МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
Національний університет кораблебудування
імені адмірала Макарова

Т. П. ЗАДОРОЖНА, О. Б. ДАВИДЕНКО

AN INTRODUCTION TO INFORMATION AND COMMUNICATION TECHNOLOGIES

Методичні вказівки з англійської мови
для студентів I–II курсу
спеціальності 172 "Телекомунікації та радіотехніка"

Рекомендовано Методичною радою НУК

ВИДАВНИЦТВО
НАЦІОНАЛЬНОГО УНІВЕРСИТЕТУ
КОРАБЛЕБУДУВАННЯ
ІМ. АДМІРАЛА МАКАРОВА

2020

УДК 621:811.111(076)
З-15

Автори: Т. П. Задорожна, старш. викл. каф. сучасних мов;
О. Б. Давиденко, викл. каф. сучасних мов

Рецензент Н. М. Філіппова, канд. філол. наук, професор НУК

Рекомендовано Методичною радою НУК

Задорожна Т. П.

З-15 An introduction to information and communication technologies : методичні вказівки з англійської мови для студентів I–II курсу спеціальності 172 "Телекомунікації та радіотехніка" / Т. П. Задорожна, О. Б. Давиденко. – Миколаїв : НУК, 2020. – 64 с.

Основною метою методичних вказівок є збагачення активного словникового запасу студентів за фахом та його реалізація у мовленнєвому акті, вміння читати та розуміти оригінальні тексти та застосовувати набуті теоретичні навички і вміння на практиці.

Матеріал складається з трьох розділів: Learning Assignments, Supplementary Reading, Appendix. Перший розділ (Learning Assignments) складається з шістьох окремих уроків, що містять базові тексти, лексико-граматичні та комунікаційні вправи. У другому розділі (Supplementary Reading) наведені тексти для додаткового читання з метою поширення лексичного запасу. Третій розділ містить оригінальні тестові завдання для здійснення перевірки та систематизації лексичного та граматичного матеріалу.

УДК 621:811.111(076)

ПЕРЕДМОВА

Запропоновані методичні вказівки є систематичною добіркою англомовних текстів та завдань до них для набуття студентами професійних знань, вмінь та навичок за професійною тематикою. Основною метою є збагачення активного словникового запасу студентів за фахом та його реалізація у мовленнєвому акті, вміння читати та розуміти оригінальні тексти та застосовувати набуті теоретичні навички і вміння на практиці. Матеріал складається з трьох розділів: Learning Assignments, Supplementary Reading, Appendix.

Тексти кожного уроку є базовими і підлягають ретельній обробці та аналізу для вивчення тих граматичних і лексичних явищ, що розглядаються на уроці. Кожен урок-тема має чітку послідовну структуру, яка складається з наступних розділів: **Tuning-in, Reading, Post-reading tasks, Check your grammar, Discussion points** або **Writing tasks**.

Для практичного використання набутих знань студентам потрібно володіти умінням самостійно працювати над мовою. Тому автори виявили необхідним запрпонувати тексти для додаткового читання, які представлені у розділі Supplementary reading. Для перевірки та систематизації лексичного та граматичного матеріалу була запропонована система тестових завдань для здійснення підсумкового контролю.

Запропоновані методичні вказівки можуть бути рекомендовані для студентів I–II курсу спеціальності "Телекомунікації та радіотехніка" всіх форм навчання.

Кожен урок-тема охоплює наступні складові навчального процесу

- Робота з текстами уроків
- Опрацювання лексики уроків
- Опрацювання граматичного матеріалу
- Робота з розвитку усного мовлення
- Робота з розвитку писемного мовлення

Робота з текстами уроків

Основною метою роботи з базовими текстами кожного уроку, а також додатковими тематичними текстами є збагачення словникового запасу сучасною лексикою, більш глибоке ознайомлення з проблема-

тикою фахових питань та підготовка до мовленнєвих видів діяльності з теми, що вивчається. Обов'язковим є обговорення прочитаного тексту у групі, вміння відповісти на запропоновані запитання або скласти питання самостійно з проблематики тексту. Студентів необхідно заохочувати вільно висловлювати свої думки у непідготовленому мовленні.

Опрацювання лексичного матеріалу

Вивчення будь-якої іноземної мови – це перш за все оволодіння певним запасом слів цієї мови. Лексика – це той словесний матеріал, яким студенти повинні навчитися легко і швидко оперувати у процесі спілкування іноземною мовою. Засвоєння лексичного матеріалу є однією із найважливіших цілей кожного уроку-теми. Починаючи роботу над певним лексичним матеріалом кожного уроку слід дотримуватися наступної послідовності:

1) хорове повторення слів та словосполучень за викладачем;
2) запис необхідних для засвоєння словосполучень у словник;
3) хорове читання нових словосполучень із подальшим поясненням їх значень;
4) домашнє завдання: користуючись словником, перекласти слова та словосполучення, виписати їх з транскрипцією і перекладом у словнички та запам'ятати значення;
5) виконання письмових вправ на закріплення слів та словосполучень;
6) включення лексики у процес читання

Опрацювання граматичного матеріалу

Важливим компонентом кожного уроку запропонованих методичних вказівок є вивчення та практичне засвоєння основних граматичних явищ, що визначені програмою курсу, співвідношення їх форми та значення. До складу базових уроків увійшли наступні теми граматичного матеріалу:

- Personal pronouns
- Degrees of comparison
- Constructions of comparison and contrast
- Verb tenses in Active Voice
- Modal verbs
- Passive Voice
- The infinitive and –ing form

- Conditional Sentences

Під час опрацювання граматичного матеріалу студентам слід дотримуватися наступної послідовності:

- презентація граматичних явищ і створення орієнтовної основи для подальшого формування навику;
- формування мовних граматичних навиків шляхом їх автоматизації;
- включення мовних навиків у різні види мовленнєвої діяльності;
- розвиток мовних умінь.

Систему граматичних вправ, що запропонована у методичних вказівках, умовно можна поділити на дві групи:

- *мовні вправи*, що спрямовані на оволодіння граматичною формою і в яких у більшості випадків відсутні ознаки комунікативності (наприклад: поставте дієслово в потрібну форму, складіть речення з вказаних слів);
- *умовно-мовні вправи*, що імітують мовну комунікацію. Вправи, в яких має місце комунікативне, мотивоване, ситуативне, контекстне використовування матеріалу на знайомій лексиці, тобто задаються умови для використовування (наприклад: спростуйте вислів, поєднайте речення, вживаючи сполучники, щоб вийшла цікава розповідь).

Робота з розвитку писемного мовлення

Розвиток писемного мовлення представлено в методичних вказівках написанням Summary – короткої форми письмової вправи. Summary – являє собою короткий зміст основних ідей тексту. Складання цього невеликого переказу статті дає студенту можливість постійно поповнювати свій пасивний лексичний запас завдяки читанню статей і книг, що підлягають аналізу. Крім того, студент регулярно розширює свій активний лексичний запас завдяки використанню нових слів при складанні summary. З іншого боку, поліпшується вміння аналізувати, систематизувати, синтезувати і виділяти головне. При виконанні цього виду вправ студенту слід керуватися наступними вимогами:

- Намагайтесь точно і адекватно передати зміст тексту оригіналу.
- Ваша робота повинна бути короткою і містити тільки найважливішу інформацію.
- Уникайте повторень, докладних описів і прикладів.
- Головна думка початкового тексту повинна бути зрозумілою.

- Не допускається повне цитування тексту оригіналу.
- По можливості ваше summary має бути написано у теперішньому часі.
- Не слід використовувати особисті займенники, щоб уникнути неясності.
- Обсяг summary повинен становити не більше 1/3 або 1/4 оригіналу.
- У вашій роботі не повинно міститися пропозицій, які можна було б трактувати неоднозначно.
- Пряму мову потрібно переробляти в непряму.

PART I
LEARNING ASSIGNMENTS

Lesson 1. Telecommunications in our life

Tuning-in: Before reading the unit, consider the following statements and choose the endings that you think appropriate. Then scan the text to see if you were right.

1. For most people the electronic media are:
   a) education
   b) entertainment and information
   c) creative activity
2. The electronic media are:
   a) perfect
   b) very bad
   c) far from perfect
3. Most electronic media systems have the basis of:
   a) commercialism
   b) upbringing aims
   c) religion and ethics
4. Radio, TV, telephone are:
   a) good
   b) bad
   c) neither good nor bad
5. TV is:
   a) a means of communication
   b) a form of communion
   c) less a means of communication than a form of communion

Telecommunication is communication at a distance by technological means, particularly through electrical signals or electromagnetic waves. Due to the many different technologies involved, the word is often used in a plural form, as telecommunications. The word telecommunication was adapted from French. It is a compound of the Greek prefix tele- (τηλε-), meaning "distant", and the Latin communicare, meaning "to share".

Electrical and electromagnetic telecommunication technologies include telegraph, telephone, and teleprinter, networks, radio, microwave transmission, fiber optics, communications satellites and the Internet.

A basic telecommunication system consists of three primary units that are always present in some form:

- A transmitter that takes information and converts it to a signal.
- A transmission medium, also called the "physical channel" that carries the signal. An example of this is the "free space channel".
- A receiver that takes the signal from the channel and converts it back into usable information.

The electronic media are a major source of entertainment and information for most people. They act as a soothing relaxant, a warm companion, a regular babysitter, a friendly sage, a portage to a vicarious adventure, and a window to the outer world. Radio and TV answer simple questions such as whether or not to carry an umbrella, and they give us more complex information so we can better choose our country's leaders. They keep us up to date in times of disaster and keep us in touch with each other through periods of happiness, pain, and curiosity. Television has caused lunchrooms around many countries to buzz with talk of the films, shows and cartoons. It functions both as an appliance, and also as a means for social story telling and message dissemination. It is a cultural tool that provides a communal experience of receiving information and experiencing fantasy. It acts as a "window to the world" by bridging audiences from all over the world through programming of stories, triumphs, and tragedies that are outside of personal experiences.

And yet the electronic media are far from perfect. Detractors complain about the sensationalism of news and talk shows. Parents bemoan the violence of some programs and the wasted time that children (and adults) spend on video games and "surfing the net". The underlying commercialism of most electronic media systems brings about "buy, buy, buy" mentality. Favorite shows are cancelled – seemingly for no reason. To some, the electronic media appear to be run by greedy moguls devoid of ethics and unconcerned about the influence their actions have on the citizenry as a whole.

A transmitter broadcasting radio waves, a TV set sitting in the corner of the living room, a microphone picking up sound, a fiber optic delivering a phone signal – none of these is good or bad. They are at

the mercy of the people who use them, both those who are involved with them as a career and those who interact with them on a day-to-day personal basis.

