

English for medical students

Alla Kondratiuk

Yuliia Ostraus

**Learn English vocabulary for medicine
and develop communicative skills**

Human Body

1. Pay attention to the meaning of the following words.

conception	[kən'sepʃ(ə)n]	запліднення
conscious	['kɒn(t)ʃəs]	свідомий
digestive	[daɪ'dʒestɪv]	травний
esophagus	[i'sɒfəgəs]	стравохід
excess	[ɪk'ses]	надлишок, зайвий
groove	[gru:v]	борозна
hammer	['hæmə]	молоточок
integumentary	[ɪn,teɡju'ment(ə)rɪ]	покривний
node	[nəʊd]	вузол
perspiration	[,pɜ:sp(ə)'reɪʃ(ə)n]	потовиділення
rectum	['rektəm]	пряма кишка
secretion	[sɪ'kri:ʃ(ə)n]	секреція
spleen	[spli:n]	селезінка
storage	['stɔ:ridʒ]	зберігання
tendon	['tendən]	сухожилля
to absorb	[əb'zɔ:b]	поглинати
to allow	[ə'lau]	дозволяти
to eliminate	[ɪ'limineɪt]	виводити, позбавлятися
urea	[juə'ri:ə]	сечовина
ureter	[juə'ri:tə]	сечовід
voluntary	['vɒlənt(ə)rɪ]	довільний
waste products	[weɪst]	відходи, продукти життєдіяльності

2. Read the text.

Our bodies consist of a number of biological systems that carry out specific functions necessary for everyday living.

The job of the circulatory system is to move blood, nutrients, oxygen, carbon dioxide, and hormones, around the body. It consists of the heart, blood, blood vessels, arteries and veins.

The digestive system consists of a series of connected organs that together, allow the body to break down and absorb food, and remove waste. It includes the mouth, esophagus, stomach, small intestine, large intestine, rectum, and anus. The liver and pancreas also play a role in the digestive system because they produce digestive juices.

The endocrine system consists of eight major glands that secrete hormones into the blood. These hormones, in turn, travel to different tissues and regulate various bodily functions, such as metabolism, growth and sexual function.

The immune system is the body's defense against bacteria, viruses and other pathogens that may be harmful. It includes lymph nodes, the spleen, bone marrow, lymphocytes (including B-cells and T-cells), the thymus and leukocytes, which are white blood cells.

The lymphatic system includes lymph nodes, lymph ducts and lymph vessels, and also plays a role in the body's defenses. Its main job is to make and move lymph, a clear fluid that contains white blood cells, which help the body fight infection. The lymphatic system also removes excess lymph fluid from bodily tissues, and returns it to the blood.

The nervous system controls both voluntary actions (like conscious movement) and involuntary actions (like breathing), and sends signals to different parts of the body. The central nervous system includes the brain and spinal cord. The peripheral nervous system consists of nerves that connect every other part of the body to the central nervous system.

The body's muscular system consists of about 650 muscles that aid in movement, blood flow and other bodily functions. There are three types of muscles: skeletal muscle which is connected to bones and helps with voluntary movement, smooth muscle which is found inside organs and helps to move substances through organs, and cardiac muscle which is found in the heart and helps to pump blood.

The reproductive system allows humans to reproduce. The male reproductive system includes the penis and the testes, which produce sperm. The female reproductive system consists of the vagina, the uterus and the ovaries, which produce eggs. During conception, a sperm cell fuses with an egg cell, which creates a fertilized egg that implants and grows in the uterus.

Our bodies are supported by the skeletal system, which consists of 206 bones that are connected by tendons, ligaments and cartilages. The skeleton not only helps us move, but it's also involved in the production of blood cells and the storage of calcium. The teeth are also part of the skeletal system, but they aren't considered bones.

The respiratory system allows us to take in vital oxygen and expel carbon dioxide in a process we call breathing. It consists mainly of the trachea, the diaphragm and the lungs.

The urinary system helps eliminate a waste product called urea from the body, which is produced when certain foods are broken down. The whole system includes two kidneys, two

ureters, the bladder, two sphincter muscles and the urethra. Urine produced by the kidneys travels down the ureters to the bladder, and exits the body through the urethra.

