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

Харків. Вид. ХНЕУ ім. С. Кузнеця, 2014
Затверджено на засіданні кафедри іноземних мов.
Протокол № 2 від 02.09.2013 р.

Укладачі: Бабій Ю. М.
Стебльова К. К.
Полежаєва О. В.

3-41 Збірник текстів та практичних завдань з англійської мови для студентів І курсу галузі знань 0501 "Інформатика та обчислювальна техніка" денної форми навчання / укл. Ю. М. Бабій, К. К. Стебльова, О. В. Полежаєва. – Х. : Вид. ХНЕУ ім. С. Кузнеца, 2014. – 56 с. (Укр. мов., англ. мов.)


Рекомендовано для студентів І курсу галузі знань 0501 "Інформатика та обчислювальна техніка" денної форми навчання.
Вступ

Збірник текстів та практичних завдань з навчальної дисципліни "Іноземна мова" розроблені для студентів 1 курсу галузі знань 0501 "Інформатика та обчислювальна техніка" деннії форми навчання. Методичні рекомендації організовані відповідно до завдань та умов вивчення іноземних мов у вищих навчальних закладах немовного профілю.


Метою методичних рекомендацій є поглиблення знань та вдосконалення мовленнєвих компетенцій студентів з англійської мови у сфері інформаційних систем та технологій.

Методична розробка спрямована на збагачення і розширення активного та пасивного словника студентів шляхом засвоєння термінології за допомогою лексичних завдань; вдосконалення навичок будувати діалогічні та монологічні висловлювання, обговорення запропонованих тем та проблем.

Завдання розроблені на основі поетапного засвоєння знань, на базі якого у студентів будуть формуватися вміння висловлювати свої думки. Студенти вдосконалюватимуть навички обговорення професійних проблем на основі питань до різноманітних професійних тем, пов’язаних з тематикою дисципліни.

Контроль знань, вмінь та навичок студентів може здійснюватися під час виконання завдань, термінологічних диктантів та обговорення поставленних проблем.
First Year of Education

Unit 1. Introduction to Information Systems

Task 1. Comprehension questions
1. How do you understand the word data?
2. How do you understand the work information?
3. What is the difference between data and information?
4. How do you understand the word process?
5. Describe the process of transforming data into information.

Task 2. Say whether the sentences below the text are true or false
1. Data is a collection of facts organized in such a way that they have additional value beyond the value of the facts themselves.
2. Process is a set of logically related tasks performed to achieve a defined outcome.
3. Rules and relationships can’t be set up to organize data into useful, valuable information.
4. Information can be considered data made more useful through the application of knowledge.
5. The process of defining relationships among data to create useful information does not require knowledge.

Task 3. Fill in the gaps with the appropriate words
Calculated, available, layout, process, increase, set up, converting, relationships, knowledge, determine.

1. Part of the knowledge needed for building a railroad layout, for example, is understanding how large an area is _____ for the layout, how many trains will run on the track, and how fast they will travel.
2. Turning data into information is a _______ or a set of logically related tasks performed to achieve a defined outcome.
3. Rules and relationships can be_______ to organize data into useful, valuable information.
4. The type information created depends on______ defined among existing data.

5. The information could be used by the manager to______ which product lines are the most popular and profitable.

6. The act of selecting or rejecting facts according to their relevancy to particular tasks is also based on a type of knowledge used in the process of______ data into information.

7. 7.______is an awareness and understanding of a set of information and the ways that information can be made useful to support a specific task or reach a decision.

8. Providing information to customers can also help companies______ revenues and profits.

9. By arranging pieces of track in a certain way, a railroad______ begins to emerge.

10. 10. The manager could have manually______ the sum of the sales of each representative.

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

1. To operate on data by means of a program (p. 4).

2. The quantities, characters, or symbols on which operations are performed by a computer, being stored and transmitted in the form of electrical signals and recorded on magnetic, optical, or mechanical recording media (p. 2).

3. Data as processed, stored, or transmitted by a computer (p. 1).

4. To change from one system, use, or method to another, or to make something do this (p. 4).

5. A range of similar products or services that are sold by the same company, with different features and different prices (p. 3).

Task 5. Points for discussion

1. What is the role of information system department?

2. What is the purpose of information system?

3. What is the role of information systems in society?

4. What is the design of information system based on?

5. What are benefits of information system for business?
Task 6. Match the words with their definitions

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Data</td>
<td>a) able to be obtained, used, or reached</td>
</tr>
<tr>
<td>2. To apply</td>
<td>b) the way a thing turns out; a consequence</td>
</tr>
<tr>
<td>3. To be available</td>
<td>c) to describe the meaning of something, esp. a word, or to explain something more clearly so that it can be understood</td>
</tr>
<tr>
<td>4. Profitable</td>
<td>d) raw facts, such as an employee’s name and number of hours worked in a week, inventory part numbers or sales orders</td>
</tr>
<tr>
<td>5. Information</td>
<td>e) a set of logically related tasks performed to achieve a defined outcome</td>
</tr>
<tr>
<td>6. Outcome</td>
<td>f) data as processed, stored, or transmitted by a computer</td>
</tr>
<tr>
<td>7. To define</td>
<td>g) an awareness and understanding of a set of information and ways that information can be made useful to support a specific task or reach a decision</td>
</tr>
<tr>
<td>8. Process</td>
<td>h) to bring or put into operation or practical use</td>
</tr>
<tr>
<td>9. Layout</td>
<td>i) a thing arranged or set out in a particular way</td>
</tr>
<tr>
<td>10. Knowledge</td>
<td>j) resulting in or likely to result in a profit or a benefit</td>
</tr>
</tbody>
</table>

Unit 2. System and Modeling Concepts

Task 1. Comprehension questions

1. What is a system?
2. What does the system include?
3. What is the configuration?
4. What is knowledge needed in a system for?
5. How can systems be classified?

Task 2. Decide whether the statements are true or false

1. Obviously, tangible outputs for the car wash process are a dirty car, water, and the various cleaning ingredients.
2. Experience is used to define the steps in the car operation and the order in which those steps are executed.
3. The processing mechanisms consist of first selecting which of the cleaning options one wants and communicating that to the operator of the car wash.
4. Dependent elements or components of a system interact to create a clean car.
5. The secondary purpose of the car wash is to clean the automobile.
6. The desired outcome of the system is a clean car.
7. Systems can be classified along a huge number of dimensions.
8. A janitorial company that cleans offices after business hours most likely represents a simple stable system.
9. If a company is nonadaptive, it may survive very long.
10. Osborne Computer did not change rapidly enough with the changing market for computers and software.

Task 3. Fill in the gaps with the appropriate words
Skills, outputs, components, systems, software, feedback, configuration, concept, boundary, adaptive.

1. Systems have structure, defined by ______ and their composition.
2. People need a broad range of ______ in order to take their place in the technological society of the 21st century.
3. Physical ______ are tangible entities that may be static or dynamic in operation.
4. Natural systems may not have an apparent objective but their ______ can be interpreted as purposes.
5. The ________ of input and output is very broad. E.g., an output of a passenger ship is the movement of people from departure to destination.
6. We scope a system by defining its______; this means choosing which entities are inside the system and which are outside – part of the environment.
7. The ______ affects system function and performance.
8. The typical examples of complex _____ systems include the global macroeconomic network within a country or group of countries.
9. Often, configuration pertains to the choice of hardware, ______, firmware and documentation.
10. As an IT-organization seeks to improve its performance, ______ helps it to make required adjustments.
Task 4. Match the words from the text with the definitions given below

1. The term denoting either an entrance or changes which are inserted into a system and which activate / modify a process (1).
2. In communications or computer systems, it is an arrangement of functional units according to their nature, number and chief characteristics (4).
3. The term denoting either an exit or changes which exit a system and which activate / modify a process (1).
4. A set of interacting or interdependent components forming an integrated whole or a set of elements (often called "components") and relationships which are different from relationships of the set or its elements to other elements or sets (1).
5. A collection of computer programs and related to data that provides the instructions for telling a computer what to do and how to do it (6).

Task 5. Points for discussion

1. What are the inputs of a system? What are their functions? Are they of the same importance?
2. What is an output in a system? Can it precede the inputs? Why?
3. What is a configuration? How does it influence the system and its outcome? What examples of a configuration can you give?
4. What are the types of systems? Provide examples for each one.
5. Consider the example of Osborne Computer. Is taking the system type into account important to a company? Why?

Task 6. Match the words with their definitions

1. Processing mechanism.
2. Feedback mechanism.
3. Closed system.
4. Stable system.
5. Open system.
6. Adaptive system.
7. Nonadaptive system.
8. Complex system:
   a) a system that isn't vulnerable to different changes;
   b) a system that is able to adapt to changes;
   c) the analysis of the problem and looking for the ways of its resolution;
d) a system that exchanges energy, but not matter, with its environment;

e) a system that consists of several levels of components;

f) estimation of the result;

g) a system that is not flexible enough and often suffers because of changes;

h) a system that exchanges matter and energy with its surroundings.

System Performance and Standards

Task 1. Comprehension questions

1. What is efficiency? How can it range?
2. What is the term "efficiency" used for?
3. What does the term "effectiveness" mean? What does effectiveness have in common with efficiency?
4. What are the determinants of system performance?
5. What is a system variable? What is the difference between a system variable and a system parameter?