Television is less a means of communication (the imparting of interchange of thoughts, opinions, and information by speech, writing, or signs) than it is a form of communion (act of sharing or holding in common; participation, association; fellowship).

Post-reading tasks

1. Vocabulary in context. Match the words with their definitions.

1	media	**a.**	characteristic attitude of mind
2	sage	**b.**	part of a radio apparatus
3	detractor	**c.**	motion by which radio, magnetism, etc. is spread or carried
4	mentality	**d.**	mass communications
5	influence	**e.**	power to effect smb's character, beliefs or actions
6	transmitter	**f.**	send out in all directions by radio or TV
7	broadcast	**g.**	participation, fellowship
8	wave	**h.**	wise man
9	fiber-glass	**i.**	material of optic fibers
10	communion	**j**	person who tries to make smb's reputation smaller

2. Answer the questions.

1) What is a major source of entertainment and information for most people?
2) How do the electronic media act?
3) Why do people think that electronic media are far from perfect?
4) What kind of mentality brings the commercialism of most electronic media?
5) What is the function of a transmitter?
6) What is the function of a receiver?
7) What is telecommunications?

3. Make phrases with these words: telegraph, telephone, networks, microwave, information, remote control.

Check your grammar

4. Put the verbs in brackets in the right tense form.

1) Electronic media … to develop in the 20th century. (start)
2) Electronic media … increasingly in recent years. (spread)
3) A transmitter … radio waves. (broadcast)
4) … a fiber optic … a phone signal or electric current? (deliver)
5) Stop talking! I … to listen to the radio. (try)
6) When I entered the room, my sister … on the phone. (speak)

5. Put the personal pronouns in the objective case.

1) Electronic media give … various kinds of information. (we)
2) We use … to find the necessary information. (they)
3) Can you show … the way to switch on this microphone? (I)
4) I came with … to the office to receive the instructions. (he)
5) My favorite TV show was cancelled, though there was no reason for … . (it)
6) My mother says that my favorite occupation is surfing the net. I agree with … . (she)

Discussion points

- Why do you watch TV, listen to the radio and surf the internet?
- Which telecommunication devices do you own? Which would you like to own?

Lesson 2. Landline phones: Basic principles of operation

Tuning-in: answer the questions then discuss in pairs:

1. Do you use a traditional landline telephone?
2. Are there any advantages and disadvantages comparing with mobile phone?
3. What is your prediction about the future of traditional landline telephones?

Read the text to find out general information about landline phones

Basic principles of operation

First patented in 1876 by Alexander Graham Bell and further developed by many others the telephone was the first device in history that enabled people to talk directly with each other across large distances. A telephone, or phone, is a telecommunications device that permits two or more users to conduct a conversation when they are not in the same vicinity of each other to be heard directly. A telephone converts sound, typically and most efficiently the human voice, into electronic signals suitable for transmission via cables or other transmission media over long distances, and replays such signals simultaneously in audible form to its user.

The essential elements of a telephone are a microphone (transmitter) to speak into and an earphone (receiver) which reproduces the voice of the distant person. In addition, most telephones contain a ringer which produces a sound to announce an incoming telephone call, and a dial used to enter a telephone number when initiating a call to another telephone. Until approximately the 1970s most telephones used a rotary dial, which was superseded by the modern DTMF push-button dial, first introduced by AT&T in 1963. The receiver and transmitter are usually built into a handset which is held up to the ear and mouth during conversation. The dial may be located either on the handset, or on a base unit to which the handset is connected. The transmitter converts the sound waves to electrical signals which are sent through the telephone network to the receiving phone. The receiving telephone converts the signals into audible sound in the receiver, or sometimes a loudspeaker. Telephones are a duplex communications medium, meaning they allow the people on both ends to talk simultaneously.

A traditional landline telephone system, also known as "plain old telephone service" (POTS), commonly carries both control and audio signals on the same twisted pair of insulated wires: the telephone line. The signaling equipment, or ringer, consists of a bell, beeper, light or other device to alert the user to incoming calls, and number buttons or a rotary dial to enter a telephone number for outgoing calls. Most of the expense of wire-line telephone service is the wires, so telephones transmit both the incoming and outgoing voice channels on a single pair of wires. A twisted pair line rejects electromagnetic interference (EMI) and crosstalk better than a single wire or an untwisted pair. The strong outgoing voice signal from the microphone does not overpower the weaker incoming speaker signal with a sidetone because a hybrid coil subtracts the microphone's signal from the signal sent to the local speaker. The junction box arrests lightning and adjusts the line's resistance to maximize the signal power for the line's length. Telephones have similar adjustments for inside line lengths. (The wire's voltages are negative compared to earth, to reduce galvanic corrosion. Negative voltage attracts positive metal ions toward the wires.

Post-reading tasks

1. Find out the answers to the questions below

1) What is a telephone?
2) What are the essential elements of telephones?
3) What is a transmitter?
4) What is a receiver?
5) Is there any difference between a rotary dial and a push-button dial?
6) Where are the electrical signals sent?
7) What is audible sound and where does it come from?

2. Are the following sentences true or false? Correct the false ones.

a) The signaling equipment, consists of an earphone which reproduces the voice of the distant person.
b) Telephones transmit both the incoming and outgoing voice channels on a single pair of wires because of the cost of wires.
c) A single wire rejects electromagnetic interference (EMI) and crosstalk worse than a twisted pair line.
d) The junction box arrests lightning and adjusts the line's resistance to minimize the signal power for the line's length.

e) Negative voltage doesn't attract positive metal ions toward the wires.
f) The wire's voltages are negative compared to earth.

3. Match the following terms with their definition

1	landline telephone	**a.**	a device that a user holds to the ear to hear the audio sound through the receiver
2	radio receiver	**b.**	is a component of telephone that implements a signaling technology in telecommunications known as pulse dialing. It is used when initiating a telephone call to transmit the destination telephone number to telephone exchange
3	transmitter	**c.**	a telephone that uses buttons or keys for dialing a telephone number to place a call to another telephone subscriber
4	handset	**d.**	a device which converts an electrical audio signal into a corresponding sound
5	rotary dial	**e.**	essentially a tiny microphone located in the mouthpiece of the telephone's handset. It converts the vibrations of the speaker's voice into variations in the direct current flowing through the set from the power source
6	push-button telephone	**f.**	an electronic device that receives radio waves and converts the information carried by them to a convenient form
7	loudspeaker	**g.**	a device that transmits signals converted from audio data through physical media, such as wire or fiber optic cable, rather than through wireless transmission as in the case with mobile phones

4. Complete this text about the main type of landlines using the following words and word combinations: *mobile service, landline subscribers, power outages, building's electrical system, a cordless landline, connected, corded landline, basic types*

There are two ____a____ of landlines. A ____b____ is one that connects to the provider's cabling through a wall jack. The phone base and the

receiver (or handset) are ____c____ by a cord. In ____d____ the phone base connects to the cabling through a jack but the handset is connected wirelessly. Cordless landlines must also be plugged into the ____e____, which means that – unlike corded landlines – they don't function in ____f____. An ongoing trend towards fixed-mobile substitution (FMS), in which users cancel landline services and rely solely upon cellular phone service, has resulted in a sharp reduction in the numbers of ____g____. The act of canceling a landline for ____h____ is also sometimes referred to as wireless substitution.

Check your grammar

5. Read the text again and underline all the examples of the passive. What tenses are they?

6. Complete these sentences with the passive form of the verbs in brackets.

a) Call centers (use) _____ to deal with telephone enquiries. b) In recent years, most mobile phones (equip)_____ with Bluetooth. c) Information (transmit) _____ by devices, such as the telephone, radio, TV and others. d) Sorry about the mess- the telephones (replace) _____ at the moment. e) In the near future, the Internet (access)_____ more frequently from PDAs and mobile phones than from desktop computers. f) Networks (can connect) _____ via satellite. g) New technologies (devise) _____ to allow you to watch TV on your mobile. h) In the next few years GPS chips (incorporate)_____ also _____ into most mobiles phones.

7. Choose the correct words (a-c) to complete these sentences.

1. A telephone is a telecommunications device that permits two or more users _____a conversation.
   a) conducting b) to conduct c) conduct
2. I'm not interested in _____ the history of telephone.
   a) learn b) to learn c) learning
3. He refuses _____ the project with me.
   a) do b) doing c) to do
4. The engineers wanted the employees not _____ the cables.
   a) touch b) to touch c) touching
5. They may not _____ to the conference.
   a) come b) coming c) to come

6. This program is too slow _____ the simulation.
   a) do b) to do c) doing
7. It's not easy _____ instructions for this device.
   a) write b) to write c) writing
8. Unfortunately computers can't _____ spoken English.
   a) understand b) to understand c) understanding

Writing

Read this note from your friend Sue and write to her a postcard. Answer the questions about a new landline phone.

Hi there!

I'm looking for a special landline telephone for my new apartment. I know you are so good at this field. So I would like to get your advice. Tell me what sort of telephone I should buy, what its specifications are, what advantages and disadvantages I should know about, if this sort of telephone can effect my health for example cause fatigue, and headache, emit radiation…?

Sue

Lesson 3. Cellular phone operation

Tuning in: answer the questions then discuss in pairs:

1. What types of telephones do you know?
2. Do you use a mobile phone? What do you use it for? Make a list.
3. Do you think mobiles can be very annoying for people around you? Make a list of certain rules you should follow not to annoy people.

Read the text about the main principles of cellular phone operation

The telephone has been used as a means of communication by industry and individuals for more than a century. Invented by Alexander Graham Bell in 1876 it predates the age of modern electronic media such as radio and TV. During the time the telephone business grew into a major national and international service, but it remained primarily a voice service connecting one individual with another. Improvements were made in switching systems and in ease of phone installation. With competition going full force the various phone companies began offering a new array of services. Some features such as the hold button and the provision for answering machines had been part of phone technology

for a while but the post divestiture period of the1980s saw a rise in many new features. Telephones now have redial, call waiting, conference calling, and phone number storage. Fax machines that send written pages over the phone lines have become commonplace, both at work and home. Voice-mail systems have replaced the company telephone operator. People wander throughout their homes talking on wireless portable phones. Airplanes have telephones so business people can call the office from 1κilometer up.