The skin, or integumentary system, is the body's largest organ. It protects us from the outside world, and is our first defense against bacteria, viruses and other pathogens. Our skin also helps regulate body temperature and eliminate waste through perspiration. In addition to skin, the integumentary system includes hair and nails.

Humans have five vital organs that are essential for survival. These are the brain, heart, kidneys, liver, and lungs. The human brain is the body's control center, receiving and sending signals to other organs through the nervous system and through secreted hormones. It is responsible for our thoughts, feelings, memory storage and general perception of the world. The human heart is a responsible for pumping blood throughout our body.

The job of the kidneys is to remove waste and extra fluid from the blood. The kidneys take urea out of the blood and combine it with water and other substances to make urine. The liver has many functions, including detoxifying of harmful chemicals, breakdown of drugs, filtering of blood, and secretion of bile and production of blood-clotting proteins. The lungs are responsible for removing oxygen from the air we breathe and transferring it to our blood where it can be sent to our cells. The lungs also remove carbon dioxide, which we exhale.

3. Find in the text what:

- is the body's defense against bacteria - _____
- helps regulate body temperature - _____
- is responsible for removing oxygen from the air - _____
- includes lymph nodes, the spleen, bone marrow - _____
- consists of the heart and blood - _____
- allows humans to reproduce - _____
- sends signals to different parts of the body - _____

4. Match the two halves of each sentence.

- | | |
|--|--------------------------------|
| 1. The respiratory system allows us | a. take urea out of the blood. |
| 2. Our skin also helps regulate | b. body temperature. |
| 3. The kidneys | c. allows humans to reproduce. |
| 4. The reproductive system | d. to take in vital oxygen. |
| 5. The central nervous system includes | e. the brain and spinal cord. |

5. Find words in the text which mean the following:

1. A red liquid that flows inside your body, which you can see if you cut yourself - _____
2. A process by which certain liquid substances are produced by parts of plants or from the bodies of people or animals - _____
3. A substance found in food and drink such as meat, eggs, and milk - _____
4. An organ inside your head that controls your body's activities and enables you to think and to feel things such as heat and pain - _____
5. The smallest part of an animal or plant that is able to function - _____

6. For questions 1-8, read the text below and decide which answer (a, b or c) best fits each gap.

These facts will teach you interesting bits of information about the physical make-up of the human brain.

1. The 1 _____ of the human brain is about 1375 g.
2. The cerebrum is the 2 _____ part of the brain and makes up 85% of the brain's weight.
3. Your skin weighs 3 _____ as much as your brain.
4. The brain's gray matter is made up of 4 _____, which gather and transmit signals.
5. The white matter is made up of dendrites and axons, which create the network by which neurons send their signals.
6. Your brain is 60% 5 _____ matter and 40% 6 _____ matter.
7. The brain is made up of about 7 _____ water.
8. Your brain consists of about 100 billion neurons.
9. There are anywhere from 1,000 to 10,000 synapses for each neuron.
10. There are no pain receptors in the brain, so the brain can feel no pain.
11. The human brain is the 8 _____ organ in the body and may consist of at least 60% fat.

- | | | | |
|----|------------|-------------|----------------|
| 1. | a. size | b. length | c. weight |
| 2. | a. largest | b. smallest | c. tiniest |
| 3. | a. twice | b. once | c. three times |
| 4. | a. cells | b. organs | c. neurons |
| 5. | a. red | b. white | c. gray |
| 6. | a. white | b. gray | c. pink |
| 7. | a. 75% | b. 100% | c. 25% |
| 8. | a. fattest | b. tallest | c. smartest |

7. Complete the following sentences by choosing the most suitable words. Use only one word in each gap.

What's the smallest muscle in the human body?

The stapedius, in your 1 _____ ear, measures about 1mm in size. Connected to the stapes bone, it contracts to pull back the stapes and help 2 _____ your inner ear from loud noises. The stapedius also contracts to keep your own 3 _____ from sounding too loud in your head.

What's the smallest bone in the human body?

Conveniently, that would be the 4 _____. It is one of three tiny bones in the middle ear that convey sound from the 5 _____ ear to the inner ear. Collectively called the ossicles, these bones are individually known as the malleus, incus, and stapes. Those are Latin words for the shapes the bones resemble: a 6 _____, anvil, and stirrup.

