google and type in the word *helicopter*. You will have "hits" pointing out to lots of different websites. Easy. But, let us say that your company, Poppycock plc, has a (3) … and you want to make sure that people can find you, so you type poppycock, and your company isn't there. What went wrong? The whole point of having a website is that search engines should be able to find it, and potential (4) … should be able to make contact. But if a site is not correctly designed, a search engine will either not find it or will refuse to list it. As far as new customers (5) …, it might as well not exist. Unfortunately, this element of website (6) … is not generally understood, the least in the UK. Imagine printing a new (7) … and then by leaving copies sitting in a (8) … in an office cupboard. Many websites are just as (9) … . Sadly, even some websites designers do not understand the importance of Internet (10) …, and so fail to ensure that your website will appear.

Task 4. Find definitions to the next words taken from the text and translate them.

Application software, SAN, NAS, RAM, network, e-commerce software, data-storage, input, output, policy-based storage management.

Task 5. Points for discussion.

1. How many forms of enterprise data storage are there?
2. Why are firms turning to network-attached storage (NAS) and storage area networks (SAN)?
3. What does NAS include?
4. What does SAN mean?
5. What is the difference between NAS and SAN?

Task 6. Match the words with their definitions.

1.	Application software	a) the process of updating one or more databases with new transactions
2.	E-commerce software	b) the activity of gathering and capturing raw data

3.	Data-storage	c) connected computers and computer equipment in a building, around the country, or around the world, to enable electronic communications
4.	Network	d) network attached storage – storage devices that attach to a network instead of to a single computer
5.	NAS	e) production of useful information, usually in the form of documents and reports
6.	RAM	f) storage area network – technology that provides high-speed connections between data storage devices and computers over a network
7.	SAN	g) automation of storage using previously defined policies
8.	Input	h) programs that help users solve particular computing problems
9.	Output	i) random access memory – a form of memory in which instructions or data can be temporarily stored
10.	Policy-based storage management	j) software that supports catalog management, product configuration, e-commerce transaction processing and Web traffic data analysis

Unit 10
Input and Output Devices: the Gateway to Computer Systems

Task 1. Comprehension questions.
1. What are input and output devices used for?
2. What is data entry?
3. What involves source data automation?
4. Name the functions of voice recognition devices.
5. How can you describe a multifunction device?

Task 2. Say whether the statements below are true or false.
1. The speed and functions performed by the input and output devices selected and used by the organizations should be balanced with their cost, control, and complexity.

2. Converting human-readable data into a machine-readable form is called data input.

3. Voice recognition devices analyze and classify speech patterns and convert them into digital codes.

4. To perform withdrawals and other transactions with the bank accounts, bank customers can use the point of sale device.

5. Multifunction devices can combine a printer, a fax machine, a scanner and a copy machine into one device and are cheaper than buying all these devices separately.

Task 3. Fill in the gaps with the appropriate words.

Wireless, optical character recognition, mouse, keyboard, output devices, digital cameras, speech recognition, screen readers, barcodes, data.

1. There are many input and … such as multifunction printers and computer-based navigation systems that are used for specialized or unique applications.

2. Today, many computer mice use … technology and have no wire.

3. Special software programs called … attempt to identify and interpret what is being displayed on the screen and speech synthesizers convert data to vocalized sounds or text.

4. A … is a human interface device which is represented as a layout of buttons.

5. We collect … from the browsers of site visitors to our exclusive on-demand network customers.

6. Moving a … along a flat surface can move the on-screen cursor to different items on the screen.

7. Windows … in Windows Vista empowers users to interact with their computers by voice.

8. Many … can also record moving video with sound.

9. Originally … represented data by varying the widths and spacing of parallel lines, and may be referred to as linear or one-dimensional (1D).

10. … is the mechanical or electronic conversion of scanned images of handwritten, typewritten or printed text into machine-encoded text.

Task 4. Find the words in the text to match the definitions given below.

1. A single action of pressing a key on a computer or typewriter keyboard. (Characters and functionality)

2. To change or make something change from one form, purpose, system, etc. to another. (Input devices)

3. A pattern of thick and thin lines that is printed on things you buy. (Input devices)

4. Information from a computer that has been printed on paper. (Output devices)

5. A device that turns data from a computer into a graph, usually on paper. (Output devices)

Task 5. Points for discussion.
1. What is the key difference between LCD and OLED technology?
2. Where can touch-sensitive screens be used and how?
3. What are the benefits of using a voice recognition system?
4. What are the advantages of a digital camera?
5. Would you use a multifunction device? Why or why not?

Task 6. Match the words with their definitions.

1. Input device	a) data that can be read and understood by human beings
2. Output device	b) a device that is used to input data or information into a computer
3. Interface	c) a program designed to do a particular job; a piece of software
4. Application	d) a process that involves transferring machine-readable data into the system
5. Human-readable data	e) data that can be understood and read by computer devices
6. Machine-readable data	f) to put something into a computer in a form it can use
7. Data input	g) the programs, etc. used to operate a computer
8. To capture	h) the power of a computer screen, printer, etc. to give a clear image, depending on the size of the dots that make up the image
9. To detect	i) any peripheral that receives or displays output from a computer
10. Voice recognition	j) a device which copies pictures and documents so that they can be stored on a computer
11. Software	k) technology that allows a computer to identify a voice
12. Resolution	l) to do something, such as a piece of work, task or duty
13. Scanner	m) to discover or notice something

| 14. To perform | n) to remove or get rid of something |
| 15. To eliminate | o) the way a computer program presents information to a user or receives information from a user, in particular the layout of the screen and the menus |

Unit 11
Computer System Types

Task 1. Comprehension questions.

1. What are hand-held computers?

2. What functions do smart phones combine?

3. How can portable computers range? Name the types.

4. How is a centrally managed computer devoid of a DVD player, diskette drive, and expansion slots called? Provide more details on this computer type.

5. What are the main features of mainframe computers?

Task 2. Say whether the statements below are true or false.

1. Computer systems don't range significantly.

2. One of the shortcomings of hand-held computers is that they don't require lots of power relative to their size.

3. PalmOne is the company that invented the Palm Plan organizer in 1996.

4. Five directional buttons on the keyboard allow the user to select an item and then to click the center button to select it.

5. A laptop computer is a big and heavy PC.

6. Tablet PCs come in two varieties, slate and convertible.

7. Like PCs, thin clients download software from a network when needed.

8. Workstations are less powerful than personal computers.

9. An enterprise server stores and provides access to programs that meet the needs of an entire organization.

10. Mainframe computers also require specially trained individuals to care for them.

Task 3. Fill in the gaps with the appropriate words.

Devices, expansion slots, wireless, networks, desktop computers, portable, laptops, processors, application, sub-notebooks.

1. Many … programs deal principally with documents.

2. In recent years, the abbreviation "app" has specifically come to mean application software written for mobile …, with the abbreviation in particular representing both the smaller size and smaller scope of the software.

3. Early … are designed to lay flat on the desk, while modern towers stand upright.

4. Like …, all-in-one desktop computers are characterized by a comparative lack of upgradeability or hardware customization, as internal hardware is often placed in the back of the visual display unit.

5. Desktops have several standardized …, like Conventional PCI or PCI express, while laptops only tend to have one mini PCI slot and one PC card slot.

6. Prior to the widespread use of micro …, a computer that could fit on a desk was considered remarkably small.

7. Laptops also more commonly integrate … technologies like WiFi, Bluetooth and 3G, giving them a broader range of options for connecting to the Internet, though this trend is changing as more desktop computers come integrated with wireless.

8. The … are also sometimes confused with netbooks which are a different category of devices that branched off from mini notebooks in general with the coming of the first of such devices, the EEE PC.

9. Netbooks are most often much less expensive than sub-notebooks, as they are optimized for use as … Internet capable devices.

10. … may be classified according to a wide variety of characteristics, such as the medium used to transport the data, communications protocol used, scale, topology, and organizational scope.