One of the most rapidly accepted services in the telephone business has been cellular phones or mobile telephones. The technology for cellular phones was developed by AT&T's and Bell Labs during the 1970s. A mobile telephone service had been available for years, but it involved relatively high-powered transmitters that covered a large area. Because of the high power, only a limited number of phones could operate in any particular area. With the advent of cellular phones, however, an almost unlimited number of mobile phone is possible. The system operates by dividing a particular geographic area into small parts called 'cells'. Low-powered transmitters and receivers serve each cell – so low powered, in fact, that several phones can share the same frequency in the same cell without causing interference. A person making a phone call from an automobile does so with a low-power transmitter whose signal is received at a central cell complex (or base station). This cell complex is tied by phone lines to the regular local and national phone system so the caller in the automobile can reach anywhere in the country. Similarly, the automobile caller can receive calls from anywhere in the country. The incoming call goes by phone lines to the central cell location and then goes from a low- power cell transmitter to a receiver in an automobile.

The limited area of a cell might appear to be a disadvantage for cellular technology, but the real beauty of it is that as traffic moves from one cell to another, the cellular system has the ability to hand off signals from one cell to the next. This is accomplished by a switching system that determines when an in-progress call is at too low a signal level and, therefore, switches it to a closer cell. A new form of portable wireless telephone the personal communication service is underway. This is a digital, low-power communications system that will allow people to carry lightweight wireless phones with them everywhere. These phones

will operate on lower-powered cells than those of cellular phones and will handle fax and data as well as voice communication.

As the telephone business grows and adds more complicated services the old analog switching systems and twisted pair copper wires are proving inadequate. New distribution systems that can handle more information more quickly are being installed. One of these is Integrated Services Digital Network, which has been developed as a worldwide standard that allows two-way processing, storing, and transporting of information in simultaneous voice, data, graphics, and video. It has been adopted in other countries such as Germany and Australia. Asynchronous Transfer Mode is a newer high-speed distribution system. It uses a technological innovation that breaks messages up into small packets. Each packet finds the fastest route to the receiver where the message is reassembled. One of the reasons that these new distributions systems are of importance is that they can carry real-time video images easily. The real time television and radio business is one that the phone companies plan to enter soon.

Post-reading tasks

1. Decide if the statements following the text are true or false. Correct the false ones.

a. The invention of modern electronic media such as radio and television predates the era of telephony.
b. From the beginning the telephone business remained primarily a voice service connecting one individual with another.
c. Full force competition between phone companies made the telephone business to develop.
d. New features of phone technology improved this business.
e. Wireless portable phones are possible only for industry.
f. Cellular phones are different from mobile ones.

2. Answer the following questions

a. When was the cellular phone technology developed?
b. What kind of transmitters weren't so effective in wireless technology?
c. What was the reason of that?
d. What is a "cell" in telephone technology?
e. How are the mobile calls transferred?
f. What is a new form of wireless telephone service?

3. Which of the following words are specific to landline phones, which are to mobiles and which are used for both? Fill in the table and discuss advantages and disadvantages of these types of phones.

Display screen, faceplate, a cord, scroll keys, a button, navigation, text messages, to pick up, a receiver, redial, call waiting, conference calling, phone number storage, ring tones, voice mail, to dial, band mode, connection, keypad.

Landline phone	Mobile phone	The both

4. Translate the word combinations into your native language: service connecting, answering machines, written pages, accepted services, a limited number of phones, incoming call, the limited area, lower-powered cells, complicated services, twisted pair copper wires.

5. Match the highlighted words and phrases in the text with their definitions:

a. A piece of equipment that generates and amplifies a carrier wave and modulates it with information that can be radiated into space.
b. A device that operates by relaying signals from one small area to another through the use of low-powered transmitters.
c. The process covers a broad area of communications techniques, including as transmission of digital pulses between two or more points in a communication system, as transmission of digital modulated analog carriers between two or more points in a communication system.
d. A service feature that allows the user to dial, by depressing a single key or a few keys, the most recent telephone number dialed at that instrument.
e. A low-powered telephone system that will allow people to use portable phones everywhere.

6. Complete this text about basic principles of mobiles using the following words: *roaming, cells, cellular phones, base stations, coverage, range*.

Mobile phones also called _____a_____ , or cell phones for short, need a network of towers or antennas to transmit calls. In a cellular system, a city is divided into smaller section or _____b_____ , where _____c_____ usually occupy a central position. When you are outside your service provider's

_____d_____ area, your telephone may become out of _____e_____ unless your telephone allows _____f_____ , i.e. the ability to use another service provider's network.

7. Read the information about cell-phone etiquette and decide if the statements following the text are true or false. Correct the false statements.

Cell-phone etiquette is really just common courtesy. Most people today have a mobile phone. In fact, many people can't imagine how they ever got along without a portable phone. However, many people also complain about cell phone users. People complain about other people loudly discussing personal matters in public places. They complain when cell phones ring in movie, theaters and concert halls. They complain about people driving too slow, and not paying attention to where they are going because they are talking on a cell phone. And they complain about people walking around talking to people who aren't there. Whenever a new communications technology becomes popular, it changes the way society is organized. Society has to invent rules for the polite way to use the new devices. Our social etiquette, our rules of politeness for cell phones, is still evolving. Cell-phone etiquette applies to most public places. Always try to keep your phone ringer as low as possible or put your mobile phone on vibrate, so it does not distract the people around you. A good time to leave your phone at home, or at least in the car, would be at a funeral, wedding or some event along those lines. Basic Cell phone etiquette rules include:

a. Switching it Off: Know when to turn it off or vibrate it. E.g. meetings, movies, seminars, etc . Vibrate mode when in places where you can take a call, but don't want to disturb others.
b. Be Brief : When you get a call and you're with friends, keep the call short.
c. Permission: Often, it is correct etiquette to inform others at the beginning of the meeting that you are expecting an important call and get their permission.
   Be Polite: Don't scream : speak in a lower-than-normal voice, you will be heard by the caller, and not others in the room.
d. Don't Distract : Avoid talking where you may be distracting to others.
e. Driving : It is not only very dangerous, but also unlawful in most countries to drive & talk on your cell Phone.

f. Switch off your mobile or turn it to vibrate when you are at a meeting, in church, at the cinema, etc. Never use it in mobile-free zones.
g. Don't talk and drive unless you have a hands-free mobile.
h. Don't shout while you're speaking. Remember that you can't judge how loud your voice is to the other person while you are using a mobile, and hearing a loud voice can be annoying for other people.
i. You can talk as much as you want if you are talking to friends.
j. Use your mobile to phone your friends any time, anywhere. Inform others if you are going to use your mobile and get their permission if appropriate.

Summary writing

Summarize the information presented in ex.7 as if you were posting it on a blog. Show your summary to other members of your group so that they could add comments.

Lesson 4. General information about radio

Tuning-in: Before reading the unit, answer these questions.

1. Have you got a radio at home? What make is it?
2. How often do you listen to it? What broadcasts do you listen to?
3. What are the main components and features of your radio set?

Choose as many statements as you think are correct and give a reason:
Radio is:

1. a means of communication;
2. a means of advertisement;
3. some entertainment;
4. research tools;
5. a thing of the past;
6. wireless transmission of signals.

Now scan the following text.

Radio is the wireless transmission of signals through free space by electromagnetic radiation of a frequency significantly below that of visible light, in the radio frequency range, from about 3 kHz to 300 GHz. These waves are called radio waves. Electromagnetic radiation travels by means of oscillating electromagnetic fields that pass through

the air and the vacuum of space. Information, such as sound, is carried by systematically changing (modulating) some property of the radiated waves, such as their amplitude, frequency, phase, or pulse width. When radio waves strike an electrical conductor, the oscillating fields induce an alternating current in the conductor. The information in the waves can be extracted and transformed back into its original form.

The etymology of "radio" or "radiotelegraphy" reveals that it was called "wireless telegraphy", which was shortened to "wireless" in Britain. The prefix radio- in the sense of wireless transmission, was first recorded in the word radioconductor, a description provided by the French physicist Edouard Branly in 1897. It is based on the verb to radiate (in Latin "radius" means "spoke of a wheel, beam of light, ray").

The word "radio" also appears in a 1907 article by Lee De Forest. It was adopted by the United States Navy in 1912, to distinguish radio from several other wireless communication technologies, such as the photophone. The term became common by the time of the first commercial broadcasts in the United States in the 1920s. (The noun "broadcasting" itself came from an agricultural term, meaning "scattering seeds widely.") The term was adopted by other languages in Europe and Asia. British Commonwealth countries continued to commonly use the term "wireless" until the mid-20th century, though the magazine of the BBC in the UK has been called "Radio Times" ever since it was first published in the early 1920s.

In recent years the more general term "wireless" has gained renewed popularity through the rapid growth of short-range computer networking, e.g., Wireless Local Area Network (WLAN), Wi-Fi, and Bluetooth, as well as mobile telephony, e.g., GSM and UMTS. Today, the term "radio" specifies the actual type of transceiver device or chip, whereas "wireless" refers to the lack of physical connections; one talks about radio transceivers, but another talks about wireless devices and wireless sensor networks.

Transducing information such as sound into an electromagnetic pulse signal, which is then sent as an electromagnetic radio wave from a transmitter. A receiver intercepts the radio wave and extracts the information-bearing electronic signal, which is converted back using another transducer such as a speaker. Each process is implemented by a wide range of methods, specialized for different communications purposes.

With more than 100 years of development, each process is implemented by a wide range of methods, specialized for different communications purposes.

Post-reading tasks

1. Guess the meaning of the following words. Are they nouns, verbs or adjectives?

Transmission, electromagnetic, radiation, visible, systematical, phase, conductor, induce, extract, transform, physicist, term, publish, actual, convert.

2. Use the information in the text and a dictionary to match the terms with the appropriate explanations below.

1	Apparatus for receiving broadcast signals	**a.**	radiation
2	The sending out of energy, heat, etc. in rays.	**b.**	radio
3	Part of a radio apparatus for sending out signals, messages, music, etc.	**c.**	oscillation
4	Use of electromagnetic waves without a connecting wire.	**d.**	vacuum
5.	Device for measuring some parameters.	**e.**	term
6.	Swing of an electric charge.	**f.**	conductor
7.	Substance that conducts heat or electric current.	**g.**	sensor
8.	Space completely empty of substance	**h.**	transmitter
9.	Word used to express an idea, especially a specialized concept	**i.**	receiver

3. Identify the scrambled words.

1. ieesslrw;
2. lnsiag;
3. cyenquerf;
4. sgiiatncfni;
5. reign;
6. evaw;
7. elagcemotrcniet;
8. muucav;
9. edtuiplma;
10. racsatbod.