Task 2. Decide whether the statements are true or false

1. Some motors have an efficiency of 50 percent or more because of the energy lost to friction and heat generation.
2. A gasoline engine is more efficient than a steam engine because the gasoline engine produces more output.
3. Effectiveness can be computed by dividing the goals actually achieved by the total of the set goals.
4. Estimating system performance also calls for the use of performance standards.
5. A system performance standard for a certain manufacturing process might have more than 1 percent of defective parts.
6. As soon as the standards are set, system performance is measured and compared with the standard.
7. All components of a system are under direct management control.
8. The price of company sets for its product is a system variable because it cannot be controlled.
9. A system parameter is a value or quantity that cannot be controlled, such as the cost of a raw material.
10. There is only one way to measure system performance.
Task 3. Fill in the gaps with the appropriate words
*Effectiveness, objectives, manufacturing process, determinant, standard, performance, control systems, goals, efficiency, variables.*

1. In general, _____is a measurable concept, quantitatively determined by the ratio of output to input.
2. The concept of _____improvement can be applied to either individual performance such as an athlete or organizational performance such as a racing team or a commercial enterprise.
3. Performance is a measure of the _____achieved.
4. "_____", is a relatively vague, non-quantitative concept, mainly concerned with achieving objectives.
5. There are two common classes of______, with many variations and combinations: logic or sequential controls, and feedback or linear controls.
6. An established norm or requirement about technical systems is technical ______.
7. Performance efficiency is the ratio between effort expended and _____achieved.
8. _____management (MPM) is a collection of technologies and methods used to define how products are to be manufactured.
9. An influencing or determining element or factor is called ______.
10. Environment ______ are a set of dynamic named values that can affect the way running processes will behave on a computer.

Task 4. Match the words from the text with the definitions given below
1. A measure to estimate the results achieved (1).
2. The capability of producing a desired result (3).
3. The process of reducing the number of objects (3).
5. In computer programming, it is a special kind of variable, used in a subroutine to refer to one of the pieces of data provided as input to the subroutine (4).

Task 5. Points for discussion
1. How can you measure system performance? What are the ways?
2. What can the term "efficiency" be used for? How can the efficiency be evaluated?
3. Is there any difference between the notions of efficiency and effectiveness?
4. What can help in evaluating system performance? Why should the standards be set?
5. What parts of a system are under managerial control and what are not? Why cannot the latter be controlled?

Task 6. Match the words with their definitions
1. Quantity.
2. Management.
3. Raw material.
4. Defective.
5. Damage.
7. Equivalent.
8. Generation:
   a) the process of coming or bringing into being;
   b) computer software that performs a fundamental function especially of a larger program;
   c) the conducting or supervising of something;
   d) loss or harm resulting from injury to person, property or reputation;
   e) a determinate or estimated amount;
   f) crude or processed material that can be converted by manufacture, processing, or combination into a new and useful product;
   g) like in signification or import;
   h) imperfect in form or function.

Information Systems and Work

Task 1. Comprehension questions
1. Why are a lot of airlines on the edge of bankruptcy?
2. What are the innovations in a new airplane that is likely to attract more passengers?
3. How did Song manage to make its luxurious accommodations available to passengers at a low fare?
4. What is special about Song’s online reservation?
5. Will Song contribute to the further Delta’s development? How?
Task 2. Decide whether the statements are true or false

1. Airlines are experimenting with new business models and practices hoping to find one that works in this highly competitive environment.
2. Song caters to its passengers through a number of in-flight amenities.
3. The passengers can use the display to design a personal playlist of favorite films.
4. Song prides itself on spending 23 percent less time in the air than aircraft in Delta's main line.
5. The minifilms irritate passengers as they wait for the flight.
6. Song provides a traditional online reservation system for booking flights.
7. Automated kiosks shorten lines in the terminal and reduce the need for customer service agents.
8. Dozens of streamlined information systems and new technologies are being tested.
9. The seconds and pennies saved are getting unimportant.
10. The goal is to allow business processes to proceed as smoothly as possible, with as little inconvenience to employees, management, and customers as possible.

Task 3. Fill in the gaps with the appropriate words

Bankruptcy, passenger, marketplace, accommodation, technology, competitive, information, airline, landmark, income.

1. Generally, _______ companies are recognized with an air operating certificate or license issued by a governmental aviation body.
2. There is a time delay between financial difficulties and _______.
3. It is necessary to obtain a degree to be _______ in today's job market.
4. A flight attendant on an airline would not be considered a "_______" while on duty.
5. Originally, a "_______" literally meant a geographic feature used by explorers and others to find their way back or through an area.
6. A seat, compartment, or room on a public vehicle are called _______.
7. Often _______ is viewed as a type of input to an organism or a system.
8. For firms, _______ generally refers to "net-profit" – what remains of revenue total after expenses have been subtracted.
9. A _______ is a location where goods and services are exchanged.
10. ____ is the making, modification, usage, and knowledge of tools, machines, techniques, crafts, systems, methods of organization, in order to solve a problem, improve a preexisting solution to a problem, achieve a goal or perform a specific function.

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

1. The circumstances, objects, or conditions by which one is surrounded (1).
2. A freight or passenger station that is central to a considerable area or serves as a junction at any point with other lines (4).
3. A vehicle (as an airplane or balloon) for traveling through the air (2).
4. A flat surface on which a picture or series of pictures is projected or reflected (3).
5. Putting aboard (4).

Task 5. Points for discussion

1. How have the information systems used at Song affected the duties of check-in agents and flight attendants?
2. What do you think are the biggest challenges for check-in agents and flight attendants in dealing with customers in the traditional airline business model?
3. How do the information systems Song uses allow the staff to be more efficient and effective?
4. How has the Song used technology and information to soften different hardships it faced?
5. Do other transportation modes share any of the same challenges that Song has addressed with information systems?

Task 6. Match the words with their definitions

1. Experiment.
4. Display.
5. Screen.
8. Interaction:
   a) the surface on which the image appears in an electronic display;
   b) the process of preparing an instructional program;
   c) the process of testing;
   d) one that purchases a commodity or service;
   e) mutual or reciprocal action or influence;
   f) a cathode-ray tube used for display;
   g) a new idea, method, or device;
   h) an electronic device (as a cathode-ray tube) that presents information in visual form.

   **Modeling a system**

**Task 1. Comprehension questions**
1. What is a model? What are its types?
2. What is a narrative model? Where is it widely used?
3. What is a physical model? What are the examples of its usage?
4. What is a schematic model? In what forms does it appear?
5. What is a mathematic model? What is its destination?

**Task 2. Decide whether the statements are true or false**
1. Since the beginning of recorded history, people have used models.
2. Nowadays the models are used by managers and decision makers for understanding the situation in their organization and making better decisions.
3. The minor types of models are physical and mathematical.
4. Both verbal and written descriptions of reality are considered physical models.
5. A narrative model is a tangible representation of reality.
6. Computers design and construct many physical models.
7. A schematic model is a graphic representation of reality.
8. Schematic models are used in everyday life.
10. An inaccurate model will usually lead to an accurate problem solution.
Task 3. Fill in the gaps with the appropriate words
Models, representation, scale, manager, description, investor, illustrations, chart, organization, graph.

1. The term "_____" as a graphical representation of data has multiple meanings.
2. Physical _____ allow visualization, from examining the model, of information about the thing the model represents.
3. General _____ is a descriptive term for certain executives in a business operation.
4. By coordinated and planned cooperation of the elements, the _____ is able to solve tasks that lie beyond the abilities of the single elements.
5. _____ is also the fiction-writing mode for transmitting a mental image of the particulars of a story.
6. From the most general and abstract systemic perspective, _____ relates to a role or function or a property of an abstract or real object, relation or changes.
7. Technical ______ generally describe and explain the subjects to a non-technical audience.
8. Very often the _____ model is used as a guide to making the object in full size.
9. An ______ is someone who allocates capital with the expectation of a financial return.
10. In mathematics, a _____ is an abstract representation of a set of objects where some pairs of the objects are connected by links.

Task 4. Match the words from the text with the definitions given below
1. A written or printed character (3).
2. A graphic design that explains rather than represents (3).
3. A sequence of instructions written to perform a specified task with a computer (3).
4. An answer to a problem (4).
5. A usually miniature representation of something (1).
Task 5. Points for discussion
   1. Why does the society have a need to develop models?
   2. How are the models developed and implemented nowadays?
   3. What are the main types of existing models? Are they of the same importance?
   4. Each type of model has its destination. Can they be interchangeable?
   5. Is it necessary for a model to be precise or accurate? What can a development of an abstract or inaccurate model lead to?

Task 6. Match the words with their definitions
   1. Abstraction.
   2. Approximation.
   5. Approach.
   7. Budget.
   8. Projection.
   10. Assumption:
       a) the quality or state of being close or near;
       b) a particular manner of taking steps toward a particular purpose;
       c) an estimate of future possibilities based on a current trend;
       d) an abstract idea or term;
       e) existing in possibility, capable of development into actuality;
       f) the amount of money that is available for, required for, or assigned to a particular purpose;
       g) a procedural plan that indicates the time and sequence of each operation;
       h) a usually detailed account or statement;
       i) a photographic print in white on a bright blue ground or blue on a white ground used especially for copying maps, mechanical drawings, and architects' plans;
       j) a fact or statement.
Unit 3. What Is an Information System?