What's the smallest organ in the human body?

You'll find the pineal gland near the center of the brain, in a 7 _____ between the hemispheres. It's not an organ like those in the 8 _____ cavity. It's the human body's smallest endocrine gland, and it produces 9 _____, a hormone (derived from serotonin) that affects how we sleep, wake up, and 10 _____ to seasonal changes. It's called pineal because it's 11 _____ like a little pinecone.

Communicative skills

8. Read advice which helps doctors to communicate effectively with patients.

First impression. The first impressions about people often turn into long-term reputations. Within the first few seconds of meeting a new person, an opinion is formed based on the appearance, mannerisms and body language. These opinions are often difficult to overcome or undo, making the first encounter extremely significant. Accordingly, the first impression a doctor and a patient make of one another is the most important one. In those first few minutes in the room with the doctor, the patient will decide if he/she can feel comfortable sharing information with the doctor. In order to avoid building any sort of a barrier in interaction with the patient, the doctor should implement the following simple strategies during the initial doctor-patient encounter.

- ✓ Review the patient's medical record before you enter the exam room.

- ✓ Have an open, friendly expression; smile.
- ✓ Greet the patient by name before introducing yourself: “Good morning, Ms. Jones; I’m Susan Smith.”
- ✓ Greet anyone accompanying the patient in a similar manner.
- ✓ Introduce any colleagues who may accompany you.
- ✓ Exercise caution in touching the patient. All touch should be conscious and by mutual agreement between provider and patient. Ask permission to conduct an exam, particularly if it is a first visit.
- ✓ Make eye contact; look at the patient directly. An exception to this rule occurs in cases where the patient’s culture may view this practice as rude or otherwise inappropriate. For example, some Asian cultures are among those who may find direct eye contact offensive.
- ✓ Sit at eye level.
- ✓ Use facial expressions in response to the patient’s comments as a way of letting the patient know you are listening attentively.
- ✓ Face the patient while reading the patient's medical record or speaking.
- ✓ Begin the therapeutic contact when the patient is fully clothed.

Remember that most patients will be nervous and uncomfortable meeting a doctor for the first time. But the doctor's job is to try in every way possible to relax the patient and make him/her comfortable and make the patient feel that he will be helped.

Notes:

to overcome- побороти, подолати
 encounter – зустріч
 mutual agreement – взаємна згода
 offensive – образливий

9. Decide what category each question refers to: a. personal details; b. family history; c. social history.

1. Do you have any brothers or sisters? _____
2. Do you have any children? _____
3. Do you work? _____
4. Do you have any problems at work? _____
5. Does anyone in your family have a serious illness? _____
6. What is your full name? _____

7. Do you have a partner? _____
8. What is your home address and telephone number? _____
9. What is your date of birth? _____

10. Read the patient's answers and write the questions a doctor should ask. Use the questions in ex. 9.

Doctor: 1 _____

Patient: John Smith.

Doctor: 2 _____

Patient: 20.05.1978.

Doctor: 3 _____

Patient: Yes, I do. I am a manager.

Doctor: 4 _____

Patient: 34 Elmore Street, London.

Doctor: 5 _____

Patient: 020 786 7676

Doctor: 6 _____

Patient: Yes, I've got 2 children.

11. Make up a dialogue between a doctor and a patient.

Patient 1. You are Mrs. / Mr. Lucy/Sam Johnes. You were born on the 24.08.71. So, you are 45 years old and you are a teacher. Your home address is 68 Monktue Avenue, Manchester, your tel. number is 020071117893. You have 1 child, but you got divorced.

Patient 2. You are Mrs. / Mr. Fred / Olga Becks. You were born on the 3.10.79. So, you are 37 years old and you are a bank manager. Your home address is 345 Adelaide Drive, Glasgow, your tel. number is 020072345678. You are married and have 3 children. You live with your parents.

Patient 3. You are Mrs. / Mr. Graham/ Jeanette Green. You were born on the 5.12.86. So, you are 30 years old and you are an accountant. Your home address is 1 Queen Street, London, your tel. number is 020 567894 456. You are married and have 2 children. You live with your grandparents and husband.