4. If necessary, read the text at your normal pace and decide whether the following statements are true or false.

1. Sound is carried by constant property of the radiated waves.
2. Electromagnetic radiation travels by means of oscillating electromagnetic fields that pass through water.
3. The etymology of "radio" or "radiotelegraphy" reveals that it was called "wireless telegraphy", which was shortened to "wireless" in Britain.
4. The first commercial broadcasts in the United States took place in the 19th century.
5. The more general term "wireless" has gained renewed popularity through the rapid growth of short-range computer networking.
6. Transducing information such as sound into an electromagnetic pulse signal is then sent as an electromagnetic radio wave from a receiver.

Check your grammar

5. Tick the words or expressions which do not express the idea of comparing or contrasting.

1) As loud as, 2) the fastest, 3) so successful that, 4) more popular, 5) moderner, 6) that I do, 7) neither meet nor overlap, 8) as you know, 9) such as.

6. The sentences from group A are uncommon and sound unusual. Match each of them with one of the sentences from group B

Group A:

1. It is possible for it to be updated.
2. It's not possible for it to be updated.
3. It was not possible for it to be updated.
4. It's not necessary for it to be updated.
5. It is necessary for it to be updated.
6. It's a good thing for it to be updated.
7. It's a bad thing for it to be updated.

Group B:

a. It can't be updated.
b. It may be updated.
c. It has to be updated.
d. It should be updated.
e. It needn't be updated.
f. It couldn't be updated.
g. It shouldn't be updated.

7. Complete the sentences using the verbs in brackets. All the sentences are about the future.

1. If a voice signal … misinterpreted as noise, the transmitter … turned off. (be, be)
2. When you …, you … vibrations in the air. (speak, produce)
3. If a certain condition … fulfilled, something … . (be, happen)
4. If you … time, the physical processes of waves … . (reverse, change)
5. If you… it to the radiowaves, you … interesting results. (apply, see)
6. If you … on the radio at the moment, you … the latest news. (switch, hear)
7. When they … this new program, the net … even more listeners. (start, attract)

Discussion points

Discuss in small groups and try to answer the following questions:

- What are the main functions of radio?
- In what way is information transmitted by the radio?
- Are there any synonyms to the word radio?
- Do you know any other wireless types of communication besides radio?

Lesson 5. Digital television

Tuning-in: Discuss:

1. Is there any connection between digital television and computers?
2. What is the difference between analog television and digital television?
3. Why do you think many countries are replacing broadcast analog television with digital television?
4. Is it necessary to use an antenna for receiving digital television signals?

Now check your conclusions reading the following text.

Digital television (DTV) is the transmission of audio and video by digitally processed and multiplexed signal, in contrast to the totally analog and channel separated signals used by analog television.

Digital TV can support more than one program in the same channel bandwidth. It is an innovative service that represents the first significant evolution in television technology since colour television in the 1950s. Many countries are replacing broadcast analog television with digital television and allowing other uses of the television radio spectrum. Several regions of the world are in different stages of adaptation and are implementing different broadcasting standards.

Digital television supports many different picture formats defined by the broadcast television systems which are a combination of size, aspect ratio (width to height ratio).

With digital terrestrial television (DTT) broadcasting, the range of formats can be broadly divided into two categories: high definition television (HDTV) for the transmission of high-definition video and standard-definition television (SDTV). These terms by themselves are not very precise, and many subtle intermediate cases exist.

One of several different HDTV formats that can be transmitted over DTV is: 1280 × 720 pixels in progressive scan mode (abbreviated 720p) or 1920 × 1080 pixels in interlaced video mode (1080i). Each of these uses a 16:9 aspect ratio. (Some televisions are capable of receiving an HD resolution of 1920 × 1080 at a 60 Hz progressive scan frame rate – known as 1080p.) HDTV cannot be transmitted over current analog television channels because of channel capacity issues.

Standard definition TV (SDTV), by comparison, may use one of several different formats taking the form of various aspect ratios depending on the technology used in the country of broadcast. For 4:3 aspect-ratio broadcasts, the 640 × 480 format is used in NTSC countries, while 720 × 576 is used in PAL countries. For 16:9 broadcasts, the 720 × 480 format is used in NTSC countries, while 720 × 576 is used in PAL countries. However, broadcasters may choose to reduce these resolutions to save bandwidth (e.g., many DVB-T channels in the United Kingdom use a horizontal resolution of 544 or 704 pixels per line).

Each commercial broadcasting terrestrial television DTV channel is permitted to be broadcast at a bit rate up to 19 megabits per second. However, the broadcaster does not need to use this entire bandwidth for just one broadcast channel. Instead the broadcast can use the channel to include PSIP and can also subdivide across several video subchannels (aka feeds) of varying quality and compression rates, including

non-video datacasting services that allow one-way high- bandwidth streaming of data to computers.

A broadcaster may opt to use a standard-definition (SDTV) digital signal instead of an HDTV signal, because current convention allows the bandwidth of a DTV channel (or "multiplex") to be subdivided into multiple digital subchannels, (similar to what most FM radio stations offer with HD Radio), providing multiple feeds of entirely different television programming on the same channel. This ability to provide either a single HDTV feed or multiple lower-resolution feeds is often referred to as distributing one's "bit budget" or multicasting. This can sometimes be arranged automatically, using a statistical multiplexer (or "stat-mux"). With some implementations, image resolution may be less directly limited by bandwidth; for example in DVB-T, broadcasters can choose from several different modulation schemes, giving them the option to reduce the transmission bitrate and make reception easier for more distant or mobile viewers.

There are several different ways to receive digital television. One of the oldest means of receiving DTV (and TV in general) is using an antenna (known as an aerial in some countries). This way is known as Digital terrestrial television (DTT). With DTT, viewers are limited to whatever channels the antenna picks up. Signal quality will also vary. Regardless of what sales ads tried to leave the public to believe, there is no such thing as a specialized DTV antenna. The air antenna that worked for analog TV should work for Digital TV (but DTV signal levels are lower thus requiring actually a bigger antenna with more gain unless you are visually close to the transmitting towers).

Other ways have been devised to receive digital television. Among the most familiar to people are digital cable and digital satellite. In some countries where transmissions of TV signals are normally achieved by microwaves, digital MMDS is used. Other standards, such as Digital multimedia broadcasting (DMB) and DVB-H, have been devised to allow handheld devices such as mobile phones to receive TV signals. Another way is IPTV, that is receiving TV via Internet Protocol, relying on Digital Subscriber Line (DSL) or optical cable line. Finally, an alternative way is to receive digital TV signals via the open Internet. For example, there is P2P (peer-to-peer) Internet television software that can be used to watch TV on a computer.

Some signals carry encryption and specify use conditions (such as "may not be recorded" or "may not be viewed on displays larger than 1 m in diagonal measure") backed up with the force of law under the WIPO Copyright Treaty and national legislation implementing it, such as the U.S. Digital Millennium Copyright Act. Access to encrypted channels can be controlled by a removable smart card, for example via the Common Interface (DVB-CI) standard for Europe and via Point Of Deployment (POD) for IS or named differently CableCard.

Post-reading tasks

1. Find in the text the words that are synonymous to the following ones:

a) new, b) development, c) let, d) district, e) various, f) widely, g) breadth, h) approximate, i) fine, j) some.

2. Arrange each group of words on a line, placing the two opposites at the two ends and the most neutral word in the middle.

A little, extremely, quite, not at all, very

Allow, forbid, permit, let, ban, prohibit, deny.

3. Arrange the words on a scale: many, all, each, one, certain, none, any, some, a few, most.

4. Are the statements true or false?

1. Digital television is not in contrast to analog television.
2. Digital TV cannot support more than one program in the same channel bandwidth.
3. Analog television is more modern than digital television.
4. Many countries are replacing broadcast analog television with digital television.
5. Digital television supports a few different picture formats defined by the broadcast television systems.
6. One of the oldest means of receiving DTV (and TV in general) is using an antenna.
7. The air antenna that worked for analog TV can work for digital TV.
8. DTV signal levels are higher than analog ones.
9. DTV signal levels require a bigger antenna with more gain.
10. Digital TV signals can't be received via the open Internet.

Check your grammar

5. Finish the following sentences.

1. If I could afford the best TV set on the market …
2. If faster internet access is a priority, you should …

3. When buying a TV set, it is good to …
4. If we are to retain the privacy of face-to-face relations in communication systems, we must …
5. If they could identify the problem quickly …
6. The costs of development would increase dramatically if …
7. … it should include a good antenna.
8. … chosen to make it effective.
9. If your vision is not good, you...
10. … need a larger screen.

6. Make up questions to the following answers.

1. The transmission of audio and video signal.
2. More than one program in the same channel bandwidth.
3. An innovative service.
4. They allow other uses of the television radio spectrum.
5. They are defined by the broadcast television systems.
6. It can take the form of various aspect ratios.
7. Multiplex.
8. This can sometimes be arranged automatically.
9. To receive digital television.
10. By a removable smart card.

7. Fill in the blanks, putting the verb in the appropriate tense in the passive

1. Television _____ practically in all countries of the world for many years. (use)
2. Audio and video signals _____ digitally_____ and _____ tomorrow. (process, multiplex)
3. More than one program can _____in the same channel bandwidth by digital TV. (support)
4. Broadcast analog television _____ with digital television at the moment. (replace)
5. In several regions of the world various broadcasting standards are in different stages of adaptation and many of them _____ some years ago. (implement)
6. Many different picture formats _____ by the broadcast television systems which are a combination of size, aspect ratio (width to height ratio). (define)

7. The range of formats should _____ broadly _____ into two categories. (divide)
8. HDTV cannot _____ over current analog television channels because of channel capacity issues. (transmit)
9. With some implementations, image resolution may _____ less directly _____ by bandwidth (limit)
10. Other ways _____ already _____ to receive digital television. (devise)

8. Translate three first passages of the text into your native language.

Summary writing

Try to produce a summary of the chapter jotting down supporting details from the text.

Lesson 6. Careers in telecommunications

Tuning-in: Discuss the following questions:

1. What are your plans when you graduate from the University?
2. Do you want to use the knowledge in the field of telecommunications for your job?

Read the text and arrange the following headings according to its parts:

a) Skills and Specifications.
b) Duties and Responsibilities.
c) Telecom engineers: Job profile and Description.
d) Education and Qualifications.
e) Obtaining the First Job.

_____1. _____

The Information Age is upon us, making jobs in telecommunications very important in terms of social significance and impact. It's an excellent time to be interested in career in electronic media, provided you are flexible and innovative. The field is full of rapid change. People who succeed in the field are those who are quick on their feet and willing to adapt to and initiate new ideas. People looking for lifelong security need not apply. Gaining employment in telecommunications has never been easy because there are many more people who would like to be

so employed than there are jobs. But number of people interested in entering the field has not declined, the breadth of jobs for which they can apply has increased. Several studies have shown that the number of university graduates majoring in communications has remained steady for the past several years, while the number of jobs has grown several percent a year to about 360.000 direct employees.