Task 4. Find the words in the text to match the definitions given below.

1. A computer built around a form factor which is smaller than any standard laptop computer. (par. 2)

2. A personal computer (PC) in a form intended for regular use at a single location, as opposed to a mobile laptop or portable computer. (par. 2)

3. The term denoting either an exit or changes which exit a system and which activate/modify a process. (par. 12)

4. A computer or a computer program which depends heavily on some other computer to fulfill its traditional computational roles. (par. 4)

5. A high-end microcomputer designed for technical or scientific applications. (par. 14)

Task 5. Points for discussion.

1. Do hand-held and portable computers mean the same? What do they have in common? What is the difference between them?

2. What computer type do smart phones belong to? Can they be considered as real computers?

3. What is special about mainframe computers? Can they be used by separate individuals?

4. What is the difference between PCs and workstations? What are workstations used for?

5. What are supercomputers? What are their functions in comparison with ordinary computers?

Task 6. Match the words with their definitions.

1. Navigation system	a) a typewriter-style device, which uses an arrangement of buttons or keys, to act as mechanical levers or electronic switches
2. Keyboard	b) "convertable tablets" with a full keyboard where the screen rotates to be used atop the keyboard, and "slate" form-factor machines which are usually touch-screen only
3. Laptop	c) it typically uses a GPS navigation device to acquire position data to locate the user on a road in the unit's map database
4. Tablet PC	d) a class of laptop computers that are smaller and lighter than a typical laptop
5. Subnotebook	e) the ability of a system, network, or process, to handle a growing amount of work in a capable manner or its ability to be enlarged to accommodate that growth
6. Scalability	f) a personal computer for mobile use

Unit 12
Selecting and Upgrading Computer Systems

Task 1. Comprehension questions.

1. What is the computer system architecture?

2. How can computer systems be upgraded?

3. What is the goal of setting internal architectures by large corporations?

4. What are the cost factors that should be considered before buying a printer?

5. Why is the choice of computer system's components and architecture so important?

Task 2. Say whether the statements below are true or false.

1. The computer system architecture can include processing, memory, storage, and input and output devices.

2. Computer systems can be upgraded by reinstalling additional memory, processors, more disk storage, a memory card, etc.

3. If the system fails after a standard 5-year warranty period it is more cost effective to replace it with an upgraded model rather than spend time to fix it.

4. The goal of setting your own internal computer system architectures is to reduce software support costs.

5. The first factor to be considered when buying a printer is its purchase price.

6. Laser printers have a much higher operating cost than inkjet printers.

7. Laser printers are capable of handling higher-volume printing in comparison with inkjet printers.

8. For most people who require color printing capability, laser printers are the most cost-effective solution.

9. DVD burners have been supplement by CD burners.

10. Each computer component has a critical role in successful operation of the computer system, the information system and the organization.

Task 3. Fill in the gaps with the appropriate words.

Configuration, memory, operating cost, DVD burners, personal computers, upgrade, laser printer, storage, workstation, inkjet printers.

1. In computing, … refers to the physical devices used to store programs (sequences of instructions) or data (e.g. program state information) on a temporary or permanent basis for use in a computer or other digital electronic device.

2. Computer data … is a technology consisting of computer components and recording media used to retain digital data.

3. The term … refers to the replacement of a product with a newer version of the same product.

4. The term … has been used to refer to a mainframe computer terminal or a PC connected to a network.

5. Early … were "desktop" machines, with a horizontally oriented computer case, usually intended to have the display screen placed on top to save space on the desktop.

6. In communications or computer systems, a … is an arrangement of functional units according to their nature, number, and chief characteristics.

7. … speed can vary widely, and depends on many factors, including the graphic intensity of the job being processed.

8. The expenses which are related to the operation of a business or to the operation of a device, component, and piece of equipment or facility are called … .

9. Desktop …, as used in offices or at home, tends to use aqueous inks based on a mixture of water, glycol and dyes or pigments.

10. A number of manufacturers have combined … with mechanical hard disk drive-based digital video recorders, allowing for recording to large fixed disks, and the ability to view these recordings off the hard disk at a later date.

Task 4. Find the words in the text to match the definitions given below.

1. A computer processor used to supplement the functions of the primary processor (the CPU). (par. 1)

2. The collection of physical elements that comprise a computer system. (par. 1)

3. The price at which something is actually purchased. (par. 4)

4. A powder used in laser printers and photocopiers to form the printed text and images on the paper. (par. 4)

5. A collection of computer programs and related data that provides the instructions for telling a computer what to do and how to do it. (par. 2)

Task 5. Points for discussion.

1. How do you understand the term "computer system architecture"? What are the important factors in its selection?

2. What actions should be taken in case of a system failure? Is it connected with the warranty period?

3. Do large companies and corporations decide to set their own computer system architecture? What are the reasons for it?

4. Does the choice of a printer type depend on the purposes they are used for? Provide more details. What kind of printer would you choose?

5. What is the difference between CD and DVD burners? What should be considered while choosing the latter?

Task 6. Match the words with their definitions.

1. Input device	a) any piece of computer hardware equipment used to communicate the results of data processing carried out by an information processing system (such as a computer) which converts the electronically generated information into human-readable form
2. Output device	b) an electronic flash memory data storage device used for storing digital information

3. Disk storage	c) a general category of storage mechanisms, in which data are digitally recorded by various electronic, magnetic, optical, or mechanical methods on a surface layer deposited of one or more planar, round and rotating disks
4. Memory card	d) any peripheral (piece of computer hardware equipment) used to provide data and control signals to an information processing system such as a computer or other information appliance

Unit 13
Operating Software. Operating Systems.
Current Operating Systems. Workgroup Operating Systems.
Enterprise Operating Systems

Task 1. Comprehension questions.
1. What is an Operating system?
2. What does a combination of OSs, computers, users include?
3. What tasks must application programs perform?
4. What does mutual memory stand for?
5. What can you use the OSs for?

Task 2. Say whether the statements below are true or false.
1. A computer cannot be rebooted by using the keyboard.
2. Thousands of people may be simultaneously using an online computer service to get stock quotes and business news.
3. Computers cannot handle sensitive data that are transmitted through the Internet.
4. OSs have file management conventions that specify how files can be named and organized.
5. The ability of computers to handle an increasing number of current users smoothly is called sensibility.

Task 3. Fill in the gaps with the appropriate words.
Acceptance, extensions, platform, tremendous, combination, purpose, shortcomings, architecture, virtual, development.
Mac is the operating system that runs on Macintosh computers from Apple Inc. Many people, who use computers for graphics (1) …, like the features

in this OS. In the late 1980s the Wintel (Windows/Intel) (2) … of software/hardware used on the PC took off because the (3) … was open. This encouraged third parties to develop software and special (4) … Add-on cards for the PC that enabled further (5) … and enhancements to the PC.

Apple took the closed architecture approach and no one could get specifications necessary to develop third party boards for it. The end result is that no one could develop anything for the Mac. This held back the growth and (6) … of the Mac, and allowed the PC to gain (7) … market share.

Over time the inertia of the Wintel based PC became (8) …, for better or worse, unstoppable. Today 9 out of every 10 PCs are Wintel based. In spite of some of the (9) … of Windows, it along with the Microsoft Office suite has become the de facto operating (10) … for PCs worldwide. More application software and support are available for it than any other OS in the world.

Task 4. Find the words in the text to match the definitions given below.

1. Two or more people who work together to achieve a common goal.

2. A program (as a word processor or a spreadsheet) that performs one of the major tasks for which a computer is used.

3. Sequences of instructions for computers.

4. The place at which independent and often unrelated systems meet and act on or communicate with each other

5. The process of storing information in a computer memory or on a magnetic tape or disk.

Task 5. Points for discussion.