Task 1. Comprehension questions
1. What is an Information System?
2. What is the role of an Information System in operating the computer?
3. What are the components of an Information System?
4. What is critical to the successful operation of a system?
5. What is the main task of a feedback mechanism?

Task 2. Say whether the statements below are true or false
1. Input is the activity of gathering and capturing information.
2. Input is a manual process.
3. Processing data into useful information is critical in business settings.
4. Storage involves keeping data and information available for the future use.
5. In information systems, output involves producing raw data.
6. Special computer programs and equipment create the original design and allow the designer to rapidly revise it.
7. Output can be produced only in one way.
8. Feedback is output that is used to make changes to input or processing activities.
9. Computer system can be proactive – predicting future events to avoid problems.
10. Forecasting cannot be used to estimate future sales.

Task 3. Fill in the gaps with the appropriate words
Output, information, data, managers, marketing, manual, errors, comparisons, paychecks, display.

1. An information system is a set of interrelated elements or components that collect manipulate and store ________ and information.
2. Input to a ________ system might include customer survey responses.
3. Accurate input is critical to achieve the desired ____________.
4. Processing can involve making calculations, making ________ and taking alternative actions, and storing data for future use.
5. Outputs can include ________ for employees, reports for managers and others.
6. Output involves producing useful ________, usually in the form of documents and reports.
7. For a computer, printers and ________screens are common output devices.

8. Output can also be a ________ process involving handwritten reports and documents.

9. ________or problems might make it necessary to correct input data or change a process.

10. Feedback is also important for ________and decision makers.

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

1. A person who works for another in return for financial or other compensation (2).
   2. Someone who buys and pays for goods or services (3).
   3. A collection of facts from which conclusions may be drawn; data, or instructions in any medium or form (8).
   4. The return of a portion of the output of a process or system to the input, especially when used to maintain performance or to control a system or process (10).
   5. The process of storing information in a computer memory or on a magnetic tape or disk (11).

Task 5. Points for discussion

1. What is input? What forms of input do you know?
2. What are the main features of processing?
3. What is output? What kinds of output can you name?
4. What is the role of feedback in information systems?
5. Provide your own example of forecasting.

Task 6. Match the words with their definitions

Table 2

<table>
<thead>
<tr>
<th>1. Net pay</th>
<th>a) A group of interacting, interrelated, or interdependent elements forming a complex whole</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Cash</td>
<td>b) Money in the form of bills or coins; currency</td>
</tr>
<tr>
<td>3. Supplier</td>
<td>c) A fixed regular payment made by an employer, often monthly, for professional or office work as opposed to manual work</td>
</tr>
<tr>
<td>4. System</td>
<td>d) The remaining amount after deductions from the gross salary</td>
</tr>
<tr>
<td>5. Gross pay</td>
<td>e) Manufacturer, uses tools and labor to make things for sale</td>
</tr>
</tbody>
</table>
Unit 4. Business Information Systems. Electronic and Mobile Commerce

Task 1. Comprehension questions
1. Who can execute business transactions in e-commerce?
2. What factors contribute to the growth of e-commerce sector?
3. How does e-commerce attract small businesses?
4. What are the advantages of mobile commerce?
5. What concerns do consumers have about e-commerce?
6. How does e-commerce process for placing a purchase order work?
7. What techniques do business information systems use to perform a number of related tasks?

Task 2. State whether these sentences are true (T) or false (F)
1. E-commerce is reserved mainly for consumers visiting Web-sites for online shopping.
2. Improvement in the Internet and Web security is one of the factors, ensuring the growth of business-to-business segment.
3. The ease of e-commerce attracts a great number of consumers.
4. As a result of consumers' concern about information privacy, advertisers plan to cut spending in conventional media.
5. In business-to-business e-commerce to place an order with an office-supply company, an employee must turn to the purchasing department, which generates a formal purchase order.

Task 3. Fill in the gaps with the appropriate words
Paying system, streamlining, security measures, mobile device, concern, delivery, access, high-tech, crime, purchasing, Electronic procurement.

1. The _____ was denied as the user entered the wrong password.
2. _____ refers to a business or organization attempting for acquiring goods or services to accomplish the goals of the enterprise.
3. _____ focuses on making changes to simplify processes and become more efficient.
4. _______help e-commerce business to protect their customers.
5. Consumer privacy is the most important _______ on the Internet.
6. Online shopping offers consumers _______ of goods to their homes.
7. A _______ is a small, hand-held computing device, typically having a display screen with touch input and / or a miniature keyboard.
8. Implementing an _______ system offers a company many benefits.
9. _______ refers to crimes that are committed either against new technologies or with the support of new technologies, often involving (but not restricted to) computers or computer networks.
10. An e-commerce _______ facilitates the acceptance of electronic payment for online transactions.

**Task 4. Find the words in the text that correspond to the following definitions**

1. Interactions between businesses and their customers.
2. A system involving data processing, which does not make use of stored-program computing equipment.
3. Businesses that have physical (rather than virtual or online) presences, in other words, stores (built of physical material such as bricks and mortar) that you can drive to and enter physically to see, touch, and purchase merchandise.
4. An attempt to make a machine or network resource unable to its intended users.
5. A system using radio-frequency, infrared, microwave or other types of electromagnetic or acoustic waves in place of wires, cables, or fiber optics to transmit signals or data.

**Task 5. Points for discussion**

1. Accessibility of e-commerce.
2. Advantages and disadvantages of e-commerce.
3. Risks associated with e-commerce.
4. Security measures introduced by e-commerce businesses.
5. E-commerce in Ukraine and abroad.
Task 6. Match the words with their definitions

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Portable</td>
<td>a) a company or a person that provides a particular product</td>
</tr>
<tr>
<td>2. Supplier</td>
<td>b) a person who sells something</td>
</tr>
<tr>
<td>3. Capacity</td>
<td>c) able to be carried or moved easily, especially by hand</td>
</tr>
<tr>
<td>4. Network</td>
<td>d) the ability or power to contain, absorb, or hold something</td>
</tr>
<tr>
<td>5. Vendor</td>
<td>e) a system of interconnected computer systems, terminals, and other equipment allowing information to be exchanged</td>
</tr>
</tbody>
</table>

Table 3

**Transaction Processing Systems and Enterprise Resource Planning**

**Task 1. Comprehension questions**

1. What purposes were computers originally used for?
2. Which business system was computerized one of the first?
3. Why is a transaction processing system so important for most organizations?
4. What functions does an enterprise resource system perform?
5. What are the benefits of an enterprise resource system?

**Task 2. State whether these sentences are true (T) or false (F)**

1. Understanding of basic business operations and functions is not necessary for understanding of a transaction processing system.
2. Early payroll systems produced employee-related reports for state and federal agencies.
3. Modern organizations can function without a transaction processing system.
4. An enterprise resource planning system allows preparing a forecast that estimates customer demand for several weeks.
5. An enterprise resource planning system simplifies business operations of a company.
Task 3. Fill in the gaps with the appropriate words

Decision-making, pay rate, inventory, control, customer, relationship, management, payroll, business, applications, distribution, customer, billing, transaction, processing, system enterprise, resource, planning.

1. ______ is a widely implemented model for managing a company’s interactions with customers, clients, and sales prospects.
2. Every organization has manual and automated ______, which process the detailed data necessary to update records about the fundamental business operations of the organization.
3. The term______ encompasses every employee of a company who receives a regular wage or other compensation.
4. _______is the supervision of supply, storage and accessibility of items in order to ensure an adequate supply.
5. These days, lots of companies use______ software to issue information about what customers owe.
6. The purpose of______ is to facilitate the flow of information between all business functions inside the boundaries of the organization and manage the connections to outside stakeholders.
7. A basic ______depends on such things as an employee’s age and job classification.
8. Some ______are built in-house and some are bought from vendors.
9. Trial is an important part of the consumer ______process, and it reduces consumer’s risk.
10. Traditional ______channels are threatened by online e-commerce.

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

1. A systematized collection of data that can be accessed immediately and manipulated by a data-processing system for a specific purpose.
2. The programs that can be used with a particular computer system.
3. A machine or tool used for a specific task.
4. The amount of wages someone earns.
5. The amount of a commodity that consumers are willing and able to purchase at a specified price.

Task 5. Points for discussion

1. Early and modern business applications.
2. The role of a transaction processing system in day-to-day activity of the organization.
3. Functions of an enterprise resource planning system.
4. Advantages of introducing an enterprise resource planning system on the enterprise.
5. Application spheres of transaction processing and enterprise resource planning systems.