A telecommunications engineer is someone who specializes in the inspection and repair of any equipment or service related to the field of telecom. He has to understand and solve problems, assess the situation and make recommendations or suggestions on how to improve the service.

_____2. _____

Telecommunications engineers must know how to use and support telecommunications equipment. They must identify assess and find solutions to the various technical problems. They must also be able to anticipate problems in services and equipment and be ready with solutions even before they occur. They must visit and inspect sites regularly to see if any repair is required. The engineers must also give approval to the quality of the equipment and modify the concerned authorities if any change is needed. They must be able to promptly work in emergencies and be equipped to handle disruptions of service. They should know how to design and create telecommunications systems. Telecom engineers must be aware of government and company standards and procedures and apply or follow them accordingly.

_____3. _____

A candidate interested in this field must be able to solve problems and have the ability to analyze situation that are critical to the job. Only bookish knowledge is not enough, one must be persistent, organized and have analytical skills to use the information and apply it practically. Communication, both verbal and written, is also helpful. A telecom engineer should be able to meet deadlines and work under pressure. He must be a team player and work with different department and workers in the field.

_____4. _____

Telecommunication engineers must hold either bachelors or master's degrees in electrical, electronic or mechanical engineering. They must have a science background with specialization in math and physics.

_____5._____

The first job is the hardest to obtain and usually involves a great deal of letter writing. You can send letters of introduction and resumes (CVs) to the different telecommunications-related groups. It can serve as an excellent source for names and addresses for potential employment possibilities. Regardless of your method for finding a job, you must prepare a resume (a CV). The exact form you use should be something that highlights your strengths. One-page resumes are the best for beginning jobs. Computers make it easy to change a resume slightly to adapt to each particular job. Spelling and punctuation errors should be nonexistent. A resume is a sales tool; it should sell, among other things, your ability to communicate. Most jobs require an interview. Knowing something about the company and the people who will be doing the interviewing is most valuable. On-line services and library reference books all have information about media companies that can help you assess the company's needs.

Post-reading tasks

1. Are the following statements true or false? Correct the false statements

a) Because jobs in the field of telecom are so fluid it is difficult to gather reliable statistics about the number of people employed in the field.
b) An excellent way to begin to prepare for your career in telecommunications is to enroll on one of the universities that offer course work in this area.
c) A telecom engineer is someone who specializes in the design, construction, and maintenance of the physical and natural built environments.
d) Engineers working in the field of telecommunications must have a background with specialization in foreign languages.
e) Ability to work in team, logical reasoning, analytical thinking, being tight deadlines and efficiency are necessary skills to apply a job.
f) Telecom engineers work in many industries, and their work varies by industry and function. Some specialize in energy systems; applied mechanics; automotive design; manufacturing; materials; plant engineering and maintenance; pressure vessels and piping; and heating, refrigeration, and air-conditioning systems.

g) A resume (CV) is a description of someone's family, education, likes and dislikes which is arranged like a letter.

2. Make up the most available word combinations

1.	to identify	a.	one of the universities
2.	to handle	b.	a job
3.	to design	c.	problems
4.	to solve	d.	recommendations or suggestions
5.	to make	e.	telecommunications systems
6.	to apply	f.	disruptions of service
7.	to enroll on	g.	assess

3. Complete these definitions with jobs: software engineer, computer security specialist, blog administrator, help desk technician, DTP operator, hardware engineer, network administrator, webmaster.

a) A _____ designs and develops IT devices;
b) A _____ writes computer programs;
c) A _____ edits and deletes posts made by contributors to a blog;
d) A _____ uses page layout software to prepare electronic files for publication;
e) A _____ manages the hardware and software that comprise a network;
f) A _____ designs and maintains websites;
g) A _____ works with companies to build secure computer systems;
h) A _____ helps end-users, with their computer problems in person, by email or over the phone.

4. Discuss if you would like to apply for one of these jobs. Give reasons for your answers.

Check your grammar

5. Underline all the modal verbs in the text of this unit and then discuss the following things:

a) personal qualities and abilities you should take into account when applying for the position of Senior programmer;
b) you must consider when obtaining Education and Qualifications;
c) that may/might happen to the telecommunications field in the next ten years.

6. Complete these sentences with suitable modal verbs: can/could; may/ might; must; should

a) With a web editor, you _____ create a web document easily.
b) Once live, you _____ update your website regularly.
c) To view PDF File, you _____ have Adobe Acrobat Reader.
d) Websites with graphics are more inviting than those written in plain text, so you _____ like to insert some graphics into your documents.
e) _____ I use your laptop? I need to print out this report.

7. Read the curriculum vitae and complete the blanks using the following words and word combinations: multiple computer platforms, computer hardware and networking, Engineering, Good communication, updating the site, Bi-lingual, clean

Curriculum Vitae

Personal Information

Name: Maria Quintana
Address: Avda Seneca, 5 Madrid 28040
Telephone 0032 91 5435 201
Email : marialovely @ telefonica.net
Date of birth: 28.05.85

Education and Training

2008 Online Diploma in web-based technology for business
2006 Course in web design at the Cybernetics College, London: HTML, Java and macromedia Dreamweaver
2005 Course in_____a_____ at the Cybernetics College, London
1999–2004 Degree in Computer Science and _____b_____, University of Madrid

Work Experience

January 2006-present Part-time Webmaster at www.keo.es; responsible for_____c_____ and using Adobe Flash to create animations
May 2005-December 2006 IT consultant at Media Market, specializing in e-commerce and IT strategies

IT skills

Knowledge of _____d_____ (Windows, Mas, Linux); strong database skills (including the popular open source MySQL); complete understanding of graphics formats and Cascading Style Sheets

Personal skills

Social and organizational skills

_____e_____skills

Other Information

_____f_____in Spanish (mother tongue) and English (fluent)

_____g_____driving License

Hobbies and Interests

Web surfing, listening to music, travelling

References

Miguel Santana, Manager keo.es.

Sam Jakes, Lecturer, Cybernetics College

Writing

Write your own CV in English, using Maria's CV as a guide.

PART II
SUPPLEMENTARY READING

Text 1

Ex.1 Read the text and answer the questions: What channels of telecommunications does the article deal with?

TELECOMMUNICATIONS AND THE COMPUTER ERA

Telecommunications are devices and systems transmitting electronic signals across long distances. By means of such devices people around the world can get in touch with one another, access information rapidly, and communicate. Telecommunications implies the existence of a sender of information and of more recipients connected by a technology.

In order to transmit data, telegraphs, telephones, radio, television modify electronic signals, working by analog transmission. On the other hand, computers and other types of electronic equipment transmit digital information. Digital technologies convert a message into electronic form. Digital information can be transmitted faster and more clearly than analog signals. Digital transmissions can be sent over wires, cables or radio waves, and must be decoded by a digital receiver. New digital telephones and televisions have made telecommunications more efficient.

Personal computers can communicate with each other and with larger networks, such as the Internet, by using the ordinary telephone network. The computer converts its digital data into sound by means of a device called a modem (abbreviated form for modulator /demodulator). Digital signals are converted into analog signals and back again by modems. Thus computers communicate, or network, across the world.

Computer telecommunications makes possible sending and receiving audio, video, text, software, and multimedia information. This stands as one of the fastest-growing segments of telecommunications market. Existing telephone connections are used by computer telecommunications to transmit digital data. This type of transmission is frequently done over networked computers.

The transfer of information by electronic means is achieved through connections between groups of computers and associated devices called networks. Individual computers are called workstations, and communicate to each other via cable or telephone line linking to servers.

The Internet has made it possible for people all over the world to effectively and inexpensively communicate with each other. This is a decentralized network of personal, business, educational computers, and sources of information.

Electronic mail or e-mail, is today a common form of computer telecommunications through the Internet. E-mail is a text-based message delivery system. It allows information to be sent to individual computer users.

Businesses frequently use computer telecommunications technologies with automated banking-terminals and devices for credit transactions

Ex. 2. Make up 7-8 questions to the text

Ex.3. Write out the main key words into your dictionary

Text 2

Ex.1. Read the text to get the general information about the main principles of phone operation

The Telephone

The first telephone was invented in 1876. Speech transmission in those days was limited to a distance of a few miles and the construction of the first telephone was simple. A wire with a ground provided the connection. The main parts were a transmitter and a receiver. Sound waves struck the diaphragm and caused it to vibrate. The vibration of the diaphragm changed the magnetic field, inducing electric waves of varying voltage and current. These waves passed to the distant telephone where the changes produced in the magnetic field caused the diaphragm to reproduce the original sound.

Later development of the telephone changed its construction, it became more complex. Transmitters and receivers were separated. Auxiliary elements were used in its circuit to provide for better transmission of speech. The need to connect any two of a large number of telephone sets led to the development of a switchboard in 1878. The advantage of

a central switching office with a switchboard was very great. In 1889 telephone sets were interconnected automatically. Further development improved the switching system and more telephone constructions were used. The number of telephones to be interconnected increased and large cities needed more switchboard offices. Therefore the interconnection problem was of great importance. Central offices grew in number.

Transmitter

When speaking over the telephone, we speak into the microphone or transmitter. The transmission of sounds over a distance is the transmission of oscillations. The frequency of the transmitted oscillations must be constant. The microphone or transmitter consists of microphone housing, carbon chamber, carbon diaphragm, carbon granules, insulating spacer, and conductor. The current passes through the diaphragm, carbon chamber and carbon granules. The sound pressure on the diaphragm varies the pressure on the granules of carbon. These granules either make more contacts and decrease the resistance of the granules, or make fewer contacts and increase the resistance. Sound waves produce oscillations of the same frequency as those of the sounding body. At these both the transmitter resistance and the current in the circuit will change.

Receiver

The varying current passes through the receiver connected to a network. The receiver consists of electromagnet coils, a steel magnet and a diaphragm. The diaphragm, magnets and coil are housed in a plastic cap. A variable current passing through the magnet's coils changes the position of the diaphragm;

it makes it vibrate. The frequency of these oscillations is the same as that of the transmitter. Therefore, the receiver produces the same sounds which are spoken into the microphone.