1. What are the common hardware functions?

2. Describe how the OS can operate the computer's memory.

3. How does the file-management function operate?

4. What OSs do you know? Which of them do you use in your computers?

5. Provide your examples of Enterprise operating systems.

Task 6. Match the words with their definitions.

1. Preempting	a) a computer program that is usually hidden within another seemingly innocuous program and that produces copies of itself and inserts them into other programs and usually performs a malicious action
2. Platform	b) emitting or reflecting usually steady, suffused, or glowing light

3. Mainframe	c) the act or an instance of exposure
4. Scalability	d) characterized by electronic and especially computerized technology
5. Virus	e) a computer with its cabinet and internal circuits; *also* : a large fast computer that can handle multiple tasks concurrently
6. Disclosure	f) capable of being easily expanded or upgraded on demand
7. Luminous	g) a miniature computer graphic sometimes hyperlinked to a full-size version
8. Digital	h) the act of taking control over the OS and giving it to another
9. Thumbnail	i) a strip of icons usually at the bottom of a computer screen showing the running programs that may be used by selecting their icons
10. Taskbar	j) the computer architecture and equipment using a particular operating system

Unit 14
Enterprise Operating Systems

Task 1. Comprehension questions.
1. What benefits do mainframe computers offer to users?
2. What purposes was application software developed for?
3. What capabilities does z/OS provide?
4. What is MPE/iX?
5. What is HP-UX?

Task 2. Say whether the statements below are true or false.
1. Modern mainframe computers fail to meet massive data-processing requirements.
2. Application software can solve almost any business problem.
3. Each server of a single computer is capable of running a different application.
4. HP-UX handles online transaction processing and Web applications.
5. HP-UX supports only Hewlett-Packard's computers.

Task 3. Fill in the gaps with the appropriate words.

System availability, mainframe, storage capacity, application software,
web applications, data processing, workload management, computer
security, computing platform, multiprogramming, executive.

1. ... measures how much data a computer system may contain.

2. Computer ... is any process that a computer program does to enter data and summarize, analyze or otherwise convert data into usable information.

3. While system software consists of low-level programs that interact with computers at a basic level ... resides above system software and includes database programs, word processors, spreadsheets, etc.

4. ... enables you to manage workload distributions to provide optimal performance for users and applications.

5. Many home computer owners don't realize that they need to pay attention to... .

6. ... is whether (or how often) a system is available for use by its intended users.

7. Creating ... requires different approaches than traditional applications and involves the integration of numerous technologies.

8. A ... includes a hardware architecture and a software framework (including application frameworks), where the combination allows software, particularly application software, to run.

9. A ... revolution constitutes a complete switch to another platform in which all applications would be written and run on Linux, Windows or UNIX.

10. ... is a business-oriented minicomputer operating system made by Hewlett-Packard.

Task 4. Find the words in the text to match the definitions given below.

1. Another name for a central processing unit.

2. A business deal or action, such as buying or selling something.

3. A systematized collection of data that can be accessed immediately and manipulated by a data-processing system for a specific purpose.

4. The natural ability, skill, or power that makes a machine, person, or organization able to do something.

5. Designed to be operated while being held in the hand.

Task 5. Points for discussion.

1. The role of mainframe computers in the daily operations of the world's largest corporations.

2. The z/OS and its characteristics.

3. Modern operating systems.

4. Functions performed by HP-UX and MPE/iX.

5. Advantages offered by Red Hat Linux.

Task 6. Match the words with their definitions.

1. Mainframe	a) a computer or program that supplies data or resources to other machines on a network
2. Server	b) the ability of something, esp. a computer system, to adapt to increased demands
3. Scalability	c) to make a computer, machine, or piece of software better and able to do more things
4. Upgrade	d) a piece of computer software, which does a particular job
5. Application	e) a large powerful computer that can work very fast and that a lot of people can use at the same time

Unit 15
Operating Systems for Small Computers and Special-Purposes Devices

Task 1. Comprehension questions.

1. Why are new operating systems called "embedded"?

2. How can OSs be synchronized with Pcs?

3. How can Palm OS simplify the buying and selling process?

4. What is the strategy of Palm?

5. What are the spheres of application for Windows CE.Net and Windows XP Embedded?

Task 2. Say whether the statements below are true or false.

1. Personal digital assistants, cell phones and digital cameras are special-purpose devices.

2. Palm has two lines of products.

3. A great number of Apple Mac users prefer personal digital assistants rather than Palm operating systems.

4. Windows XP Embedded is used in mobile devices.

5. Windows Mobile is OS for mobile or portable devices.

Task 3. Fill in the gaps with the appropriate words

Programmable computer, wireless connection, web-based services, cellular telephone, embedded systems, personal digital assistant, smart phones, computer chips, instant messaging, desktop PC.

1. Physically, ... range from portable devices such as digital watches and MP3 players, to large stationary installations like traffic lights, factory controllers.

2. The basic features of any ... are a date book, address book, task list, and memo pad.

3. When you have your wireless network in place and your PC ready, you can easily make the ... between the two.

4. A ... is a computer in a form intended for regular use at a single location, as opposed to a mobile laptop or portable computer.

5. Modern ... also include high-resolution touch screens and web browsers that display standard web pages as well as mobile-optimized sites.

6. ... have become popular since the Web was invented in 1989.

7. ... is a form of communication over the Internet that offers an instantaneous transmission of text-based messages from sender to receiver.

8. There are several basic classifications of ..., including analog, digital and mixed signal varieties.

9. The first ... was built by Konrad Zuse somewhere between 1936 and 1938.

10. A ... is a type of short-wave analog or digital telecommunication in which a subscriber has a wireless connection from a mobile telephone to a relatively nearby transmitter.

Task 4. Find the words in the text to match the definitions given below.

1. A machine or device, esp. an electrical one used domestically; any piece of equipment having a specific function.

2. The ability of a computer system to accommodate additions to its capacity or capabilities.

3. The capacity or size of a thing.

4. The ability to obtain or retrieve (information) from a storage device.

5. To send out or radiate (rays of light).

Task 5. Points for discussion.

1. New OSs are challenging the usual way of interacting with small computers and special-purpose devices.

2. Market share for personal digital assistants.

3. A key to Palm success.

2. Types of Embedded OSs.

5. The evolution of mobile operating systems.

Task 6. Match the words with their definitions.

1. Dedicated	a) enclosed firmly in a surrounding mass
2. Embedded	b) designed to fulfill one function
3. To interfere	c) to come between or in opposition; hinder; obstruct
4. To interact	d) to act on or in close relation with each other
5. To integrate	e) to make or be made into a whole; incorporate or be incorporated

Unit 16
Utility Programs

Task 1. Comprehension questions.

1. What are the tasks of utility programs?

2. What is grid computing?

3. What types of utilities do you know?

4. How can you protect a computer from viruses?

5. What are the benefits of system management software?

Task 2. Say whether the statements below are true or false.

1. Grid computing pays its way.

2. Utility programs can only be purchased.

3. One can monitor the overall PC status with the help of hardware utilities.

4. Special programs can help you to avoid unwanted ads.

5. Advanced Web-performance monitoring utility provides for detecting and eliminating the existing problem.

Task 3. Fill in the gaps with the appropriate words.

On-demand, compression, spam, system management software, web server, utility program, boot sector, pop-up blockers, grid computing, file allocation table

1. ... a program that performs a specific task related to the management of computer functions, resources, or files, as password protection, memory management, virus protection, and file compression.

2. One of the main strategies of ... is to use middleware to divide and apportion pieces of a program among several computers, sometimes up to many thousands.

3. ... computing is an increasingly popular enterprise model in which computing resources are made available to the user as needed.

4. The purpose of a ... is to allow the boot process of a computer to load a program stored on the same storage device.

5. The process of reducing the size of a data file is popularly referred to as data ..., although its formal name is source coding.

6. One problem with ... has been that they cannot always differentiate between an unwanted pop-up window and one that is user-requested.

7. A ... is a table that an operating system maintains on a hard disk that provides a map of the clusters that a file has been stored in.