Patient 4. You are Mrs. / Mr. Lily/Martin Friedman. You were born on the 16.09.83. You are a bank manager. Your home address is 23 Wringle Street, Glasgow, your tel. number is 020 789654358. You are married but don't have children. You live with your parents.

Cell

1. Pay attention to the meaning of the following words.

bumpy	['bʌmpɪ]	нерівний
cell membrane	['membreɪn]	клітинна мембрана
organelle	[,ɔ:gə'neɪl]	органела
centriole	['sentriəʊl]	центріоль
chromatin	['krəʊmətɪn]	хроматин
chromosome	['krəʊməsəʊm]	хромосома
cytoplasm	['saɪtəplæz(ə)m]	цитоплазма
degradation	[degrə'deɪʃ(ə)n]	деструкція
endoplasmic reticulum	[,endəʊ'plæzmɪk ri'tɪkjʊləm]	ендоплазматичний ретикулум
Golgi apparatus	['gɒldʒi æpə'reɪtəs]	комплекс Гольджі
homeostasis	[,həʊmiə'steɪsɪs]	гомеостаз
lysosome	['laɪsəsəʊm]	лізосома
mitochondrion	[maɪtəʊ'kɒndrɪən]	мітохондрія
nucleolus	[nju:'kli:ələs]	ядерце
nucleus	['nju:kliəs]	ядро
peroxisome	[pə'rɒksɪsəʊm]	пероксисома
phospholipid	[,fɒsfə(ʊ)'lɪpɪd]	фосфоліпід
ribosome	['raɪbəsəʊm]	рибосома
rough	[rʌf]	жорсткий (гранулярний)
smooth	[smu:ð]	гладкий (агранулярний)
selectively permeable	['pɜ:miəb(ə)l]	вибірково проникний
sheet	[ʃi:t]	шар
specialized cell	['speʃəlaɪzd]	спеціалізована клітина
stack	[stæk]	скупчення, ряд
thread	[θred]	нитка
to keep out	[ki:p aʊt]	не впускати
trait	[treɪt]	характерна риса, особливість
vacuole	['vækjuəʊl]	вакуоля

2. Read the text.

The human body is composed of countless millions of units called cells. In a human there are many different types of cells, with different structures. They are specialized, so that they can carry out particular functions in the body. In addition to varying by function, cells also differ in shapes and sizes.

Different cells perform specific functions, however, in order for the body to be stable and function normally - also known as a state of homeostasis - cells must work together. Despite all the differences, there are basic features that are the same in most cells: a cell membrane, a nucleus, cytoplasm and cell organelles. The one exception is mature red blood cells - they have no nuclei.

The cell membrane is the outer part of the cell and is composed of phospholipids, cholesterol and proteins. This membrane is permeable, which means that certain substances and fluids are allowed to enter and exit. The phospholipids allow other lipids or substances that are soluble in lipids to leave and enter the cell membrane through a process called diffusion. But the fluid movement into and out of the membrane is controlled by cholesterol in the cell, making the cell stable. It's important to note that while certain substances are allowed into the cell through its membrane, the membrane is selectively permeable. Part of the job of the membrane is to keep out dangerous substances that will harm the cell, and therefore the body.

The nucleus protected by the two-layered nuclear membrane is located within the cytoplasm. Each nucleus has at least one nucleolus, as well as the cell's chromosomes. The nucleolus is made up of three substances: DNA, RNA and protein. Chromosomes are made up of DNA and protein. There are 46 chromosomes in a nucleus, and they are in the form of long threads called chromatin. DNA is the body's genetic code and the DNA in a nucleus contain all of the body's genetic traits.

Cellular chemical reactions take place in the cytoplasm, which is the watery liquid between the cell membrane and nucleus. Cytoplasm is a mixture of minerals, gases, and other organic molecules as well as cell organelles. Each of these organelles has a specific function in order to enable cells to function.

One type of cell organelle is the ribosomes, made up of protein and ribosomal RNA. Ribosomes are the location of protein synthesis. The Golgi apparatus is also present in the cytoplasm. These are flat, circular membranes arranged in a stack. It prepares and delivers proteins for secretion from cell or use in the cell.