Telephone set protection

Lines serving telephone sets may have contacts with power lines or with lightning. Therefore telephone sets and their lines need protection, and protector units serve as protection devices. Usually a protector unit consists of carbon protector blocks connected between each wire of the line and the ground. Fuses are also used on the protector blocks; they protect protector blocks against power contact currents. A fuse is an important part of protector blocks. Without it power contact currents

may overheat the protector or its ground conductor. Sometimes fuses are not used. A fuse is not used if the building is served by insulated wires that are connected to metal-sheathed cables on the line pole.

The fax

Pictures can be transmitted over telephone by sound signals. A new apparatus does this by „looking'' at the picture and sending what it sees over the telephone to an apparatus at the receiving end, which then converts the sound signals back into the picture. At the transmitting end, the photograph, picture or document is put into the apparatus. At the receiving end the reproduction appears on paper. Usually a photograph takes six minutes to be received and reproduced .In the apparatus optical devices begin rotating and picking up reflected light which passes through a filter. This is how the apparatus works.

Ex. 2. Answer the following questions:

1. By what means is speech transmitted over a distance?
2. By what means are electric waves carried over a distance?
3. By what means are two telephone sets connected?
4. What parts does a telephone set include?
5. What parts does a receiver include?
6. What parts are linked to a common circuit?
7. What is the transmission of oscillations?
8. How many parts does the transmitter consist of?
9. What parts does current pass through?
10. What is the frequency of oscillations produced by sound waves?

Ex. 3. Write out the main key words into your dictionary

Text 3

Ex.1. Read the text, divide it into passages and title them

Cell Phone

A **mobile phone or cell(ular) phone** is an electronic telecommunications device with the same basic capability as a conventional fixed-line telephone, but which is also entirely portable and is not required to be connected with a wire to the telephone network. In addition to the standard voice function of a telephone, a mobile phone can support many additional services such as SMS for text messaging,

packet switching for access to the Internet, and MMS for sending and receiving photos and video. Most current mobile phones connect to a cellular network of base stations (cell 38 sites), which is in turn interconnected to the public switched telephone network (PSTN) the exception are satellite phones). Radiophones, using the VHF band, were developed during the Second World War to provide communications for ships and airplanes. At the end of the war they were further developed as mobile phones for use by the emergency services and other services such as taxis. With mobile phone systems, all communications take place through a central control base station. Mobile units normally do not communicate directly with other mobile units. They send messages to the control base station and the base station controller relays the messages to other mobile units. Although mobile phones can be moved, they must stay within fixed areas. This type of system is limited by the fact that there are not enough VHF frequencies available for large numbers of communications between individual users.

The problem of a lack of suitable frequencies can be overcome by using a cellphone network. A cellular phone is a lightweight, portable radio transceiver which can transmit and receive telephone calls anywhere in the cellular network area. In the network, the same frequencies can be used for many different telephone calls at the same time. To achieve this, each communications area is divided into a number of hexagonal-shaped cells. Each cell is allocated a number of frequency channels for communications. Although the frequencies used in any one cell are not used in its neighboring cells, the same frequencies can be used in cells further away without causing interference. The size of the cells vary between 1 km to about 30 km across, depending on the output power of the cellphone transmitters. Each area can have a different number of cells, but a cluster of seven cells gives a good compromise between the number of frequency channels available in each cell and the interference between communications in different cells. Each cell has a small electronic base station situated in a public place such as a car park or shopping center. All the base stations for a clustor of cells are permanently connected to a main switching center (MSC). This contains a computer to select suitable frequencies and control the communications for that cluster of cells. The MSC is also connected to other MSCs and to the public telephone exchange, allowing cellphones to make calls

or receive calls from other cellphones and fixed telephones throughout the whole telephone system. The MSC keeps a register of cellphones indicating their cell position. If the cellphone moves to another cell, its new position is signaled to the MSC. In this way, the MSC knows where to send signals to contact each cellphone. When a call is made to a cellphone, the MSC first checks the registrations to find the position of the cellphone. It then pages the cellphone and causes it to tune to the allocated frequency channel. The cellphone then begins sending an 8kHz signal to the base station. When the user takes the call, the 8kHz signal is discontinued and the speech channel is enabled.

The base station constantly monitors the signal level to a call. If the signal level becomes too strong it will cause interference to other users. To prevent this, the power level of the cellphone is automatically reduced. If the signal level becomes too weak, the MSC tests the signal strength from neighboring base stations and switches the call to another base station and speech channel if necessary. This may cause a period of silence of up to about 400 ms while the switching take place

Ex. 2. Answer the following questions:

1. What is a mobile phone?
2. How do mobile units communicate to each other?
3. Where are the base stations usually situated?
4. What are the base stations of a cluster connected to?
5. What frequency has the signal sent by a cellphone to the base station?
6. How long does it take to switch between neighboring base stations?
7. How many cells does a cluster usually have?
8. What shape do the cells have?
9. What frequencies do the radiophones use?
10. What is a packet switching used for?

Ex. 3. Write out the main key words into your dictionary

Text 4

Ex.1. Read the text to get the general information about the main principles of remote control operation

A **remote control** is an electronic device used for the remote operation of a machine. The term remote control can be contracted to remote or

controller. It is known by many other names as well, such as clicker and also the changer. Commonly, remote controls are Consumer IR devices used to issue commands from a distance to televisions or other consumer electronics such as stereo systems, DVD players and dimmers. Remote controls for these devices are usually small wireless handheld objects with an array of buttons for adjusting various settings such as television channel, track number, and volume. In fact, for the majority of modern devices with this kind of control, the remote contains all the function controls while the controlled device itself only has a handful of essential primary controls. Most of these remotes communicate to their respective devices via infrared(IR) signals and a few via radio signals. They are usually powered by small AAA or AA size batteries. One of the earliest examples of remote control was developed in 1898 by Nikola Tesla. In 1903, Leonardo Torres Quevedo presented the Telekino at the Paris Academy of Science, accompanied by a brief, and making an experimental demonstration. The Telekino consisted of a 32robot that executed commands transmitted by electromagnetic waves. It constituted the world's first apparatus for radio control. The first remote-controlled model airplane flew in 1932, and the use of remote control technology for military purposes was worked intensively during the World War II. By the late 1930s, several radio manufacturers offered remote controls for some of their higher-end models. Most of these were connected to the set being controlled by wires, but the Philco Mystery Control (1939) was a battery-operated low-frequency radio transmitter, thus making it the first wireless remote control for a consumer electronic device. The first remote intended to control a television was developed by Zenith Radio Corporation in 1950. The remote-officially called „Lazy Bones" was connected to the television set by wire. To improve the cumbersome setup, a wireless remote control called „Flashmatic" was developed in 1955 which worked by shining a beam of light into a photoelectric cell. Unfortunately, the cells did not distinguish between light from the remote and light from other sources and the Flashmatic also required that the remote control be pointed very accurately at the receiver.

In 1956 Robert Adler developed „Zenith Space Command", a wireless remote. It was mechanical and used ultrasound to change the channel and volume. When the user pushed a button on the remote control it clicked and struck a bar, hence the term „clicker". Each bar

emitted a different frequency and circuits in the television detected this noise. The invention of the transistor made possible cheaper electronic remotes that contained a piezoelectric crystal that was fed by an oscillating electric current at a frequency near or above the upper threshold of human hearing, though still audible to dogs. The receiver contained a microphone attached to a circuit that was tuned to the same frequency. The impetus for a more complex type of TVRC came in the late 1970s with the development of the Ceefax teletext service by the BBC. Most commercial remote controls at that time had a limited number of functions, sometimes as few as three: next channel, previous channel, and volume/off. This type of control did not meet the needs of teletext sets where pages were identified with three-digit numbers. A remote control to select teletext pages would need buttons for each number from zero to nine, as well as other control functions, such as switching from text to picture, and the normal television controls of volume, station, brightness, color intensity and so on. So BBC engineers began talks with one of two television manufacturers which led to early prototypes in around 1977-78 that could control a much larger number of functions. Later, in 1987, it was created a remote control which could „learn" remote signals from other different devices.

By the early 2000s, the number of consumer electronic devices in most homes greatly increased, along with the number of remotes to control those devices. To operate a home theater as many as five or six remotes may be required, including one for cable or satellite receiver, VCR or digital video recorder, DVD player, TV and audio amplifier. Most control remotes for electronic appliances use a near infrared diode to emit a beam of light that reaches the device. This infrared light is invisible to the human eye, but picked up by sensors on the receiving device. Video cameras see the diode as if it produces visible purple light. With a single channel (single-function, one-button) remote control the presence of a carrier signal can be used to trigger a function. For multi-channel (normal multi-function) remote controls more sophisticated procedures are necessary: one consists of modulating the carrier with signals of different frequency. After the demodulation of the received signal, the appropriate frequency filters are applied to separate the respective signals. Nowadays digital procedures are more commonly used. One can often hear the signals being modulated on the infrared

carrier by operating a remote control in very close proximity to an AM radio not tuned to a station

Ex. 2 Make up 7-8 questions to the text

Ex.3. Write out the main key words into your dictionary

PART III
APPENDIX 1

TEST I

1. Match the terms with their definitions.

1	Band width	**a**	computers sending or receiving information by electronic means
2	Cyberspace	**b**	the system for playing recorded music, speech, etc. in which the sound is directed through two channels
3	Hypermedia	**c**	communicating over a distance. Some examples of information that can be telecommunicated are files, programs data, text, music, sound, clip art, graphics, video, and photographs
4	Modem	**d**	device for collecting or sending out signals being transmitted through free space
5	Telecommunication	**e**	being on line through a computer
6	Telecomputing	**f**	closed path around which a current can flow
7	To induce	**g**	a hyperlink that links to other forms of media: graphics, sound, video etc.
8	Circuit	**h**	how fast data flows on a given transmission path (or the width of the range of frequencies that an electronic signal occupies on a given transmission medium.
9	Antenna (aerial)	**i**	produce an electric or magnetic effect at a distance
10	Stereo	**j**	a device that allows computer signals to be sent over telephone lines.