8. ... can come in a variety of forms, although the most common is unsolicited commercial e-mail.

9. The primary function of a ... is to deliver web pages on the request to clients using the Hypertext Transfer Protocol.

10. System management software is a set of management applications to view and control hardware and software across a network.

Task 4. Find the words in the text to match the definitions given below.

1. A disk of rigid magnetizable material that is used to store data for computers.

2. An area of a disk, Winchester disk, or floppy disk that contains the names and locations of files currently held on that disk.

3. A device for connecting two computers by a telephone line, consisting of a modulator that converts computer signals into audio signals and a corresponding demodulator.

4. The programs that can be used with a particular computer system.

5. A set of tools, devices, kit, etc., assembled for a specific purpose.

Task 5. Points for discussion.

1. Functions, performed by different types of utilities.

2. The ways to protect your computer: tips for virus detection and prevention.

3. File compression utility as a solution for storing bulk information.

4. The struggle with unwanted ads.

5. Utilities for simplifying and making work more efficient.

Task 6. Match the words with their definitions.

1. To update	a) to fail suddenly and completely because of a malfunction
2. Utility	b) to locate or identify exactly
3. To crash	c) the assignment of particular areas of a magnetic disk to particular data or instructions
4. To pinpoint	d) to bring up to date
5. Allocation	e) a piece of computer software designed for a routine task, such as examining or copying files

Unit 17
Telecommunications and Networks. Communications

Task 1. Comprehension questions.

1. What examples of direct and indirect communications within a company can you name?

2. What is communication?

3. How are signals transmitted?

4. What components of human communications can you name?

5. What is synchronous communication?

Task 2. Say whether the statements below are true or false.

1. Obvious examples of communications in an organization are salaries, procedure manuals and warning lights on computer systems.

2. Communication of any types forms the minor part of business systems.

3. The components of communications can easily be recognized when considering human communication.

4. For successful communication the sender and the receiver must understand the signals and know how to interpret them.

5. Posting letters and e-mailing are examples of synchronous communications.

Task 3. Fill in the gaps with the appropriate words.

Communication media, sender, synchronous, manually, perception, transmission, to interpret, communication, messages, to convey.

1. Salaries communicate … of value of workers' contribution to the company success.

2. The process that allows information to pass from the sender to the receivers is known as … .

3. Managers need to gain understanding of how … may be best employed to develop an effective business system.

4. In human speech the sender transmits signals through the … medium of the air.

5. When people talk they send … to each other.

6. In two-way communication the … sends messages to the receiver.

7. For communication to be effective the sender and the receiver must agree on how … signals they exchange.

8. The signals that people use … messages are spoken words, i.e. our language.

9. With … communication the receiver gets the message as soon as it is sent.

10. Both types of communication are important in business regardless of whether it is done … or electronically.

Task 4. Find the words in the text to match the definitions given below.

1. The process by which a person or a system detects and interprets information from the external world.

2. Any sign, gesture, etc., that serves to communicate information.

3. The means by which data travel from the sender to the receiver.

4. The individual who initiates a message in the communication process.

5. To take, carry, or transport information, to communicate information.

Task 5. Points for discussion.

1. What difficulties may appear in the process of transmitting messages from the sender to the receiver?

2. Can you think of any forms of one-way communications?

3. For communication to be successful the sender and the receiver must agree on the meaning of signals they use. What other conditions of successful communication can you think of?

4. Give more examples of synchronous and asynchronous communication besides the ones that were mentioned in the text.

Task 6. Match the words with their definitions.

1. Perception	a) the act or process of sending a message, picture, or other information from one location to one or more other locations by means of radio waves, electrical signals, light signals, etc.
2. Signal	b) to take, carry, or transport information, to communicate information
3. Message	c) the process by which a person or a system detects and interprets information from the external world
4. Transmission	d) the type of communication that does not require that all parties involved are present at the same time
5. Sender	e) the recipient of the message
6. Receiver	f) a form of communication, usually brief, from one person or group to another
7. To convey	g) direct communication where the communicators are instantaneous
8. To interpret	h) any sign, gesture, etc., that serves to communicate information
9. Synchronous communication	i) to clarify or explain the meaning
10. Asynchronous communication	j) the individual who initiates a message in the communication process

Unit 18
Telecommunications

Task 1. Comprehension questions.

1. What is the role of telecommunications in business?

2. What are the components of the telecommunications model?

3. What is the function of the sending unit?

4. What is the function of the telecommunications device?

5. What is the speed at which information is transmitted in a telecommunications model?

Task 2. Say whether the statements below are true or false.

1. Telecommunications have the potential to change businesses greatly.

2. Data communications refer to the physical collection, processing and distribution of data.

3. Data communications are accomplished through the use of telecommunications technologies.

4. The sending unit receives the signal from a telecommunications device.

5. Development of telecommunication technologies allows communication with clients only in one region.

Task 3. Fill in the gaps with the appropriate words.

Telecommunications medium, speed, sending unit, signal, to alter, data communications, receiving computer, to reverse, telecommunications, to integrate.

1. Electronic transmission of signals, known as …, is fulfilled by means of telephone, radio and television.

2. Telecommunications have the power … the nature of commerce and the way that businesses operate.

3. … involve electronic collection, processing and distribution of data.

4. In a telecommunications model the …, such as a person or a computer system, originates the message.

5. The telecommunications device converts a … into a different form or from one type into another.

6. The telecommunications device sends the signal through a … that interfaces between the sending device and the receiving device.

7. It is possible … the communication process and another message can be transmitted from the receiving unit.

8. Another device, connected to the …, receives the signal.

9. One of the important characteristics of telecommunications is … which is measured in bits per second.

10. Telecommunications technology helps … various departments to increase operational efficiency of the business.

Task 4. Find the words in the text to match the definitions given below.

1. The telegraphic or telephonic communication of audio, video, or digital information over a distance by means of radio waves, optical signals, etc., or along a transmission line.

2. To make or become different in some respect; change.

3. A device that originates the message.

4. To move or cause to move backwards or in an opposite direction.

5. To organize or integrate diverse elements in a harmonious operation.

Task 5. Points for discussion.

1. What opportunities do telecommunications give to businesses?

2. What may happen if any component of the telecommunications model is withdrawn from the system?

3. Which spheres of economics depend heavily on telecommunications technologies?

Task 6. Match the words with their definitions.

1. Telecommunications	a) a device that originates the message
2. To lessen	b) to make or become less
3. To alter	c) to send out signals by means of radio waves or along a transmission line
4. Data communications	d) to move or cause to move backwards or in an opposite direction
5. Sending unit	e) the telegraphic or telephonic communication of audio, video, or digital information over a distance by means of radio waves, optical signals, etc., or along a transmission line
6. To reverse	f) a subset of telecommunications that refers to the electronic collection, processing and distribution of data
7. To coordinate	g) to make or become different in some respect; change
8. To transmit	h) to organize or integrate diverse elements in a harmonious operation

Unit 19
Communication Channels

Task 1. Comprehension questions.
1. What is effective communications?
2. What is the difference between communications and telecommunications?
3. What are the advantages of telecommunications technology?
4. What are the elements of telecommunications system?
5. Do you know any kinds of communications channels?

Task 2. Say whether the statements below are true or false.
1. There are four types of communications channels.
2. A half-duplex channel can transmit data in only one direction.
3. A full-duplex channel is like two simplex lines.
4. Bandwidth is the range of frequencies that an electronic signal occupies on a given transmission medium.
5. Broadband refers to telecommunications in which a narrow band of frequencies is available.
6. Transmission media can be divided into two broad categories.
7. You can't place lots of wire pairs into one large wire cable.
8. A coaxial cable consists of an inner conductor surrounded by insulation.
9. The disadvantage of fiber-optic cable is that its diameter is much smaller than coaxial.
10. Microwave signals can carry many channels at the same time.