In addition to the ribosomes and the Golgi apparatus, another cell organelle is the mitochondria, which are oval in shape. The mitochondria have a double membrane, with the inner membrane containing folds. Mitochondria are where cell respiration takes place, and the location of energy production. Another type of organelle is lysosomes, which contain digestive enzymes and

help white blood cells to destroy bacteria. These lysosomes also digest dead cells and damaged cellular parts. Centrioles are located immediately outside the nucleus. They are rod like structures which are very important in cellular division.

Endoplasmic reticulum is a complex internal membrane system of flattened sheets, sacs and tubes. It plays an important role in making proteins and is also involved in metabolism of fats, and the production of various materials. Smooth endoplasmic reticulum, without ribosomes, is responsible for various activities, including the synthesis of lipids and hormones, lipid degradation, and calcium ion storage. Rough endoplasmic reticulum has characteristic bumpy appearance due to the numerous ribosomes coating it. It is the site where proteins not destined for the cytoplasm are synthesized.

Peroxisomes are the organelles in which oxygen is used to oxidize substances, breaking down lipids and detoxifying certain chemicals. They can break down potentially harmful substances. Vacuoles are spaces in the cytoplasm that serve to carry materials to the cell membrane for discharge to the outside of the cell.

3. Find in the text what:

- basic parts are the same in most cells - _____
- organelles are present in the cell - _____
- substances compose the cell membrane - _____
- substances compose the nucleolus - _____
- substances compose chromosomes - _____
- substances and structures the cytoplasm contains - _____
- organelles are responsible for cell respiration - _____

4. Match the following cell parts or organelles and their functions.

vacuole, mitochondria, cytoplasm, lysosomes, cell membrane, peroxisomes, nucleus, ribosomes

- a) A thin skin around the cell that lets nutrients and water in and out.
- b) The power plants that provide energy for the cell to do its work.
- c) Tiny protein-making factories. They know which proteins to make by reading the genetic instructions.
- d) Control center containing our genetic instructions in the form of genes and chromosomes.
- e) Small sacs that contain acids and other chemicals that destroy bacteria, viruses, dead cells.

- f) Jelly-like fluid that surrounds the organelles inside the cell.
- g) They contain enzymes which function to detoxify drugs, alcohol, and other potential toxins.
- h) An organelle which stores food, water, wastes and building materials.

5. Find words in the text that mean:

- to permit _____
- to fulfill _____
- penetrable _____
- solvable _____
- characteristic _____
- breath _____
- secretion _____

6. Complete the following sentences by choosing the correct word from the frame below.

allows, waste, selective, environment, movement, nutrients, separates, permeability

The boundary of the cell, called the plasma membrane, 1_____internal metabolic events from the external 2_____and controls the 3_____of materials into and out of the cell. This membrane is very 4_____ about what it allows to pass through. This characteristic is called "selective 5_____. For example, it 6_____oxygen and 7_____ to enter the cell while keeping toxins and waste products out.

7. Read the text and think of the word which best fits each gap.

The 1_____ , which surrounds the cell and keeps it intact, regulates what enters and exits a cell. The cytoplasm is the portion of the cell between the 2_____ and the 3_____. It is a jelly-like medium that contains water and various 4_____which are small, usually membranous structures each having a specific function. For example, one type of 5_____transports substances, and another type produces energy used by the cell. The 6_____is a large, centrally located structure. It contains the chromosomes and is the control center of the cell. The 7_____is a region inside the nucleus. Every human cell has a plasma membrane, a 8_____, and

cytoplasm. Some exceptions to this rule exist. A mature 9 _____ eliminates its nucleus once development is complete. Cells of skeletal muscle, liver, and other tissues may have up to 50 10 _____.

Communicative skills

8. Read advice which helps doctors to communicate effectively with patients.

Interview. The interview should start with the patient's explanation of the chief complaint and the history of present illness. Note how the doctor starts the interview:

- What seems to be a problem?
- What troubles you?
- What do you complain of?
- What's brought you along today?

In the course of the conversation the doctor can question the patient by using open-ended questions which will allow the doctor to obtain the most information about the patient's problem. Open-ended question can not be answered with just one or two words so it encourages the patient to explain more. It allows to learn more than a "yes" or "no" answer. Examples of open-ended questions are:

- How would you describe the pain?
- How often does this occur?
- Can you tell me more about these attacks?