1	2	3	4	5	6	7	8	9	10

2. Fill in the gaps with the most appropriate term

11.A telephone ……. or provider is a company that provides telephone service both local and long-distance to customers.

a. install b. message c. carrier d. call

12. In the US there is a lot of ……. in the telecommunication field now so telephone service prices have come down in the past twenty years. Many companies are trying hard to get and keep customers.

a. message b. competition c. number d. page

13. We pay a monthly service fee and, in our plan, we are able to make an ……. amount of local calls per month. That means that we can call anyone and talk for as long as we want so long as they live in the specified vicinity.

a. limited b. unlimited c. long-distance d. installed

14. I just moved and I have to get my phone ….. up soon. I have my cell phone but the rates are really pricey during the day.

a. deregulated b. answered c. called d. hooked

15. I need to get a …… carrier soon. I want to call my parents on a regular basis and I can't call them with my regular, local package because they live on the west coast and we're on the east coast.

a. long-distance b. message c. local d. voicemail

16. I'm going to get ….. soon so that people can leave me messages on my landline if I am not home. I hate not knowing who called and this way, I'll be able to respond to calls left by anyone who choices to leave me a message.

a. cordless b. voicemail c. cable d. fees

17. I'm also going to get call- ….. thrown into my phone package. That way, if I'm on the phone with someone, I'll hear sound and know that someone else is trying to reach me. All you have to do is press one button to put the first caller on hold in order to answer the second caller who is trying to get through.

a. mobile b. waiting c. local d. hook-up

18. I want to buy a …… phone so that I can walk around my house and talk on the phone. I don't like being confined to my desk and the telephone cord is so short.

a. monopoly b. collect c. package d. cordless

19. I am in the process of hooking up my phone service. The telephone company is sending a technician out today to …… my landline. I can't wait to have a phone again!

a. fee b. cable c. install d. hang-up

20. Why didn't you ….. me a message? I didn't even know that you called. Please leave a note the next time you call so that I don't miss any urgent matters.

a. leave b. miss c. turn d. call

3. For sentences (21-30) choose the correct answer (A, B, C or D)

21. Television _____first _____in 1937.

22. Other improvements in materials and devices led ____the transmission of information via cables.

23. This _____the basis for all radio and TV broadcasting.

24. The _____change which has occurred in the last twenty years is that from analogue to digital methods of information transmission.

25. Optical fiber cables _____the telephone system immensely.

26. The next major step forward _____in 1978 with the invention of the telephone by Bell.

27. This _____the way for the free-space transmission of information without wires.

28. The advances in microelectronics and the merging of communications with computers _____to the digital transmission mode

29. The market need for vast quantities of information transmission and processing at very high speed _____only be reliably catered for by using digital technics.

30. In fact the most rapidly growing field _____almost certainly in data communications employing high-speed digital techniques.

21	A	has … been established	B	was…. established	C	is … established	D	can be established
22	A	to	B	for	C	by	D	from
23	A	providing	B	being provided	C	provides	D	provided
24	A	greater	B	greatest	C	the most great	D	more great

25	A	have been improved	B	improved	C	have improved	D	has improved
26	A	have come	B	come	C	came	D	comes
27	A	opening	B	opened	C	open	D	has open
28	A	have led	B	led	C	has been led	D	leds
29	A	must	B	might	C	can	D	could
30	A	was	B	is	C	are	D	were

4. Read the text and decide if the following sentences are true or false

The Evolution of Telecommunications

People who live in the last decade of the twentieth century are so accustomed to the convenience brought by modern technologies that most of the time they seem to take it for granted. If we review the history of human communication, we will find that the communication technologies we are using today were not achieved in one day; they are the result of evolution.

The ancient Egyptians, Athenians and Romans utilized fire, smoke, and flags to communicate at a distance. Men also knew to send news by pigeons because they could fly hundreds of miles at speeds up to eighty miles an hour. Messengers strongly relied on horses to deliver written documents.

Although electricity had been discovered early in ancient China, it was not widely known until the famous experiment of Benjamin Franklin in 1748: Franklin successfully discharged electricity through a wire across the Schuylkill River at Philadelphia. Later on, more electrical devices were invented one after another and were applied to our lives.

During the 1800's, telegraph (1836), telephone (1876), and radio (1895) were invented . They soon became new communication tools and brought a dramatic change to human lives. For telegraphy, early in 1753, people were suggested that using a wire for each letter of the alphabet. In 1787, a French mechanic used a wire to send words in code to another room. In 1794, Russer and Salva found that telegraph could be operated by "interrupting electric circuits on the desired wire

and causing sparks to appear". More scientists continued improving telegraph devices. Among them, Samuel F. B. Morse designed the first commercial telegraph apparatus for public and practical use. The dot-and-dash Morse code, the Morse key, and the stylus recorder became the most well-known telegraph inventions .

Like the telegraph, the telephone is a result from its preceding inventions. In 1861, a German physics teacher created a telephone with a make-and-break transmitter. It could be used to exchange words and sentences. After experimenting a number of telephone instruments, in 1876, Alexander Graham Bell demonstrated a telephone that could send voice at a distance through a wire from one end to another.

As we look back at the history of communication technology, we found that it is also the "story of how man overcame the barriers of time and space". Man adopted new technologies such as telegraph or telephone to communicate at a distance more efficiently, and no longer set fire to inform each other like his ancestors did.

Telecommunications innovations continued evolving in the twentieth century. There was television (1920), analog computers (1930), radar (1935), xerography (1937), digital computers (1954), artificial satellites (1957), lasers (1960), integrated circuits (1962), digital transmission (1964), VLSI computer (1980), super computer (1982-88), fiber optics (1985), broadband switching (1990), photonic switching (1990), optical amplifier (1990), voice recognition (1994), and more are coming.

The world we are living now is a computer world. The development of computer also resulted from many previous inventions. In 1642, Blaise Pascal of France invented a gear-driven adding and subtracting machine. In 1801, Joseph-Marie Jacquard of France invented the automatic weaving loom. The design of computer is originally from the idea used to operate the machine. In 1822, Englishman Charles Babbage designed a calculator with the elements of a digital computer. It was able to do complex calculations and set up its results in type. In 1887, Herman Hollerith of the United States created a punched-card system to do statistical work.

At the early stage of computer development, computer was conceived to be a bigger, faster, and more sophisticated electronic calculating machine. It was primarily a device for numerical calculations. However, the utilization of computers at modern stage is much more than numerical

calculating. They can be used for editing, storing, manipulating, and retrieving text. Computers can function so sophisticated that sometimes they are called "artificial intelligence" or "thinking machines." Due to the combination of telecommunications and computers, people in the information society not only interact with each other but also with media machines. Modern communication is a phenomenon of "talking and thinking among people and machines". After we review the history, we know that technologies have evolved from one another. Each new technology adopted something from the existing technology and often replaced the older technology. In the 1900's, newer and better computers are created, and old computer devices are no longer in use. When a new technology is introduced to our society, it brings us a greater convenience and efficiency; therefore, old technology sooner or later will be replaced. For instance, telegram is no longer a major communication means in our society. Telephone has been widely adopted; and nowadays, cellular telephone is even getting more popular.

31. The ancient Egyptians, Athenians and Romans used pigeons to send news to hundreds of miles away;
32. In 1836 Benjamin Franklin successfully discharged electricity through a wire;
33. F. B. Morse designed the first commercial telegraph apparatus, the dot-and dash;
    Morse code, the Morse key and the stylus recorder;
34. Telecommunications innovations continued evolving in the nineteenth century;
35. The world we are living now is a computer world;
36. The development of computer also resulted from many previous inventions made by Italians, Spanish and Chinese;
37. At the early stage of computer development it was primarily a device for numerical calculations;
38. Telephone has been widely adopted and called "artificial intelligence"
39. Fire, smoke, flags, pigeons, messengers, telegraph, telephone, radio, the Morse code are means of telecommunications.
40. Fiber optics, broadband switching, photonic switching, optical amplifier, voice recognition are not means of telecommunications.

5. Read the text. Choose from (A-J) the one which best fits each space (41-50).

Telecommunications are devices and systems transmitting electronic signals across long distances. By means of such devices people around the world can get in touch with one another, access information rapidly, and communicate. Telecommunications implies the existence of_____41_____ connected by a technology. In order to transmit data, telegraphs, telephones, radio, television modify electronic signals, working by analog transmission. On the other hand, computers and other types of electronic equipment _____42_____. Digital technologies convert a message into electronic form. Digital information _____43_____ than analog signals. Digital transmissions can be sent over wires, cables or radio waves, and must be decoded by a digital receiver. New digital telephones and televisions have made telecommunications more efficient. Personal computers can communicate with each other and with larger networks, such as the Internet, by using the ordinary telephone network. The computer converts _____44_____ by means of a device called a modem (abbreviated form for modulator /demodulator). Digital signals are converted into analog signals and back again by modems. Thus computers communicate, or network, across the world.

Computer telecommunications makes possible_____45_____ . This stands as _____46_____ of telecommunications market. Existing telephone connections are used by computer telecommunications to transmit digital data. This type of transmission is_____47_____ . The transfer of information by electronic means is achieved through connections between groups of computers and associated devices called networks. Individual computers are called workstations, and _____48_____ linking to servers. The Internet has made it possible for people all over the world to effectively and inexpensively communicate with each other. This is a decentralized network of personal, business, educational computers, and sources of information. Electronic mail or e-mail, is today _____49_____ through the Internet. E-mail is a text-based message delivery system. It allows information to be sent to individual computer users. Businesses frequently use computer telecommunications technologies _____50_____

A *with automated banking-terminals and devices for credit transactions.*

B *a common form of computer telecommunications*

C *communicate to each other via cable or telephone line*
D *frequently done over networked computers.*
E *one of the fastest-growing segments*
F *sending and receiving audio, video, text, software, and multimedia information.*
G *its digital data into sound*
H *can be transmitted faster and more clearly*
I *transmit digital information*
J *a sender of information and of more recipients*

6. Match an expression in A with one in B.

A	B
51. Asking for time to think	a. Sorry, I didn't quite catch that
52.Responding to what someone has said	b. I'm convinced that…
53. Asking for clarification	c. Let me just recap what's been said so far
54.Agreeing	d. Have you considered…?
55. Disagreeing	e. It's something that (covers the window). You can (pull it).
56.Expressing opinions	f. Hm, let me think, about that for a moment
57. Summarizing	g. I can go along with that.
58. Asking for someone's opinion	h. I see
59. Explaining what something is	i. That is very kind of you
60.Saying thanks	j. You must be joking!

APPENDIX 2

TEST 2

1. Match the terms with their definitions.

1	Analog signal	**a**	the word used to describe the science of transmitting voice over a telecommunications network
2	Digital television (DTV)	**b**	the use of a wireless phone outside of the "home" service area defined by a service provider. Higher per-minute rates are usually charged for calls made or received while roaming.
3	Satellite	**c**	refers to messages sent over the Internet.It can be sent and received via newer types of wireless phones, but you generally need to have a specific e-mail account.
4	Service provider	**d**	an improved television system which provides approximately twice the vertical and horizontal resolution of existing television standards. It also provides audio quality approaching that of compact discs.
5	Telephony	**e**	a person who facilitates telephone conversation between text telephone users, users of sign language or individuals with speech disabilities through a Telecommunications Relay Service (TRS). This service allows a person with hearing or speech disabilities to communicate with anyone else via telephone at no additional cost.
6	Roaming	**f**	a signaling method that uses continuous changes in the amplitude or frequency of a radio transmission to convey information.