Task 3. Fill in the gaps with the appropriate words.
Line-of-sight transmission, microwaves, full-duplex, bandwidth, channel transmission medium, fiber-optic cable, communications satellites, cellular transmission, coaxial cable, communication channels.

1. Systems that do not need … use instead simplex channel in which one device transmits and the others just "listen".
2. Modern … use a variety of orbits including geostationary orbits.
3. A key characteristic of … is that a band of a given width can carry the same amount of information, regardless of where that band is located in the frequency spectrum.

4. In …, each cell uses a different set of frequencies from neighboring cells, to avoid interference and provide guaranteed bandwidth within each cell.

5. Because they are … devices, microwave dishes must be placed in relatively high locations.

6. A variety of input devices such as head-mounted displays, data gloves, … allow user to navigate through a virtual environment.

7. A disadvantage is that … are limited to line of sight propagation; they cannot pass around hills or mountains as lower frequency radio waves can.

8. Modern … can contain up to a thousand fibers in a single cable, with potential bandwidth in the terabytes per second.

9. Communicating data from one location to another requires some form of… .

10. The term … also refers to a technical device that employs the material substance to transmit or guide waves.

Task 4. Find the words in the text to match the definitions given below.

1. The means by which data travels through a network. Typically this is some type of cable, although wireless networks are becoming increasingly common. (par. 1)

2. The physical or logical link that connects a data source to a data sink. (par. 1)

3. This term refers to a telecommunications signal of greater bandwidth, in some sense, than another standard or usual signal. (par. 3)

4. A network that uses radio waves instead of copper or fiber optic cable. (par. 5)

5. Cable made of pairs of copper wires that are twisted around each other. (par. 6)

Task 5. Points for discussion.

1. What is the main statement of Shannon's fundamental law of information theory?

2. In what spheres of life and work do we use communications channels?

3. What are the main advantages and disadvantages of wireless media types?

4. What are the main advantages and disadvantages of guided media types?

5. What type of transmission do you think is the most reliable?

Task 6. Match the words with their definitions.

1. Satellite	a) the amount of data that can be passed along a communications channel in a given period of time
2. Coaxial cable	b) a man-made device used to aid telecommunications, as by reflecting or relaying a radio signal
3. Bandwidth	c) a cable consisting of an electrically conductive wire surrounded by a layer of insulating material
4. Simplex channel	d) radio waves used in radio and television broadcasting
5. Airwaves	e) a channel which permits transmission in one direction only

Unit 20
Modems

Task 1. Comprehension questions.
1. What is a modem?
2. Do you know how a modem works?
3. Which types of modems can you name?
4. In which sphere of our life are modems used?
5. What are the main advantages of modems?

Task 2. Say whether the statements below are true or false.

1. You need a special device to convert the digital signal to an analog signal.

2. Translating data from digital to analog is called demodulation.

3. Modulation/demodulation devices are called cells.

4. Modems can't automatically answer incoming calls.

5. Cellular modems allow people communicate with other computer systems.

6. Cable modems have a high cost.

7. With a cable modem you can be online 24 hours a day.

8. Multiplexers allow several signals to be sent over one channel.

9. Front-end processors can manage communications only to a computer system.

10. Front-end processors can't connect a mainframe computer to many communications lines.

Task 3. Fill in the gaps with the appropriate words.

Traffic, transmit signals, Internet access, transfer data, data security, cable modem, to process information, demodulation, mainframe computer, digital signal.

1. When purchasing a new computer, you'll want to … from the old computer to the new one.

2. … is usually sold by Internet service providers that use many different technologies offering a wide range of data rates to the end user.

3. Although a … does modulation between analog and digital signals, it is a much more complex device than a telephone modem.

4. Because of the design strengths, the … is often used by IT organizations to host the most important applications.

5. You need to have a … program against accidental loss and theft of information.

6. … consists of patterns of bits of information. These patterns can be generated in many ways, each producing a specific code.

7. When a computer program enters data and analyses it, otherwise it … .

8. Satellites utilize electromagnetic waves to … .

9. … is opposite to that of the modulation process.

10. … is a term that typically refers to overall network usage at a given moment.

Task 4. Find the words in the text to match the definitions given below.

1. Translating data from digital to analog. (par. 1)

2. Is a type of modem which connects to a wireless network instead of to the telephone system. (par. 2)

3. A continuous, curving signal. (par. 1)

4. Is a device that combines several input information signals into one output signal. (par. 5)

5. Is a powerful computer used mainly by large organizations for critical applications. (par. 6)

Task 5. Points for discussion.

1. What is the difference between cellular and cable modems?

2. Which types of modems and their purpose can you name?

3. In which sphere of life can a multiplexer be used?

4. Can modern society live without modems?

5. If you want to buy a modem, by what characteristics will you choose it?

Task 6. Match the words with their definitions.

1. Demodulation	a) smth located inside a computer on the motherboard that allows additional boards to be connected to it
2. Modem	b) translating data from analog to digital
3. Front-end processor	c) a signal represented by bits
4. Digital signal	d) a device that enables a computer to transmit data over, for example, telephone lines
5. Expansion slot	e) a computer that directs the incoming and outgoing information

Unit 21
Carriers and Services

Task 1. Comprehension questions.

1. What is a local exchange carrier?

2. How can be types of carriers divided?

3. What does the term CLECs mean?

4. What does a dedicated line provide?

5. What services do phone and dealing provide?

Task 2. Say whether the statements below are true or false.

1. LEC is a private telephone company in the United States that provides services to homes and businesses within its defined geographical area.

2. The competitive local exchange carriers provide valuable backup capability over the "last mile".

3. Voice over Internet protocol (VoIP) is the basic transport of voice in the form of a data packet using the Internet protocol.

4. Automatic number identification (ANI) or caller ID, equipment can't be installed on the phone system to identify and display the number of an incoming call.

5. Unwanted phone calls from other people and businesses can be identified before the phone is ever answered.

Task 3. Fill in the gaps with the appropriate words.

A leased line, data applications, carriers, to convert, LEC, IP telephony, phone system, switch, Internet protocol, competitive local exchange carriers.

1. The types of … can be divided into three broad categories: local exchange carriers, competitive local exchange carriers and long-distance carriers.

2. A … is a public telephone company in the United States that provides service to homes and businesses within its defined geographical area.

3. Today, your computer's modem … signals from analog to digital.

4. … include wireless service providers, satellite TV service providers, cable TV companies, and even power companies.

5. … is a circuit that directs messages along specific paths into telecommunications system.

6. A dedicated line, also called … provides a constant connection between two points.

7. … is the communications protocol by which data is sent from one computer to another on the Internet.

8. … is the technology for transmitting voice communications over a network using an open standards-based Internet protocol.

9. Voice and data convergence is the integration of voice and … in a common environment.

10. Common carriers offer more services to extend the capabilities of the typical … .

Task 4. Find the words in the text to match the definitions given below.

1. A collection of computer programs and related data that provides the instructions for telling a computer what to do and how to do it.

2. The physical link or circuit that connects from the demarcation point of the customer premises to the edge of the carrier or telecommunications service provider's network.

3. A numerical label assigned to each device (e.g., computer, printer) participating in a computer network that uses the Internet Protocol for communication.

4. It is a feature of telephony intelligent network services that permits subscribers to display or capture the billing telephone number of a calling party.

5. An independent agency of the United States government, created by Congressional statute.

Task 5. Points for discussion.

1. What are the duties of the FCC?

2. In your opinion, what is the most popular type of telecommunication carriers?

3. What do you know about the Internet protocol?

4. What is data and voice convergence?

5. What advantages and disadvantages does the IP telephone have?

Task 6. Match the words with their definitions.