Task 6. Match the words with their definitions

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Output</td>
<td>a) the data fed into a computer from a peripheral device</td>
</tr>
<tr>
<td>2. Input</td>
<td>b) a failing, defect, or deficiency</td>
</tr>
<tr>
<td>3. Shortcoming</td>
<td>c) the information produced by a computer</td>
</tr>
<tr>
<td>4. To estimate</td>
<td>d) to remove or take out; get rid of</td>
</tr>
<tr>
<td>5. To eliminate</td>
<td>e) to form an approximate idea of (distance, size, cost, etc.)</td>
</tr>
</tbody>
</table>

Information and Decision Support Systems

Task 1. Comprehension questions
1. What expense does a transaction processing system entail?
2. What types of reports can be produced with the help of management information systems?
3. Why are managerial reports necessary for an organization?
4. In what cases are exception reports produced?
5. How does a decision support system function?
6. In what cases are decision support systems used?
7. What are the essential elements of a decision support system?

Task 2. State whether these sentences are true (T) or false (F)
1. The benefits provided by a transaction processing system are inconsiderable, comparing with the expenses it requires.
2. Scheduled reports give staff information about customers' preferences.
3. The total payroll summary report is useful for both an accounting manager and a production manager.
4. A decision support system focuses on operational efficiency.
5. A decision support system helps to make a final decision.

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

*Database management system, strategic planning, decision support system, groupware, human resource management, executive information system, scheduled reports, management information systems, exception report, crisis management.*

1. The focus of _____ is to deal with the manpower and all the decisions related to it that can have an impact on the productivity.
2. The firm must engage in _____ that clearly defines objectives and assesses both internal and external situations to formulate strategy, evaluate the process, and make adjustments as necessary to stay on track.
3. An______ is a short report mainly highlighting the differences between the planned results and the actual results.
4. ______ is technology designed to facilitate the work of groups.
5. Managers use _____ to gather and analyze information about various aspects of the organization, such as personnel, sales, inventory, production or other applicable factors.
6. An______ is the type of information system used by executives to access and manage the data they require to make informed business decisions.
7. In recent years, there have been rapid developments in two technologies aimed at improving decision-making: _____ and expert systems.
8. Forward-thinking companies across the country and around the world are proactively practicing ______.
9. A______ is an application used to create and access databases.
10. Reports that come out at fixed times are called______.

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

1. The means or equipment facilitating the performance of an action.
2. A person employed to represent a business and to sell its merchandise.
3. Capable of being touched or felt; substantial rather than imaginary.
4. A company that makes large quantities of goods.
5. To enter or retain (information) in a storage device.
Task 5. Points for discussion
1. Tasks of management information systems.
2. Reports provided by management information systems.
3. A decision support system as means of solving complex problems.
4. The role of a group support system in decision-making process.
5. Spheres of application for an executive support system.

Task 6. Match the words with their definitions

| 1. Assistance | a) productive work done for wages |
| 2. Inquiry     | b) to grow or increase or cause to grow or increase rapidly |
| 3. Labor      | c) to act on or in close relation with each other |
| 4. To interact| d) a request for information |
| 5. To proliferate | e) help; support |

Table 5


Task 1. Comprehension questions
1. What are the components of Artificial Intelligence?
2. What is the main advantage of Expert Systems?
3. What are the main areas of research in Artificial Intelligence and Expert Systems?
4. What kinds of virtual worlds do you know?
5. What applications of virtual reality can you name?

Task 2. Say whether the statements below are true or false
1. Artificial intelligence is a field in which the computer system takes on the characteristics of computer processing.
2. There are seven major elements of Artificial Intelligence.
3. Robotics is an area of Artificial Intelligence in which machines take over complex, dangerous or routine tasks.
4. Expert systems can be applied only to three particular disciplines.
5. The virtual world is presented in full scale and relates properly to computer size.
6. Virtual world represent any 3-D setting, real or abstract.
7. Virtual world can be animated, interactive, and shared.
8. Virtual reality cannot be a medium for communication.
9. Several people can share and interact in the same environment.
10. Useful applications of virtual reality include training in a variety of areas.

Task 3. Fill in the gaps with the appropriate words

*Interface, joysticks, applications, worlds, expert, medium, knowledge, computers, robots, experience.*

1. Vision systems allow ________ and other devices to see, store, and process visual images.
2. Learning systems give _________ the ability to learn from past mistakes or experiences.
3. The unique value of __________ systems is that they allow organizations to capture and use the wisdom of experts and specialists.
4. The collection of data, rules, procedures, and relationships is contained in the expert system’s _________ base.
5. Virtual ________ can be animated, interactive, and shared.
6. A variety of input devices such as head-mounted displays, data gloves, __________ allow user to navigate through a virtual environment.
7. Directional sound, tactile and force feedback devices, voice recognition, and other technologies are used to enrich the immersive___________.
8. Virtual reality can be a powerful _________ for communication, entertainment, and learning.
9. Some virtual reality __________ allow views of real environments with superimposed virtual objects.
10. Virtual reality is reshaping the__________ between people and information technology.

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

1. A general purpose device that can be programmed to carry out a finite set of arithmetic or logical operations (2).
2. The use money in the hope of making more money (2).
3. A machine used to perform one or more relatively simple tasks (6).
4. A device that accepts video signals from a computer and displays information on a screen; a video display (7).
5. A collection of facts or data (7).

Task 5. Points for discussion
1. What is the main feature of Artificial Intelligence?
2. In what spheres of science can we apply Expert Systems?
3. What are the main advantages of virtual reality?
4. What kinds of devices help us to navigate through virtual reality?
5. What kinds of information systems would appear in 20 years?

Task 6. Match the words with their definitions

<table>
<thead>
<tr>
<th>1. Simulation</th>
<th>a) science and technology of general purpose, programmable machine systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Interface</td>
<td>b) two or more computers connected for the purpose of routing, managing, and storing rapidly changing data</td>
</tr>
<tr>
<td>3. Robotics</td>
<td>c) the mathematical representation of the interaction of real-world objects</td>
</tr>
<tr>
<td>4. Joystick</td>
<td>d) a lever by means of which the display on a screen may be controlled used esp for games, flight simulators, etc</td>
</tr>
<tr>
<td>5. Network</td>
<td>e) the connection and interaction between hardware, software and the user</td>
</tr>
</tbody>
</table>

Unit 5. Information Systems in Society, Business, and Industry Security, Privacy and Ethical Issues in Information Systems and the Internet

Task 1. Comprehension questions
1. Information systems can provide only benefits and there are a number of potential positive aspects to their use. Do you agree or disagree?
2. What is the ethical use of information systems? How do you understand this?
3. Enumerate the types of computer attacks on businesses and organizations you know.
4. Which security and control measures are used by companies to protect computer systems against attacks and their consequences?

5. What are the negative aspects of computerization?

Task 2. Say whether the sentences below the text are true or false

1. Some IS-professionals believe that computers may create new opportunities for unethical behaviour.

2. Many organizations ignore codes of conduct in the use of information systems.

3. Computer crime and the invasion of privacy are potential problems nowadays.

4. Ergonomics can help people and companies to avoid health-related problems of using computer systems.

5. The Internet isn't associated with unethical behaviour.

Task 3. Fill in the gaps with the appropriate words

Attacked, computer-related, ethical issues, code, to monitor, ergonomics, collect, to detect, firewalls, violate.

1. _______ and misuse have cost organizations millions of dollars.

2. Many organizations have_______ of conduct to foster ethical behaviour in the use of information systems.

3. __________, the study of designing and positioning computer systems can help people to avoid health-related problems of using computer systems.

4. A number of software products have been developed_______ and remove viruses from computer systems.

5. Some people believe that provisions may_______ an individual's privacy.

6. Some individuals and companies install_____to avoid viruses and prevent unauthorized people from gaining access to the computer system.

7. A lot of companies use a new computer system_____ any necessary data and make it available to government agencies.

8. Citizen spotters are hired _____ the Webcams.

9. ______ concern what is generally considered right or wrong.

10. Many businesses and other organizations are _____by various means.
Task 4. Match the words from the text with the definitions given below
1. To help something to develop over a period of time (p. 4).
2. To keep someone or something safe from harm, injury, damage, or loss (p. 5).
3. To cause someone to change a behaviour, belief, or opinion, or to cause something to be changed (p. 3).
4. A thing or things owned by someone; a possession or possessions (p. 3).
5. A complete computer including the operating system (main software) and equipment that makes it work (p. 7).

Task 5. Points for discussion
1. How to use information systems effectively?
2. What capabilities do you expect from an information system?
3. What is the role of information system department in a company?
4. What is the purpose of an information system?
5. What is the role of an information system in society?