7	High Definition Television (HDTV)	**g**	a radio relay station that orbits the earth. A complete system also includes earth stations that communicate with each other. They are used to transmit telephone, television and data signals originated by common carriers, broadcasters and distributors of cable TV program material.
8	E-mail	**h**	a telecommunications holder that owns circuit switching equipment.
9	Communications assistant	**i**	a new technology for transmitting and receiving broadcast television signals and provides clearer resolution and improved sound quality.
10	Tariff	**j**	the documents filed by a carrier describing their services and the payments to be charged for such services.

1	2	3	4	5	6	7	8	9	10

2. Cycle the appropriate term to complete the sentences.

11. Pages on the web are connected by:

a.	passwords
b.	hypertext or hyperlinks
c.	browsers
d.	parity

12. The two parts of an e-mail address are the:

a.	user name and domain name
b	search engine and browser
c.	phone and modem
d	city and state

13. A popular and easy to use search engine is called:

a.	e-mail
b.	chat rooms
c.	FTP
d.	Yahoo

14. You can get the latest information on almost any topic on the Internet because it contains:

a.	the best CD-ROM in the world
b.	the latest stock market quotes
c.	the largest database of any type of information
d.	the writings of the most intelligent people in the world

15. The results generated by a search engine provide:

a	a bibliography
b.	e-mail
c.	links to be explored on the Internet
d.	a database

16. E-mail is delivered by which of the following?

a.	postal carriers
b.	message services
c.	computers
d.	FAX machines

17. Which term refers to the speed at which information is telecomputed?

a.	megabyte load
b.	interface speed
c.	cycles per second
d.	baud rate

18. Which pair of terms shows how e-mail and bulletin boards are related to each other?

a.	letters and announcements
b.	ground and air mail
c.	letters and packages
d.	mail and fax

19. All web sites on the Internet begin with a/an:

a.	browser
b.	homepage
c.	link
d.	network

20.The first step to establishing a connection with a telecommunication service is:

a.	log off
b.	log on
c.	offline
d.	online

3. For sentences (21-30) choose the correct answer (A, B, C or D)

21. The first true telecommunication systems using electrical signals to carry messages _____ in the 1840s with machine telegraphy.

22. Samuel Morse first developed the telegraph in 1832 but it was not _____the mid-1840s that the system was put into practical use- sending

coded electrical massages (Morse Code) along the wires.
23. The next major step forward _____in 1878 with the invention of the telephone by Bell.
24. This enabled speech _____as electrical signals along wires and revolutionized personal communications.
25. In 1886, Hertz verified experimentally that electrical energy _____ and thus proved the existence of electromagnetic waves.
26. This _____ the basis for all radio and TV broadcasting.
27. In 1901, Marconi _____long-distance telegraph communication by transmitting between England and Canada.
28. This overcame the problem of_____ round the earth from one side of the Atlantic to another.
29. With the discoveries of the diode and thermionic valve, advances _____in both receiver and transmitter design with an associated impact in telegraphy, telephony, and civil and military communications.
30.Radio broadcasting soon followed, with powerful transmitters _____to communicate over wide areas.

21	A	has started	B	started	C	starts	D	has been started
22	A	after	B	before	C	by	D	until
23	A	came	B	come	C	have come	D	coming
24	A	being transported	B	to transport	C	to be transported	D	can be transported
25	A	could be radiated	B	can be radiated	C	must be radiated	D	have to be radiated
26	A	provide	B	have been provided	C	must be provided	D	provided
27	A	establish	B	established	C	establishing	D	being established
a	A	transmitting	B	transmittion	C	transmitted	D	being transmitted
29	A	was made	B	have been made	C	were made	D	has been made
30	A	serving	B	served	C	serve	D	serves

4. Read the text and decide if the following sentences are true or false

Telecommunications is a fast-paced branch with major changes occurring almost daily. It is also young – mainly a product of the twentieth century. Although the pervasive influence of telecommunications has occurred in a short space of time, its intensity compensates for its youth. The study of radio and television at the university level began in the 1960s. At that time there were two media – radio and television, and together they were called broadcasting. Then in the mid-1970s a number of other media came to the fore to challenge radio and TV. They were CATV (cable TV), VCRs (videocassette recorders), DBS (direct broadcast satellite), MMDS (multichannel multipoint distribution service, sometimes referred to as wireless cable), SMATV (satellite master antenna television), STV (subscription television), and LPTV (low-power television). The word broadcasting no longer seemed to apply because that word impelled a wide dissemination of information through airwaves. Many of these other media were sending information through wires, and cable TV was even going around touting its narrowcasting because its programs were intended for specific audience groups. In the 1980s when the new media weren't so new anymore, they began being referred to as developing technologies, but some of them didn't develop very well. In fact, a number of them just plain died. Generally, the term electronic media was used to describe broadcasting and the newer competitive forces, but sometimes the word telecommunications was used to label the entire group. The whole concept of television as a form of mass communication began to change. Prior to the 1980s, most people watched the same programming at the same relative time.

With the introduction of a variety of delivery systems, TV became a more fractionalized medium that appealed to smaller groups of consumers. People could tape programs off air to watch whenever they wanted. In the 1990s, the field of study broadened even more. Telephone companies started to enter areas that had traditionally been reserved for broadcasters and cablecasters. The once lowly phone also allied itself with the computer, spawning a whole new array of interactive services. An information highway started to emerge as interlinked computers were used to exchange electronic mail and other information stored in computer data banks Then along came the computer and the

modem. The modem enabled-data generated by the computer to be sent over phone wires to another computer. Some of the information being transmitted over this computer-telephone system was not private, but was intended for anyone in the population who wanted it. It included news, stock market quotes, sports, and other information traditionally provided by radio and TV, as well as newspapers and magazines. It also included new services such as electronic mail and at-home banking that had not previously been part of the electronic media structure. The word telecommunications was somewhat taken over by the telephone industry to encompass both the old telephone services and all the new data transmission and other services the computer enabled the telephone to undertake. One result of all the changes is that the consumer is becoming more empowered. Armed with the TV set remote control, people can easily switch channels. The passive masses are becoming interactive.

31. Changes in telecommunications are occurring almost daily.
32. Telecommunications are rather old – a product of the 17th century.
33. Telecommunications consist of two media – radio and television.
34. The word "broadcasting" implies a wide dissemination of information.
35. Information can be sent only through the airwaves.
36. Information is not stored in computer databanks.
37. The TV set remote control helps people relax.
38. One can use interchangeably the words "telecommunications" and "electronic media".
39. In 1990th telephone companies began to push cablecasters out of their markets.
40. A series of interactive services was the result of combining phone with a computer

5. Read the text. Choose from (A-J) the one which best fits each space (41-50).

41. One of the very latest developments is the optical fiber cable_____ which can be used to convey signal information by light pulses.
42. _____with extremely low loss at low cost has now been developed with very high data – carrying capacity.
43. Several thousands of telephone messages _____by a single fiber.

44. Perhaps the greatest change which has occurred in the last thirty years is that _____
45. The very first_____, telegraphy, was and still is a digital system.
46. However, _____all started as analogue systems.
47. Today, the general trend is_____, and even now, the vast majority of telecommunications systems are digital.
48. Problems of _____can be combated much more successfully in a digital system.
49. The advances in microelectronics and the merging of communications with computers have led naturally to the digital transmission mode with its advantages of computer control, _____, and intelligent terminals.
50._____ for vast quantities of information transmission and processing at very high speed can only be reliably catered for by using digital technics. In fact the most rapidly growing field is almost certainly in data communications employing high-speed digital techniques

A *telephony, radio, and TV*
B *can be carried down*
C *commercially employed telecommunication system*
D *strongly towards the digital*
E *optical fiber cable*
F *automatic error checking of signals, excellent memory storage facilities for data*
G *from analogue to digital methods of information transmission.*
H *a tiny glass fiber*
I *the market need*
J *noise and interference*

6. Match an expression in A with one in B.

51. Starting a conversation	a. I'd love to, but …
52. Asking for direction	b. Would you mind (doing smth) …
53.Giving directions	c. How about (a cup of tea) ?
54. Making a request	d. Do you mind if I (do smth) ?
55. Accepting suggestions	e. Do you think I should…

56. Rejecting suggestions	f. Can I talk to you for a moment?
57. Asking for help	g. Sounds good to me!
58. Offering something	h. Excuse me, How do I get to ….
59. Asking for permission	i. Do you think you could possibly …
60. Asking for advice	j. Keep going until you get to …

LITERATURE

1. Zayarieva, D. Technical English [Text] / D. Zayarieva, S. Atanasova, D. Galabova, S. Verguilova, S. Nikolov. – Bulgaria, Gabrovo: Alma mater international, 2001. – 216 p. 2. Stoyneshka, I., English for Computing [Text].

2. Stoyneshka, I., Mihailova, D. – Bulgaria, Gabrovo: Alma mater international, 2001. – 116 p.

3. Lynne Schafer Gross. Telecommunications. An Introduction to Electronic Media [Text] / L. Gross. – New York : Mc Graw Hill, 1997. – 443 p.

4. Professional English in Use For Computers and the Internet [Text] / S. R. Esteras, E. M. Fabre. – New York : Cambridge University Press, 2009. – 117 p.

5. Demetriades, Dinos. IT Workshop [Text] / D. Demetriades. – Oxford University Press, 2005. – 40 p.

CONTENTS

NOTES

Навчальне видання

ЗАДОРОЖНА Тетяна Павлівна
ДАВИДЕНКО Олена Борисівна

AN INTRODUCTION TO INFORMATION AND COMMUNICATION TECHNOLOGIES

Методичні вказівки з англійської мови
для студентів I–II курсу
спеціальності 172 "Телекомунікації та радіотехніка"

(*англійською та українською мовами*)

Верстка *Н. Ковальчук*
Коректор *М. О. Паненко*

Підписано до друку 24.06.2020 р. Формат 60x84/16.
Папір офсетний. Гарнітура Times. Цифровий друк.
Ум. друк. арк. 3,72. Наклад 100. Замовлення № 2207-32.
Ціна договірна. Віддруковано з готового оригінал-макета.

Видавець і виготівник –
Національний університет кораблебудування імені адмірала Макарова
просп. Героїв України, 9, м. Миколаїв, 54025
E-mail: publishing@nuos.mk.ua
Свідоцтво суб'єкта видавничої справи
ДК № 6402 від 19.09.2018 р.