1. ANI	a) the communication standard that enables traffic to be routed from one network to another as needed
2. Local exchange carrier (LEC)	b) communications carriers provide the use of standard telephone lines
3. Internet Protocol (IP)	c) it is a circuit that directs messages along specific paths in the telecommunication systems
4. CLECs	d) it is a feature of telephony intelligent network services that permits subscribers to display or capture the billing telephone number of a calling party
5. Switched lines	e) a general term for the technologies that use the Internet Protocol's packet-switched connections to exchange voice, fax, and other forms of information that have traditionally been carried over the dedicated circuit-switched connections of the public switched telephone network
6. A switch	f) companies that compete with LECs
7. A dedicated line	g) the integration of voice and data applications in a common environment
8. Software application	h) a public telephone company in the USA that provides service to homes and businesses
9. IP telephony	i) computer software designed to help the user to perform specific tasks
10. Data convergence	j) the communications line which provides connection between two points

Unit 22
WATS. ISDN. DSL. Wireless Mobile

Task 1. Comprehension questions.
1. What is WATS?
2. What does the ISDN provide?
3. Describe the T-Carrier system.
4. What is the advantage of DSL?
5. Is it difficult to choose the best telecommunications option? Why or why not?

Task 2. Say whether the statements below are true or false.
1. The OUT-WATS service is used strictly for incoming calls.
2. The access provider must also have an ISDN adapter.
3. The T-3 line isn't capable of transmitting data at a rate of 44.736 Mbps.
4. The T-1 is commonly used by Internet service providers.
5. A DSL line can carry both data and voice signals.
6. All the major cellular carriers offer some sort of wireless mobile data services.
7. With wireless mobile service, you cannot access the Web any place a cell phone network exists.
8. CDMA allows a lot of communications devices to share a single communications channel.
9. Adoption of cellular data services is still in its early stage.
10. ISDN isn't being replaced by DSL service.

Task 3. Fill in the gaps with the appropriate words.
Integrate, delivered, communication, exceeded, data, subscriber, transmission, installation, providers, outpacing.

1. His achievements have … expectations.
2. These programs will … with your existing software.
3. We are one of the largest … of employment in the area.

4. A machine consists of a power source and a power … system, which provides controlled application of the power.

5. Leaflets have been … to every household.

6. In this case a … which uses communication service has no direct connection with a specific wire line communication channel or corresponding primary terminal.

7. … of the new system will take several days.

8. Demand is … production.

9. All channels of … need to be kept open.

10. This … was collected from 69 countries.

Task 4. Find the words in the text to match the definitions given below.

1. Encouragement and help that you give to somebody/something because you approve of them and want them to be successful.

2. A system of words, letters, numbers or symbols that represent a message or record information secretly or in a shorter form.

3. A way of communicating information, etc. to people.

4. To join together two or more things; to be joined together.

5. Scientific knowledge used in practical ways in industry, for example in designing new machines.

6. To get or accept something that is sent or given to you.

Task 5. Points for discussion.

1. What are advantages and disadvantages of the wireless mobile?

2. Is it important to have a roaming service? Why? Why not?

3. What is better DSL or ISDN? Explain your point of view.

4. What functions would you like your mobile phone to have?

Task 6. Match the words with their definitions.

1. WATS	a) a way of sending electronic data at high speed along ordinary telephone lines, used for supplying the Internet to homes, businesses, etc

2. ISDN	b) a method by which multiple analog message signals or digital data streams are combined into one signal over a shared medium
3. DSL	c) a person who pays to receive a service
4. To outpace	d) a long distance service offering for customer dial-type telecommunications between a given customer station and stations within specified geographic rate areas employing a single telephone line between the customer user location and the serving central office.
5. Multiplexing	e) the rate at which somebody/something moves or travels
6. Bandwidth	f) a system for carrying sound signals, images, etc. along wires at high speed)
7. Subscriber	g) to go, rise, improve, etc. faster than somebody/something
8. Speed	h) a band of frequencies used for sending electronic signals

Unit 23
Networks

Task 1. Comprehension questions.
1. What is a computer network? What are network nodes?
2. How can networks be classified?
3. What are the types of local area networks?
4. What is MAN? What is the difference between LAN and MAN?
5. What is WAN? What do LAN, WAN and MAN have in common?

Task 2. Say whether the statements below are true or false.

1. Networks cannot be used to share hardware, programs, and databases across the organization.

2. With a LAN, a person with a laptop, a digital camera, and a portable printer could connect them to anything without having hardwire.

3. Another basic LAN is a simple peer-to-peer network that might be used for a huge business to allow the sharing of files and hardware devices such as printers.

4. To make home and small business networking a reality, a number of companies are offering standards, devices, and procedures.

5. Networks that link systems between countries are called national networks.

Task 3. Fill in the gaps with the appropriate words.

Communicating, computer worms, Internet working, wireless, information technology, protocols, connect, social, email, server.

1. Computer networking is sometimes considered a sub-discipline of electrical engineering, telecommunications, computer science, … or computer engineering, since it relies upon the theoretical and practical application of these disciplines.

2. Many of the … behaviors seen in today's Internet were demonstrably present in the 19th century and arguably in even earlier networks using visual signals.

3. Early networks of … computers included the military radar system Semi-Automatic Ground Environment (SAGE), started in the late 1950s.

4. Computer networks and the technologies needed to … and communicate through and between them, continue to drive computer hardware, software, and peripherals industries.

5. Using a network, people can communicate efficiently and easily via …, instant messaging, chat rooms, telephone, video telephone calls, and video conferencing.

6. A computer network may be used by computer hackers to deploy computer viruses or … on devices connected to the network, or to prevent these devices from normally accessing the network (denial of service).

7. A global area network (GAN) is a network used for supporting mobile across an arbitrary number of … LANs, satellite coverage areas, etc.

8. Communication … have various properties, such as whether they are connection-oriented or connectionless, whether they use circuit mode or packet switching, or whether they use hierarchical or flat addressing … .

9. The Internet Protocol Suite, often also called TCP/IP, is the foundation of all modern ... .

10. Different programs must be written for the client process, which initiates the communication, and for the … process, which waits for the communication to be initiated.

Task 4. Find the words in the text to match the definitions given below.

1. A computer network that interconnects computers in a limited area such as a home, school, computer laboratory, or office building using network media. (par. 5)

2. A network that covers a broad area (i.e., any telecommunications network that links across metropolitan, regional, or national boundaries) using private or public network transports. (par. 11)

3. A computer network that usually spans a city or a large campus. (par. 9)

4. A computer network used for communication among computerized devices, including telephones and personal digital assistants. (par. 3)

5. A software architecture based on the idea that changing the value of a variable should automatically force recalculation of the values of variables which depend on its value. (par. 12)

Task 5. Points for discussion.

1. How widely are computer networks used nowadays? Support your answer with examples.

2. What are LANs used for? Is it a widespread kind of networks?

3. What are the main features of MANs?

4. What is special about WANs? What are they usually used for? Do they differ from MANs?

5. Give examples of international networks usage.

Task 6. Match the words with their definitions.

1. Network node	a) a computer file that contains text (and possibly formatting instructions) using seven-bit ASCII characters)
2. Document	b) a data storage device used for storing and retrieving digital information using rapidly rotating discs (platters) coated with magnetic material
3. Teamwork	c) work done by several associates with each doing a part but all subordinating personal prominence to the efficiency of the whole

4. Medium	d) a connection point, either a redistribution point or a communication endpoint (some terminal equipment)
5. Fiber optic cable	e) an optical machine-readable representation of data relating to the object to which it is attached
6. Expansion slot	f) a socket in a microcomputer that will accept a plug-in circuit board
7. Hard drive	g) storage and/or transmission tools used to store and deliver information or data
8. Barcode	h) the science and technology of communication at a distance by electronic transmission of impulses, as by telegraph, cable, telephone
9. Hard disk	i) a cable containing one or more optical fibers
10. Telecommunication	j) a data storage device used for storing and retrieving digital information using rapidly rotating discs (platters) coated with magnetic material

Unit 24
Network Topology

Task 1. Comprehension questions.
1. What is network topology? What are its major types?
2. Give short characteristics to each network type.
3. What are other ways to classify networks?
4. What is a terminal-to-host architecture?
5. What are file server and client/server architectures? What is the difference between them?