Task 6. Match the words with their definitions

<table>
<thead>
<tr>
<th>1. Spam</th>
<th>a) the use of something in a bad, dishonest, or harmful way</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. To detect</td>
<td>b) to notice something, especially when it is not obvious</td>
</tr>
<tr>
<td>3. Firewall</td>
<td>c) to break or act against something such as a law, agreement, or principle, or to not respect something that should be treated with respect</td>
</tr>
<tr>
<td>4. A survey</td>
<td>d) to secretly listen to people by connecting a listening device to their telephone, or to attach a listening device to a telephone for this purpose</td>
</tr>
<tr>
<td>5. Ergonomics</td>
<td>e) emails that are sent to large numbers of people on the Internet, especially when these are not wanted</td>
</tr>
<tr>
<td>6. Penetration</td>
<td>f) to try to hurt or defeat someone or something using violence</td>
</tr>
<tr>
<td>7. A virus</td>
<td>g) a piece of code that is capable of copying itself and typically has a detrimental effect, such as corrupting the system or destroying the data</td>
</tr>
<tr>
<td>8. Abuse</td>
<td>h) to use a computer to gain unauthorized access to data in a system</td>
</tr>
<tr>
<td>9. To attack</td>
<td>i) a set of questions people are asked to gather information or find out their opinions, or the information gathered by asking many people the same questions</td>
</tr>
<tr>
<td>10. Fraud</td>
<td>j) the freedom to do things without other people's watching you or knowing what you are doing</td>
</tr>
</tbody>
</table>
11. To violate k) a computer system or program that prevents someone from seeing or using information on a computer without permission, especially someone using the internet

12. To wiretap l) wrongful or criminal deception intended to result in financial or personal gain

13. To require m) the act of getting inside something, especially past objects or substances that are intended to stop things getting inside

14. Privacy n) the study of the design of furniture or equipment and the way this affects people's ability to work effectively

15. To hack o) to need something, or to make something necessary

Computer and Information Systems Literacy

Task 1. Comprehension questions

1. Why will an understanding of information systems help you to cope, adapt and prosper in the challenging environment?
   2. Why is the Internet one of the means for advancing the knowledge of information systems and other professional study?
   3. What are advantages and disadvantages of online degree programs?
   4. What is computer literacy?
   5. What is information systems literacy?

Task 2. Say whether the sentences below the text are true or false

1. Information systems literacy goes beyond a knowledge of the fundamentals of computer systems and equipment.
2. All people believe that online programs foster motivation and determination in working professionals.
3. Computer literacy stresses equipment and devices, programs and instructions, databases and telecommunications.
4. Knowing how to deploy transaction processing, management information, decision support and special-purpose systems to help an organization to achieve its goal is a key aspect of information systems literacy.
5. If you even know how to use information systems you can't adapt and prosper in the challenging world.
Task 3. Fill in the gaps with the appropriate words

To focus, advancing, applied, information systems literacy, prosper, hardware, online, goals, equipment, contribution.

1. The Internet is one means for ______ your knowledge of information systems and other professional study.
2. ______ is a knowledge of how data and information are used by individuals, groups and organizations.
3. Knowing about various types of ______ and software to increase profits, cut costs, improve productivity and increase customer satisfaction is an example of information systems literacy.
4. Information systems literacy can involve a knowledge of how organizations can use computers and information systems to achieve their ______.
5. A knowledge of information systems will help you to make a significant ______ on the job.
6. Computer literacy a knowledge of computer systems and______ and the ways they function.
7. ______degree programs are especially attractive to people with full-time jobs.
8. Whatever career path you take, an understanding of information systems will help you to cope, adapt and ______ in this challenging environment.
9. Most important, however, information systems literacy encompasses how and why this technology is ______ in business.
10. Increased mergers continued downsizing of corporations _____ on their core businesses and to improve efficiencies.

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

1. The ability to use computers effectively (p. 3).
2. To put something into use (p. 4).
3. To put a plan or system into operation (p. 3).
4. The large system of connected computers around the world which people use to communicate with each other (p. 2).
5. To include several different things (p. 4).
Task 5. Points for discussion
1. What is the design of an information system based on?
2. What are the benefits of an information system for businesses?
3. What are the benefits of a marketing information system?
4. What are the disadvantages of a marketing information system?
5. What are the negative impacts of information systems?

Task 6. Match the words with their definitions

Table 8

<table>
<thead>
<tr>
<th>Task</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Core</td>
<td>a) a large corporation formed by the merging of separate and diverse firms</td>
</tr>
<tr>
<td>2. To apply</td>
<td>b) bring or put into operation or practical use</td>
</tr>
<tr>
<td>3. Literacy</td>
<td>c) a particular way of thinking about or dealing with something</td>
</tr>
<tr>
<td>4. Conglomerate</td>
<td>d) to bring into effective action; utilize</td>
</tr>
<tr>
<td>5. To identify</td>
<td>e) a tiny ring of magnetic material used in a computer memory to store one bit of data, now superseded by semiconductor memories</td>
</tr>
<tr>
<td>6. An approach</td>
<td>f) the development of closer economic, cultural and political relations among all the countries of the world as a result of travel and communication becoming easy</td>
</tr>
<tr>
<td>7. Globalization</td>
<td>g) competence or knowledge in a specified area</td>
</tr>
<tr>
<td>8. To deploy</td>
<td>h) to encourage or promote the development of (something, typically something regarded as good)</td>
</tr>
<tr>
<td>9. To foster</td>
<td>i) to go or move something forward, or to develop or improve something</td>
</tr>
<tr>
<td>10. To advance</td>
<td>j) to recognize or distinguish smth</td>
</tr>
</tbody>
</table>

Unit 6. Programming languages

Task 1. Comprehension questions
1. What are programming languages?
2. What is the primary function of a programming language?
3. What is a program code?
4. What are the principals of programming languages?
5. What is the syntax of the language?
6. What kind of problems can be solved with the help of programming languages?
Task 2. Say whether the sentences below the text are true or false
1. Programming languages were developed to complicate some problems.
2. Each language also has its own set of rules, called the syntax of the language.
3. Program code is the set of instructions that signal the CPU to perform retrieval operations.
4. The primary function of a computer is to provide instructions to IS professionals so that they can perform a processing activity.
5. Writing a computer program in a programming language requires the programmer to follow a set of rules.

Task 3. Fill in the gaps with the appropriate words
Primary, symbols, statements, the CPU, decoded, coding schemes, contain, programming languages, translating, instruction.

1. The research involved the use of _______ source materials in national and local archives.
2. Programming languages are sets of keywords, symbols, and a system of rules for constructing ______ by which humans can communicate instructions to be executed by a computer.
3. Both Oss and application software are written in ______ called programming languages.
4. Programming languages _____ different attributes.
5. A line of code typically contains a single ______
6. Programming involves ______ what a user want to accomplish into a code.
7. IS professionals work with ______.
8. Instructions are then _____ during the instruction phase of the machine code.
9. The language syntax dictates how the symbols should be combined into statements capable of conveying meaningful instructions to ____.
10. Each programming language uses a set of _____ that have special meaning.

Task 4. Match the words from the text with the definitions given below
1. A computer programming language consisting of binary or hexadecimal instructions which a computer can respond to directly.
2. An element, feature, or factor that is liable to vary or change.
3. A mark or character used as a conventional representation of an object, function, or process.
4. A complete and closed path around which a circulating electric current can flow.
5. To achieve or complete successfully.

**Task 5. Points for discussion**
1. What is needed to write a computer program?
2. What kind of applications are there to drive the design of a language?
3. Do you know the first programming language?
4. Why is computer programming becoming more important?
5. How does computer programming affect business?

**Task 6. Match the words with their definitions**

| 1. Application | a) a series of instructions written in a form that a computer can read and understand |
| 2. Machine code | b) to succeed in doing something, especially something that you have been trying to do for a period of time |
| 3. To communicate | c) a set of rules associated with a programming language |
| 4. Syntax | d) a very severe or serious measure |
| 5. To accomplish | e) software used for writing documents, creating charts, building databases etc. that is not part of the computer's operating system |
| 6. Extreme | f) to impart or pass on (information, news or ideas) |

**The Evolution of Programming Languages**

**Task 1. Comprehension questions**
1. How does a compiler work?
2. What is the primary advantage of an object?
3. How programmers can write programs for specific application problems more quickly?
4. What was the first visual programming language?
5. How many object-oriented programming languages are there?
Task 2. Say whether the sentences below the text are true or false

1. Third generation languages are easier to develop and use than machine and assembly languages.
2. With the third generation and higher level programming languages, each statement in the language translates into several instructions in machine language.
3. The worst examples of fourth generation programming languages include PowerBuilder, Delphi, Essbase, Forte, Focus, Powerhouse, SAS and many others.
4. Visual languages use a graphical or visual interface for program development.
5. Fifth generation languages are sometimes called artificial languages.

Task 3. Fill in the gaps with the appropriate words

Batch processing system, modified, to overcome, prefabricated, reusable, utility programs, an interpreter, an object, expert system application, database queries.

1. Some old languages, such as COBOL, have been______to support object-oriented approach.
2. Building programs and applications using object-oriented programming languages is like constructing a building using______modules or parts.
3. One of the primary advantages of an object is that it contains______code.
4.______consists of data and the actions that can be performed on the data.
5. Programming languages used to create artificial intelligence or______are often called fifth-generation languages (5GLs).
6. Another popular fourth-generation language is called Structured Query Language (SQL), which is often used to perform______and manipulations.
7. Another approach is to use______which is a language translator that converts each statement in a programming language, into machine language and execute the statement, one at a time.
8. Systems software programs such as Oss and_____ are often written in an assembly language.
9. Developers of programming languages attempted to ______ some of the difficulties inherent in machine language.

10. Extreme 1 supports programming of ______ with data collected into a set and processed at one time.

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

1. A set of words and rules for writing computer programs (p. 1).
2. A program for carrying out a routine function (p. 3).
3. A computer program that changes a set of instructions in a programming language into a form that can be used directly by a computer (p. 5).
4. The use of computer technology to make computers and other machines think and do things the way that people can (p. 7).
5. To change something slightly, especially in order to improve it or to make it less extreme (p. 12).

**Task 5. Points for discussion**

1. What is the difference between machine, assembly and high-level languages?
2. What is the structure of programming languages?
3. List current programming language models.
4. What programming languages are you familiar with?
5. Which programming languages do you use?

**Task 6. Match the words with their definitions**

<table>
<thead>
<tr>
<th>1. Machine language</th>
<th>a) A language that allows a user to select records from a database</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Alphanumeric</td>
<td>b) Using letters and numbers</td>
</tr>
<tr>
<td>3. Assembly language</td>
<td>c) A language that has been developed naturally in use (as contrasted with an artificial language or computer code)</td>
</tr>
<tr>
<td>4. High-level languages</td>
<td>d) To be similar to someone or something</td>
</tr>
<tr>
<td>5. Database language</td>
<td>e) These are languages designed to reflect the needs of the programmer rather than the capabilities of the computer. They use abstract data and control structures, and symbolic names for variables</td>
</tr>
<tr>
<td>6. Natural language</td>
<td>f) To get rid of something that you no longer want or need</td>
</tr>
<tr>
<td>7. To resemble</td>
<td>g) A series of instructions written in a form that a computer can read and understand</td>
</tr>
<tr>
<td>8. To discard</td>
<td>h) A low-level symbolic code converted by an assembler</td>
</tr>
</tbody>
</table>
Selecting a Programming Language

Task 1. Comprehension questions
1. Why is it important to balance the functional characteristics of the language?
2. What do machine and assembly languages provide?
3. What is one of the most important factors in selecting any programming language?
4. Why are recent programming languages simpler than earlier ones?
5. How much time is needed to develop computer programs using high-level languages?

Task 2. Say whether the sentences below the text are true or false
1. C++ and Java have only disadvantages.
2. Java is also more portable – with the ability to run on more Oss and hardware.
3. C++ will never disappear.
4. More recent programming languages are typically easier than earlier programming languages.
5. It takes less time to develop computer programs using high-level languages than with low-level languages.

Task 3. Fill in the gaps with the appropriate words
Direct control, debugging, routines, to maximize, programming, higher-level, the cost, up-front costs, balancing, vendor.

1. Programmers who learn C++ must spend a lot of time _____ rather than learning software engineering techniques.
2. Each command can drive complex _____ and functions that operate behind the scene.
3. Using _____ languages can reduce the total costs to develop computer programs in the long run.
4. _____ to develop computer programs can be substantially less with this more recent programming languages.
5. Selecting the best programming language involves _____ the functional characteristics of the language.
6. Many _____ of popular application software programs take the time and effort to code portions of their leading programs in assembly language.
7. Although training programmers to use these high-level programming languages may produce high______.
8. Java may be the future of______.
9. Many computer programming companies code portions of their popular programs in assembly language ____ their speed.
10. The amount of _____ that is needed over the operation of the hardware can be an important factor to consider.

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

1. Having a special activity, purpose, or task; relating to the way in which something works or operates (p. 1).
2. A person or company offering something for sale (p. 2).
3. To identify and remove errors from (computer hardware or software) (p. 4).
4. Clearly visible or understood; obvious (p. 4).
5. A way of carrying out a particular task, esp. the execution or performance of an artistic work or a scientific procedure (p. 4).

**Task 5. Points for discussion**

1. Characterize low-level and high-level programming languages.
2. What is an object?
3. What is the difference between C & C++?
4. What programming languages will you learn?
5. Why may the training of programmers to use high-level languages produce high up-front costs?

**Task 6. Match the words with their definitions**

<table>
<thead>
<tr>
<th>Task</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Command</td>
<td>a) to make all the things of a particular type have the same features or level of quality</td>
</tr>
<tr>
<td>2. To code</td>
<td>b) achieving good results</td>
</tr>
<tr>
<td>3. Standardization</td>
<td>c) to make something as large as possible</td>
</tr>
<tr>
<td>4. Productive</td>
<td>d) to convert (the words of a message) into a particular code in order to convey a secret meaning</td>
</tr>
<tr>
<td>5. To debug</td>
<td>e) the way that something such as a system or service operates</td>
</tr>
<tr>
<td>6. To maximize</td>
<td>f) to need for a particular purpose; depend on for success or survival</td>
</tr>
<tr>
<td>7. Operation</td>
<td>g) to look for and remove mistakes from a computer program so that it works correctly</td>
</tr>
<tr>
<td>8. To require</td>
<td>h) an instruction or signal that causes a computer to perform one of its basic functions</td>
</tr>
</tbody>
</table>
Unit 7. Information systems in the global economy.  
Jones Lang LaSalle, United States

Why learn about software?

Task 1. Comprehension questions
1. Can software affect the success of any business?
2. Why is application software the key to helping business to achieve the goals?
3. How is software used nowadays by sales representatives, stock and bond traders, scientists and others?
4. What criteria are important for companies when choosing software?
5. What does the term "best practice" refer to?

Task 2. Say whether the sentences below the text are true or false
1. The company has built a significant absence in the Asia Pacific region over the past 45 years.
2. Disjoined systems usually lead to disjoined business practices.
3. Software has had a profound impact on individuals and companies.
4. Advances in hardware technology have dramatically increased hardware costs.
5. Jones Lang LaSalle was not looking for an enterprise technology provider that understood their business environment.

Task 3. Fill in the gaps with the appropriate words
Best practices, survival, to advance, capitalized on, marketed, to deploy, core, stood out, set out, to streamline.

1. Software can make the difference between profits and losses, _____ and bankruptcy.
2. You most likely will use software to help you to _____ in your career and earn higher wages.
3. Jones Lang LaSalle continuous to ____ MRI Real Estate Solutions throughout its Asia Pacific operations.
4. Today’s software is at the _____ of those processes, defining best practices and leading companies to success.
5. Wong _____ to standardize the way each business unit operated.
6. The MRI software is designed to _____ business operations.
7. MRI _____ from other solutions providers.
8. Most software packages _____ to real estate and property-management companies are generic packages.

9. Jones Lang LaSalle _____ on the best practices built into MRI Real Estate Solutions to reengineer its Asia Pacific operations.

10. The term _____ refers to information management practices that have been confirmed to achieve the best results within an industry.

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

1. To intensify, increase, or further improve the quality, value, or extent of (p. 3).

2. A person or thing that provides something (p. 4).

3. To be clearly better or more significant than someone or something (p. 4).

4. To base one's hopes or confidence on (p. 7).

5. To improve or enhance the quality or value of (p. 7).

Task 5. Points for discussion

1. How do companies such as Jones Lang LaSalle acquire software?
2. What options are available and what considerations affect software purchasing decisions?
3. Why didn't Jones Lang LaSalle develop the software itself?
4. What benefits and drawbacks are involved in purchasing software as opposed to developing your own?
5. Why are systems and application software useful in education?

Task 6. Match the words with their definitions

Table 12

| 1. Property | a) to advertise or promote (something) |
| 2. A general ledger | b) to profit from; to take advantage of |
| 3. Real estate | c) a building or buildings and the land belonging to it or them |
| 4. To market | d) possession of land or property as a tenant |
| 5. To capitalize on | e) to disapprove of and attempt to prevent, esp. by argument |
| 6. Tenancy | f) a book or other collection of financial accounts of a particular type |
| 7. Vital | g) absolutely necessary or important; essential |
| 8. To oppose | h) the business of selling real property, esp. in the capacity of an agent to either the buyer or the seller |
Unit 8. An Overview of Software

Task 1. Comprehension questions
1. What are two basic types of software?
2. What does every organization rely on and support according to the text?
3. How can one classify the many potential uses of information systems (ISs)?
4. What is personal productivity software? Give examples of such applications.
5. What is a workgroup? What kinds can it be?

Task 2. Decide if the statements are true or false
1. Computer programs are sequences of instructions for the computer.
2. Computer system platform is the combination of particular hardware configuration and systems software package.
3. Microsoft Corp. was the first to develop sophisticated photo-processing software.
4. ISs that operate out of the personal sphere of influence serve the needs of an individual user.
5. One of the results of processing transaction data is that the records of the company are never updated.

Task 3. Fill in the gaps with the appropriate words
*Application, system software, hardware, digital, firmware, operations, platform, computer system, sequence, software.*

1. Programs are an ordered ______ of instructions for changing the state of the computer in a particular sequence.
2. ______ software usually runs on an underlying software operating systems such as Linux or Microsoft Windows.
3. In computer science and software engineering, software is all information processed by_______, programs and data.
4. Practical computer systems divide software systems into three major classes:_______, programming software and application software, although the distinction is arbitrary, and often blurred.
5. Program software performs the function of the program it implements, either by directly providing instructions to the _______ electronics or by serving as input to another piece of software.

6. As more and more programs enter the realm of firmware, and the hardware itself becomes smaller, cheaper and faster as predicted by Moore's law, elements of computing first considered to be software, join the ranks of _______.

7. Software (or _______) is also used in video games and for the configurable parts of the logic systems of automobiles, televisions, and other consumer electronics.

8. People who use modern general purpose computers usually see three layers of software performing a variety of tasks: _______, application, and user software.