Task 2. Say whether the statements below are true or false.
1. Building a network involves four types of design.
2. The ring network contains computers and computer devices placed in a circle.
3. A hierarchical network requires a centralized computer to control com-munications.
4. The database management system runs on the end user's PC or workstation.
5. Morgan Stanley took more than five years to overhaul its IT infrastructure with the goal of creating a new IS infrastructure based on the thin-client server model.

Task 3. Fill in the gaps with the appropriate words.

Device, topology, packet-switching, address, communications, nodes, data, physical, hierarchy, endpoints.

1. Physical topology refers to the placement of the network's various components, including … location and cable installation, while logical topology shows how data flows within a network, regardless of its physical design.

2. The shape of the cabling layout used to link devices is called the … topology of the network.

3. A network's logical … is not necessarily the same as its physical topology.

4. The logical classification of network topologies generally follows the same classifications as those in the physical classifications of network topologies but describes the path that the … takes between nodes being used as opposed to the actual physical connections between nodes.

5. The simplest topology is a permanent link between two … .

6. Easiest to understand, of the variations of point-to-point topology, is a point-to-point … channel that appears, to the user, to be permanently associated with the two endpoints.

7. Using circuit-switching or … technologies, a point-to-point circuit can be set up dynamically, and dropped when no longer needed.

8. If the machine address does not match the intended … for the data, the machine ignores the data.

9. The network does not necessarily have to resemble a star to be classified as a star network, but all of the … on the network must be connected to one central device.

10. Each node in the network having a specific fixed number, of nodes connected to it at the next lower level in the …, the number, being referred to as the branching factor of the hierarchical tree.

Task 4. Find the words in the text to match the definitions given below.

1. A network topology in which each node connects to exactly two other nodes, forming a single continuous pathway for signals through each node – a ring. (par. 2)

2. A network architecture in which a set of clients are connected via a shared communications line/cables. (par. 2)

3. Iterative algorithms for creating networks which are able to reproduce the unique properties of the scale-free topology and the high clustering of the nodes at the same time. (par. 2)

4. It consists of one central switch, hub or computer, which acts as a conduit to transmit messages. (par. 2)

5. A structured collection of data. (par. 7)

Task 5. Points for discussion.

1. Why do networks need to be organized? What is network topology for?

2. There are five major types of networks. Which one is better, in your opinion? How does its structure influence your choice?

3. What other ways to connect computers do you now? Give their brief description.

4. Which way of connection do you consider to be better – File Server or Client/Server connection? Give reasons.

5. What was the contribution of Morgan Stanley, a global financial services firm, into information systems development?

Task 6. Match the words with their definitions.

1. Destination	a) a physical computer (a computer hardware system) dedicated to run one or more services (as a host), to serve the needs of the users of other computers on a network
2. Hub	b) a place to which something is sent; a place or point aimed at
3. Server	c) a particular way that information is encoded for storage in a computer file
4. Data	d) values of qualitative or quantitative variables, belonging to a set of items
5. Format	e) a piece of software designed to fix problems with, or update a computer program or its supporting data
6. Query	f) a device for connecting multiple devices together and making them act as a single network segment
7. Patch	g) in general, a form of questioning in a line of inquiry

Unit 25
Interconnecting Networks

Task 1. Comprehension questions.
1. Why may one organization have many different networks?
2. Why are a diverse set of data communications technologies involved to allow the free flow of information?
3. Why is communication protocol a standard set of rules?
4. What is the TCP protocol responsible for?
5. What does IBM find?
6. What is Ethernet?

Task 2. Say whether the statements below are true or false.
1. In the United States frame relay is not popular.
2. Protocols are often described at the international or industry level.
3. The TCP protocol is not responsible for verifying correct delivery of data from sender to receiver.
4. The hospitality industry is also installing Wi-Fi for their guests.
5. The variety of wireless communication protocols is capable of suppressing a wide range of business applications.

Task 3. Fill in the gaps with the appropriate words.
Capable, wireless, frame, executives, mobile, cost-efficient, applications, multiplexed, divide, recognize

1. Frame relay is a packer switching protocol for … data transmission of internet traffic between local area networks and between end points in a wide area network.
2. Data cells from various communication devices are then … .
3. The feedback from travelers has been so positive that … at other airports are considering following this approach.
4. Its successful development would pose a threat to the broad use of other advanced … technology.
5. The variety of wireless communication protocols is … of supporting a wide range of business application.
6. Communications are not possible unless senders and receivers … and deserve a command protocol.

7. The OSI model … devices data communication functions into seven distinct layers.

8. The protocol puts data in a variable-sized unit called … .

9. The present state of … wireless communication is often called 2.5G.

10. The variety of wireless communications protocols is capable of supporting a wide range of business … .

Task 4. Find the words in the text to match the definitions given below.

1. Encourage the development of something especially something desirable.

2. A sheet, quantity or thickness of material, a level of seniority.

3. To be in conflict with.

4. Relating to an owner or ownership.

Task 5. Points for discussion.

1. Define the notion of communication protocols.

2. Describe a few of the most common protocols.

3. Compare the open systems interconnection (OSI) model with Ethernet.

4. Identify the frame relay protocol.

5. Explain how to formulate communication protocols.

Task 6. Match the words with their definitions.

1. Common	a) to make sure or demonstrate that something is true, to check
2. Access	b) a code, law, regulation, decision
3. Error	c) ordinary, done often, without a special rank
4. Rule	d) the means of opportunity to approach or enter a place.
5. Verify	e) a mistake or inaccuracy

Unit 26
Network Basics

Task 1. Comprehension questions.

1. What do we need computer networks for? What do we have to know to take full advantage of networks and distributed processing?

2. Name three basic processing strategies. How do they differ?

3. How does an application program request data from a disk drive on the network?

4. What are the functions of communication software?

5. What types of network-management products do the companies use? In what way?

Task 2. Say whether the statements below are true or false.

1. With centralized processing, processing devices are placed at various remote locations.

2. Terrorist attacks sparked many companies to distribute their workers, operations, and systems much more widely.

3. Network-management software simplifies the process of updating files and programs on computers on the network.

4. Fault detection and performance management employ the TCP/IP to obtain key information from individual network components.

5. The IS staff can identify and resolve fault and performance issues after they have affected customers and service.

Task 3. Fill in the gaps with the appropriate words.

Illegally, error, mainframe, protocols, management, incorporates, tools, database, distribution, NOS.

1. You should understand basic processing strategies, communications software, and communications … .

2. It uses a proprietary Retail Information System (RIS) that runs on a single … computer.

3. Most communications software packages provide … checking and message formatting.

4. When network equipment is required, the … makes sure that these resources are used correctly.

5. Network-management software protects software from being copied, modified, or downloaded … and performs error control to locate telecommunications errors and potential network problems.

6. Poor … of the network can cause a whole company to suffer.

7. The support system offers a set of telecommunications-infrastructure-management capabilities, including fault-management and service-activation … .

8. The devices reply to the management system with performance data that the system stores in a … .

9. The latest network-management technology even … automatic fixes.

10. The … of the processing across the organizational system ensures that the right information is delivered to the right individuals, maximizing the capabilities of the overall information system.

Task 4. Find the words in the text to match the definitions given below.

1. Helpful or good to something or someone. (par. 1)

2. Small and light enough to be operated while held in one or both hands. (par. 2)

3. According to established procedure; regular; habitual. (par. 10)

4. An underlying base or foundation especially for an organization or system. (par. 11)

5. Any sound or information intended to give notice of approaching danger. (par. 13)

Task 5. Points for discussion.