9. Computations include simple _______ such as incrementing the value of a variable data element.

10. The software's license gives the user the right to use the _______ in the licensed environment.

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

1. The hardware within a computer system or smartphone which carries out the instructions of a computer program by performing the basic arithmetical, logical, and input/output operations of the system (2).

2. The study of complementary networks of hardware and software that people and organizations use to collect, filter, process, create, and distribute data (4).

3. It uses an array of electronic photodetectors to capture the image focused by the lens, as opposed to an exposure on photographic film (4).

4. An interactive computer application program for organization and analysis of information in tabular form (5).

5. An individual or institution (including a corporation) that legally owns a share of stock in a public or private corporation (7).

Task 5. Points for discussion

1. What is systems software? What is it made for? What are its functions?
2. What does application software consist of? What is it aimed at?
3. How do PC companies support individual, group and organizational goals? Give examples.

4. What is special about the ISs that operate within the personal sphere of influence?

5. What is the difference between the operation of ISs in personal and enterprise spheres of influence?

**Task 6. Match the words with their definitions**

2. Software package.
3. Supplier.
5. Freight bill.
6. Invoice.
7. Check.
8. Payroll.
9. Inventory:
   a) a piece of application software or utility software;
   b) carrier's invoice for freight charges applicable to a shipment;
   c) an economic event that initiates the accounting process of recording it in a company's accounting system;
   d) demand draft drawn on a bank against its maker's (drawer's) funds, to pay the stated amount of money to the bearer or named party, on presentment (demand) on a stated date or after;
   e) a technical communication document intended to give assistance to people using a particular system;
   f) demand draft drawn on a bank against its maker's (drawer's) funds, to pay the stated amount of money to the bearer or named party, on presentment (demand) on a stated date or after;
   g) a party that supplies goods or services;
   h) an itemized catalog or list of tangible goods or property, or the intangible attributes or qualities;
   i) it identifies both the trading parties and lists, describes, and quantifies the items sold, shows the date of shipment and mode of transport, prices and discounts (if any), and delivery and payment terms.
Developing Web Content

Task 1. Comprehension questions
1. Where can Java be used?
2. What is a Java applet?
3. Why is PHP so popular among Web developers?
4. Why do companies use push technology?
5. What are the disadvantages of push technology?

Task 2. State whether these sentences are true (T) or false (F)
1. Java software can run on any type of computer as well as many other programs.
2. Java community is getting bigger very day.
3. The Internet helps small companies increase their profits.
4. Push technology helps users look for information with their browsers.
5. Web hosting services provide space on their Web site to those who do not have money to have a site of their own.

Task 3. Fill in the gaps with the appropriate words
Database, content, data input, applets, word processor, hosts, compiler, push technology, overload, web templates.

1. The name ________ is primarily used for programs that translate source code from a high-level programming language to a lower level language.
2. ________ management system is essential to all areas of business and it must be carefully managed.
3. Information ________ is a creature that has been growing on the Internet's back since its beginnings.
4. A web ________ management system is used to control a dynamic collection of web material, including HTML documents, images, and other forms of media.
5. Web ________ are companies that provide space on a server owned or leased for use by clients, as well as providing Internet connectivity, typically in a data center.
6. A _______ enables you to create a document, store it electronically on a disk, display it on a screen, modify it by entering commands and characters from the keyboard, and print it on a printer.

7. Webcasting uses so-called _____ in which the Web server "pushes" information to the user rather than waiting until the user specifically requests it.

8. _______ are used to provide interactive features to web applications that cannot be provided by HTML alone.

9. _______ can be used by any individual or organization to set up their website.

10. _______ is an encompassing term for any task that requires information to be entered into a computer in a variety of forms.

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

1. A person who sells something, esp. real property.
2. A device for converting one form of coded information to another.
3. A computer program that facilitates the deletion or insertion of data within information already stored in a computer.
4. To confer authority upon (someone to do something); empower.
5. To make something such as a business, organization etc. work more simply and effectively.

Task 5. Points for discussion

1. The impact of Java on the software industry.
2. Advantages of selling over the Internet.
3. The essence of push technology.
4. Stages of creating a Web page.
5. Products, simplifying maintenance of Web content.

Task 6. Match the words with their definitions:

| Table 13 |
|------------------|----------------------------------------------------------|
| 1. To execute    | a) to encourage, assist, or improve; to cause to rise     |
| 2. To dispatch   | b) to obtain or retrieve (information) from a storage device |
| 3. To customize  | c) to send off promptly, as to a destination or to perform a task |
| 4. To boost      | d) to carry out; complete; perform; do                     |
| 5. To access     | e) to modify (something) according to a customer's individual requirements |
Unit 10. Internet and web applications

Task 1. Comprehension questions:
1. What is E-mail? What information should you obtain in order to send E-mail?
2. What has E-mail changed? In which way?
3. What is instant messaging? What does instant messaging service use?
4. How can cell phone connection with the Internet be useful for people?
5. Does the Internet help us in looking for job? How does it help?

Task 2. Say whether the statements below are true or false
1. E-mail is limited to simple text messages.
2. E-mail has changed the way people communicate.
3. One person can have only one e-mail address.
4. Chat room enables you to send texts and images to others.
5. Only computers can be connected to the Internet.
6. The Internet can help us to find much important information concerning job seeking.
7. Telnet is very useful for using large databases.
8. Companies use FTP to transfer vast amount of business transactional data to the computers of its customers and supplies.
9. Blogs can be used only by particular people or organizations.
10. Web Log and Blog differ in the type of information which can be placed there.

Task 3. Fill in the gaps with the appropriate words
Server, wireless, transmission, recipient, blogs, video chat, growth, cell phones, employment, protocol.

1. Electronic mail, commonly referred to as email or e-mail, is a method of exchanging digital messages from an author to a _______.
2. Neither the users nor their computers are required to be online simultaneously; they need connect only briefly, typically to an email _______, for as long as it takes to send or receive messages.
3. Instant messaging (IM) is a form of communication over the Internet, which offers quick _______ of text-based messages from sender to receiver.
4. More advanced instant messaging allows enhanced modes of communication, such as live voice or video calling, _______ and inclusion of hyperlinks to media.
5. Some _______ can be connected to the Internet to allow people to search for information, buy products, and chat with friends.
6. A mobile Internet device (MID) is a multimedia-capable mobile device providing _______ Internet access.
7. Finding employment opportunities has never been easier than now-with the consistent and constant _______ of the Internet.
8. One of the most amazing things about finding _______ on the Internet is that job seekers can sign up a membership account.
9. Telnet is a network _______ used on the Internet or local area networks to provide a bidirectional interactive text-oriented communication facility using a virtual terminal connection.
10. Many _______ provide commentary on a particular subject; others function as more personal online diaries; others function more as online brand advertising of a particular individual or company.

Task 4. Match the words from the text with the definitions given below
1. Computer machinery and equipment, as opposed to the programs that make computers work (1, "E-mail and Instant Messaging").
2. The sets of programs that tell a computer how to do a particular job (1, "E-mail and Instant Messaging").
3. A machine or tool that does a special job (1, "Internet Cell Phone and Handheld Computers").
4. A thing, place, activity etc. that you get something from (1, "Career Information and Job Searching").
5. To put a message or computer document on the Internet so that other people can see it ("Web Log").

Task 5. Points for discussion
1. Do you use E-Mail? What are advantages and disadvantages of using it?
2. Do not you think communication through the Internet remote people from each other? Explain your point of view.
3. Do you often use abbreviations while writing messages? What are the most popular abbreviations you use? Why do you use them?
4. Have you ever looked for job? Do you think the Internet is a good source of searching for a job? Why do you think so?
5. Do you or your friend have a blog? What information can be found there?
Task 6. Match the words with their definitions

<table>
<thead>
<tr>
<th>1. Usenet and newgroups</th>
<th>a) lets people bid on products and services</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Web auction</td>
<td>b) enables users to log on to other computers on the Internet to gain access to public files</td>
</tr>
<tr>
<td>3. Chat room</td>
<td>c) a way of connecting two computer NETWORKS</td>
</tr>
<tr>
<td>4. Telnet</td>
<td>d) enables two or more people to have a text conversation in real time</td>
</tr>
<tr>
<td>5. Gateway</td>
<td>e) allows on-line discussion groups that focus on a particular topic</td>
</tr>
</tbody>
</table>

Table 14

Unit 11. Internet and Web Applications

Task 1. Comprehension questions

1. What is Usenet like?
2. What does Usenet use to provide a centralized news service?
3. How can the user read messages?
4. What is newsgroups structure?
5. Newsgroups are only moderated, aren't they?
6. Who creates a message thread?
7. What is the side effect of too active participation in the discussions?
8. Can most people afford to use Internet phone service?
9. What changes have traditional long-distance providers faced with?
10. What is especially interesting about VoIP?

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

1. It is actually a protocol that describes how groups of messages can be stored on and sent between computers.
2. The user can’t log on to the server to read the message.
3. Discussions take place via the Internet phone which is sent to the newsgroup's address.
4. Gateways installed at one end of the communication link convert voice to IP packets and back.
5. When the packets hit the destination gateway, the message is depacketized, converted back into voice, and sent out via local phone lines.
Task 3. Fill in the gaps with the appropriate words
Message thread, log on, moderate, chat room, inexpensive. depacketized, gateway ,videoconferencing, Webinars, type.

1. The user can then ______ to the server to read the messages.
2. A newsgroup may be ______ or unmoderated.
3. Each group takes the form of a large bulletin board where members post and reply to messages, creating what is called a ________.
4. A ______ is a facility that enables two or more people to engage in interactive conversations” over the Internet.
5. Internet Relay Chat requires participants to ______ their conversations rather than speak.
6. Internet phone service is relatively _____ and can make sense for international calls.
7. Most corporate IP telephony applications use ______ to convert calls into IP packets.
8. When the packets hit the destination gateway, the message is________
9. Internet ______, which supports both voice and visual communications, is another important Internet application.
10. These Internet presentations are also called Webcasts or ____.

Task 4. Find the words according to the given definitions
Usenet, hierarchy, server, newsgroup, VoIP, IP.

1. A part of a computer network which does a particular task.
2. A technology for making telephone calls over the Internet.
3. The method by which information is sent between any two Internet computers.
4. An early non-centralized computer network for the discussion of particular topics.
5. A forum on the Internet service for the discussion of a particular topic.
6. A system or organization in which people or groups are ranked one above the other.

Task 5. Points for discussion
1. A newsgroup must be only moderated.
2. What should be undertaken to avoid rambling and unfocused discussions?
3. Why do traditional long-distance providers have to revise their rates?
4. What can the market be boosted?
5. What is your attitude towards Webcasts and Webinars?

Task 6. Match the words with their definitions

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Webinar</td>
<td>a) to help or encourage to increase or improve</td>
</tr>
<tr>
<td>2. Playback messages</td>
<td>b) a site on the Internet where people can exchange</td>
</tr>
<tr>
<td>3. Webcast</td>
<td>c) a seminar conducted over the Internet</td>
</tr>
<tr>
<td>4. Chat room Internet</td>
<td>d) a video broadcast of an event transmitted across the</td>
</tr>
<tr>
<td>5. Boost</td>
<td>e) the reproduction of previously recorded sounds</td>
</tr>
</tbody>
</table>

Unit 12. Shopping on the Web. Web Auctions

Task 1. Comprehension questions
1. What is a good news for well-established and popular Internet sites?
2. What conveniences do many Web sites offer to their customers?
3. What is a bot?
4. What is an auction?
5. Can there be any problem with the use of Web auction sites?

Task 2. Say whether the statements below are true or false
1. It can be convenient and easy to do shopping on the Web for books, clothes, cars, medications, and even medical advice.
2. The Wall Street Journal of September 23, 2003 shows the number of unique visitors to several Internet shopping sites.
3. Robot is a full form for bot.
4. Web auction are not transforming the customer-supplier relationship.
5. The use of Web auction sites is not expected to continue to grow rapidly because of some potential problems.

Task 3. Fill in the gaps with the appropriate words

Internet auction sites, fraudulent, retuned items, legitimate, fee, loyal, bots, loyalty points, illegal, investigation.

1. Some Internet shoppers are _______ to a few familiar Internet sites.
2. Many Web sites offer free shipping and free pickup for _______ that don't fit or don't meet customer's needs.
3. People are using ______ to help them search for information or shop on the Internet.

4. __________ excel at offering unique and hard-to-find items.

5. Companies, such as Auction Drop, will sell the items on eBay for a _____.

6. eBay is also allowing shoppers to use some of their _____ from Hilton Hotels and Sprint to buy one of its 16 million items listed on its Internet sites.

7. Auction sites on the Web are not always able to determine whether product and services listed by people and companies are _______.

8. Some Web sites have bad ______ or questionable items offered.

9. Many Web sites have an aggressive fraud _____ system.

10. Many sites help prosecute _____ use of their sites.

Task 4. Find the words according to the given definitions
1. A place where something was, is or is to be usually on the Internet.

2. The quality of being convenient or suitable; freedom from difficulty or worry.

3. A software tool that searches the Web for information, products, prices, features and so forth from multiple Web sites.

4. An Internet site that matches people and companies who want to sell products and services with people and companies who want to purchase these products and services.

5. A place where businesses are growing their markets or reaching customers in a very low cost-per-transaction basis.

Task 5. Points for discussion
1. Are you an Internet shopper? Is it really convenient and easy to do shopping on the Web?

2. People are increasing using bots nowadays. Why? What are their purposes? How often do you use bots?

3. What are the purposes of Web auction?

4. Have you ever used any Web auction sites? What Web auction sites do you know? What are their advantages and drawbacks?

5. Although auction Web sites are excellent for matching buyers and sellers and rather convenient for customers, there can be some problems with their use. What are they?
Task 6. Match up the words with their definitions

<table>
<thead>
<tr>
<th>Item</th>
<th>a) charge or payment for professional advice or service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auction</td>
<td>b) putting to a special or practical use</td>
</tr>
<tr>
<td>Buyers</td>
<td>c) not legal, not authorized or not required by the law</td>
</tr>
<tr>
<td>Sellers</td>
<td>d) criminal deception</td>
</tr>
<tr>
<td>Shoppers</td>
<td>e) single article or a product unit available for consumption</td>
</tr>
<tr>
<td>Customers</td>
<td>f) people who do shopping</td>
</tr>
<tr>
<td>Application</td>
<td>g) people who want to sell product and services</td>
</tr>
<tr>
<td>Fee</td>
<td>h) people who want to buy product and services</td>
</tr>
<tr>
<td>Illegal</td>
<td>i) public sale at which goods are sold to the person making a highest offer</td>
</tr>
<tr>
<td>Fraud</td>
<td>j) people who buy things, esp. those who give their regular support to a tradesman</td>
</tr>
</tbody>
</table>

Office on the Web. Internet Sites in Three Dimensions

Task 1. Comprehension questions
1. What helps to make it possible to download music from the Internet and listen to it anywhere you want?
2. What does the Recording Industry Association of America (RIAA) do to prevent the companies and individuals from downloading music illegally?
3. What way have some corporations started to use Internet video to?
4. How can office on the Web be used?
5. What are three-dimensional views of places and products used for?

Task 2. Say whether the statements below are true or false
1. Audio and video programs can be played on the Internet? But files cannot be downloaded for later use.
2. Companies and individuals are usually prevented from allowing free copies of music to be shared over the Internet.
3. Unfortunately, doctors cannot use Internet video to monitor and even consult surgical operations that take place thousands of miles away from them.
4. From home offices, coworkers can connect to the workplace via a virtual office on the Web.

5. Without a doubt, a 3-D Internet sites are becoming common for advertising products.

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

*Radio broadcasts, telecommuting, teleconferencing, simulating, invaluable, available, streaming audio, music downloads, office assistant, Internet video.*

1. The internet makes it possible to listen to ________
2. Users can select a music genre and hear________.
3. Nowadays a number of companies offer _________ for minimal fees usually under a dollar per song.
4. Using ________, it is possible to receive TV programs from a Internet site.
5. Internet video is also being used successfully for ________, which can connect employees, managers, and corporate executives around the world in private conversations.
6. Employers are also offering employers the option of ______ to their jobs.
7. For individuals and employees who travel, special Internet sites, which allow them to connect to an office or home PC using the Internet, are ________.
8. You can also hire an ________ on the Web.
9. Radio broadcasts are now ________ on the Internet.
10. A 3-D Internet auto showroom allows people to get different views of a car, ________ the experience of walking around in a real auto showroom.

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

1. The process of sending out video, music, etc. in all directions, especially radio or TV.
2. Video that is used on the Internet to broadcast corporate messages or to advertise on the Web.
3. A Web site that contains files, phone numbers, e-mail addresses, an appointment calendar and more.
4. A virtual assistant who can be used to do accounting tasks, help market products, or buy gifts for family and friends.

5. Web sites that allow people to get views of places and product in three-dimensions.

**Task 5. Points for discussion**

1. What hot growth areas are on the Internet nowadays? Why?
2. How often do you use music, radio sites on the Internet? What do you need for it?
3. What are the purposes and possibilities of Internet for music, radio and video industries? Are there any problems?
4. What problems can you solve if you set up an Internet office? Could you mark out advantages and disadvantages of it?
5. Some Web sites offer three-dimensional views of places and products. With a doubt, 3-D Internet sites will become common in the future. Are you of the same opinion? Explain your ideas.

**Task 6. Match up the words with their definitions:**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) a hall or a place for displaying articles of products</td>
<td>b) things owned by a person or company; possessions</td>
<td>c) charge or payment for a professional advice or services</td>
<td>d) instrument, tools, or a apparatus for a special purposes</td>
<td>e) a device for downloading audio files for later listening</td>
<td>f) case in law court</td>
<td>g) systematic applications of knowledge to practical tasks in industry</td>
<td>h) a music format</td>
<td>i) arrangement to meet</td>
<td>j) something thought out, invented or adapted, for a special purpose</td>
</tr>
</tbody>
</table>


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

Укладачі: Бабій Юлія Миколаївна  
Стебльова Карина Карапєтівна  
Полежаєва Олена Вікторівна

Відповідальний за випуск Борова Т. А.

Редактор Овчаренко Н. М.

Коректор Маркова Т. А.