1. Tell your opinion about advantages and disadvantages of each type of basic processing strategies.

2. What basic processing strategy would you choose if you needed to make a decision? Explain your choice.

3. Why do we need network-management software? What are its benefits?

4. Are people using network-management products in Ukraine? What for?

5. In what ways can a company increase its profit by using fault detection and performance management?

Task 6. Match the words with their definitions.

1. Centralized processing	a) software that provides a number of important functions in a network, such as error checking and data security
2. Decentralized processing	b) an output device that draws graphs and other pictorial images on paper, sometimes using attached pens

3. Distributed processing	c) a software program specifically designed to help manage and tune the computer hardware, operating system or application software, and perform a single task or a small range of tasks; as opposed to application software which tends to be software suites
4. Communications software	d) systems software that controls the computer systems and devices on a network and allows them to communicate with each other
5. Network operating system (NOS)	e) a temporary suspension of operation, especially of electrical power supply
6. Network-management software	f) the software that monitors traffic in and out of a private network or a personal computer and allows or blocks such traffic depending on its perceived threat
7. Plotter	g) software that enables a manager on a networked desktop to monitor the use of individual computers and shared hardware (such as printers), scan for viruses, and ensure compliance with software licenses
8. Firewall	h) processing alternative in which all processing occurs in a single location or facility
9. Utility	i) processing alternative in which computers are placed at remote locations but connected to each other via a network
10. Outage	j) processing alternative in which processing devices are placed at various remote locations

Unit 27
Telecommunications Applications (Linking Personal Computers to Mainframes and Networks, Voice Mail, Electronic Software Distribution and Electronic Document Distribution)

Task 1. Comprehension questions.
1. What are the disadvantages of using telecommunications and networks?
2. Which systems are called unattended?

3. How does voice mail work?

4. What is the problem with electronic software distribution (ESD)?

5. What does electronic document distribution (EDD) involve ?

Task 2. Say whether the statements below are true or false.

1. EDD involves receiving documents such as sales reports etc.

2. In some voice mail systems, a code is usually assigned to an individual instead of a group of people.

3. Telecommunications and networks are a vital part of today's information systems.

4. Unattended systems seldom perform the functions automatically.

5. With the hardware, IS worker can remotely install and update the operating system and applications on the PCs.

Task 3. Fill in the gaps with the appropriate words.

Piracy, receive, acquiring, strategic, transmit, software, instruct, telecommunications, IS, SMS.

1. EDD … allows word processing and graphics documents to be converted into the binary code and sent over networks.

2. There is one huge problem with ESD, namely software … .

3. With voice mail, users can leave, …, and store verbal messages for and from other people around the world.

4. … is a critical component of information systems.

5. Unattended systems … the computer to connect to another computer on the network, send information and then disconnect from the line.

6. Networks also allow organizations to … documents without using paper.

7. Using software, … workers can remotely install and update the operating system.

8. Some organizations transfer millions of important and … messages from one location to another.

9. Marathon uses … to scan workstations and servers to identify those needing an upgrade.

10. Electronic software distribution is quicker and more convenient than traditional ways of … software.

Task 4. Find the words in the text to match the definitions given below.

1. To indicate or specify. (text **EDD**)
2. A small set of instructions to correct or improve a computer program. (text **ESD**)
3. To give out or allot. (text **Voice Mail**)
4. Any interference. (text **Linking...**)
5. An interconnected group or system. (text **Telecommunications...**)

Task 5. Points for discussion.

1. How can telecommunications help business?

2. Think of voice mail features.

3. What do you do if you are a software company and you reach a point when you notice that your costs (production, delivery, customer support, etc.) begin to skyrocket? Do you start a downsizing campaign within your company? Or do you try to find lucrative, innovative solutions that not only allow you to keep your trusty employees but also start bringing you a quite significant profit?

4. Companies could not survive without telecommunications. Do you agree with this statement?

5. How can software piracy be fought?

Task 6. Match the words with their definitions.

1. To convert	a) to predict or calculate in advance
2. Patch	b) to produce or bring into being; create
3. To forecast	c) able to be trusted
4. To generate	d) a small set of instructions to correct or improve a computer program
5. Reliable	e) to change or adapt the form, character, or function of; transform
6. Circumstances	f) dual
7. Binary	g) conditions of time, place, etc., that accompany or influence an event or condition

Unit 28
Call Centers, Telecommuting,
Videoconferencing, Electronic Data Interchange

Task 1. Comprehension questions.

1. What is a call center? And what kind of support does it provide?

2. Explain the concept of telecommuting. Why is it so popular among workers?

3. What advantages of videoconferencing can you list?

4. What does EDI stand for? Explain what it means.

5. What does EDI technology eliminate?

Task 2. Say whether the statements below are true or false.

1. An automatic call distributor is frequently employed to validate callers at call centers.

2. Telemarketers may call numbers on the list without any restrictions.

3. Employing telecommuting companies can seldom save money.

4. Videoconferencing reduces company's travel bills.

5. The idea of EDI is to connect corporate computers among organizations.

Task 3. Fill in the gaps with the appropriate words.

Information flows, parties, customer support, telecommuters, reductions, tools, providing, instant message, Videoconferencing, intervention, EDI, communications technologies.

1. Today, customers contact companies by telephone, email, online chat, fax, and … .

2. Some of call center technologies include speech recognition software to allow computers to handle first level of … , text mining and natural language processing.

3. Many … work from home, while others, sometimes called "nomad workers" use mobile telecommunications technology to work from coffee shops or other locations.

4. Telework is facilitated by … such as groupware, virtual private networks, conference calling, videoconferencing, and Voice over IP (VOIP).

5. … differs from videophone calls in that it is designed to serve a conference or multiple locations rather than individuals.

6. Like all long distance … such as phone and Internet), by reducing the need to travel to bring people together the technology also contributes to … in carbon emissions, thereby helping to reduce global warming.

7. EDI implies a sequence of messages between two …, either of whom may serve as originator or recipient.

8. EDI can be formally defined as the transfer of structured data, by agreed message standards, from one computer system to another without human… .

9. Organizations that send or receive documents between each other are referred to as "trading partners" in … terminology.

10. EDI and other similar technologies save a company money by … an alternative to, or replacing, … that require a great deal of human interaction and materials such as paper documents, meetings, faxes, etc.

Task 4. Find the words in the text to match the definitions given below.

1. The use of methods for controlling industrial processes automatically, esp. by electronically controlled systems, often reducing manpower. (par.1)

2. Based or operating abroad in places where the tax system is more advantageous than that of the home country (par. 3)

3. A person who sells something, esp. real property (par. 3)

4. A business unit; a company or firm (par. 1 **Telecommuting**)

5. Money spent on something. (par. 1 **Videoconferencing**)

Task 5. Points for discussion.

1. Have you ever called a call center? Share your experience with your group mates. Was your problem solved?

2. Would you like to work using telecommuting technology? Why or why not?

3. Do you think videoconferencing will substitute traditional business meetings? Why or why not?

4. What popular software applications for videoconferencing do you know?

5. What are the possible prospects for EDI in future?

Task 6. Match the words with their definitions.

1. To communicate	a) to have or take a part or share with others
2. Workload	b) to oversee, direct, or manage (work, workers, a project, etc.); superintend
3. Support	c) the work done or amount produced by a person, machine, production line, manufacturing plant, etc., esp. over a given period
4. Personnel	d) the amount of work assigned for completion within a given period of time
5. Facility	e) a person who sells goods or articles individually or in small quantities directly to the consumer
6. To participate	f) a building, special room, etc.
7. Interaction	g) that cannot be touched; incorporeal; impalpable
8. To supervise	h) likely to succeed in competition
9. To enhance	i) maintenance and service, as for a computer system's software or hardware
10. Intangible	j) to improve the quality or condition of
11. Output	k) action on each other; reciprocal action or effect
12. Retailer	l) to give or exchange information, signals, or messages in any way, as by talk, gestures, or writing
13. Competitive	m) persons employed in any work, enterprise, service, establishment

Рекомендована література

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