Open-ended questions can be followed by more direct close-ended questions. They should be used only if the open-ended questions do not provide the doctor with the necessary information. Close-ended questions can be answered with just one or two words. They are used to find out specific pieces of information. Examples of close-ended questions are:

- Have you experienced this kind of pain before?
- Do you feel the pain anywhere else?

When closed-ended questions are required, the doctor should try to alternate them with open-ended ones.

Notes:

chief complaint - основні скарги хворого (при першому зверненні до лікаря)

history of present illness – історія даної хвороби

open-ended question – відкрите питання

- close-ended question – закриті питання
- to obtain the information – отримувати інформацію
- to provide the information – надавати інформацію
- to find out – дізнатися
- to alternate – чергувати(ся), замінити(ся)

9. Look at these questions and decide whether they are open-ended or close-ended ones. Write O for open-ended question and C for close-ended one.

1. Does anything make the pain worse? _____
2. Have you noticed any blood in the sputum? _____
3. What medicines did you take? _____
4. Does the pain spread anywhere else? _____
5. When did the pain start? _____
6. Do you smoke? _____
7. Where does it hurt? _____
8. What kind of pain is it? _____
9. Do you have to get up at night? _____
10. Have you had diarrhea? _____

10. Read the patient's answers and write the questions a doctor should ask.

DOCTOR: 1 _____

PATIENT: I have pain in the chest.

DOCTOR: 2 _____

PATIENT: Well, right across my chest.

DOCTOR: 3 _____

PATIENT: It's like a heavy weight pressing on my chest, and it goes up into my neck and into my left shoulder and down the left arm.

DOCTOR: 4 _____

PATIENT: Well, I suppose about six months ago.

DOCTOR: 5 _____

PATIENT: Ooh, about ten minutes.

DOCTOR: 6 _____

PATIENT: If I stop or rest for a bit it goes away.

Tissues

1. Pay attention to the meaning of the following words.

absorption	[əb'zɔ:pʃ(ə)n]	всмоктування, поглинання
abundant	[ə'bʌndənt]	розповсюджений, поширений
bacteria	[bæk'tɪəriə]	бактерія
cubic	['kju:bɪk]	кубічний
dense	[den(t)s]	щільний
elongated	['i:lŋgeɪtɪd]	подовжений
fibrous	['faɪbrəs]	волокнистий
internal	[ɪn'tɜ:n(ə)l]	внутрішній
involuntary	[ɪn'vɔl(ə)nt(ə)rɪ]	мимовільний
lining	['laɪnɪŋ]	внутрішня оболонка
loose	[lu:s]	вільний
muscular	['mʌskjʊlə]	м'язовий
smooth	[smu:ð]	гладкий
stimuli	['stɪmjʊlaɪ]	стимули
string-like	[strɪŋ]	струновидний
to conduct	['kɒndʌkt]	проводити
to consider	[kən'sɪdə]	вважати

2. Read the text.

A tissue is a group of cells that have a similar shape and function. Different types of tissues can be found in different organs. In humans, there are four basic types of tissue: epithelial, connective, muscular, and nervous tissue. There may be various sub-tissues within each of the primary tissues. The study of tissues is a field known as histology. Tissues make up our bodies; everything from our bones to organs like our heart and brain. Even blood is considered to be a tissue.

Epithelial tissue covers the body surface and forms the lining for most internal cavities. The major function of epithelial tissue includes protection, secretion, absorption and filtration. The skin is an organ made up of epithelial tissue which protects the body from dirt, dust, bacteria and other microbes that may be harmful. Cells of the epithelial tissue have different shapes. Cells can be thin, flat, cubic or elongated.

Connective tissue is the most abundant and the most widely distributed of the tissues. Connective tissues perform a variety of functions including support and protection. The following tissues are found in the human body, ordinary loose connective tissue, fat tissue, dense fibrous tissue, cartilage, bone, blood, and lymph, which are all considered connective tissue.

There are three types of muscle tissue: skeletal, smooth, and cardiac. Skeletal muscle is a voluntary type of muscle tissue that is used in the contraction of skeletal parts. Smooth muscle is found in the walls of internal organs and blood vessels. It is an involuntary type. The cardiac muscle is found only in the walls of the heart and is involuntary in nature. Nervous tissue is composed of specialized cells which not only receive stimuli but also conduct impulses to and from all parts of the body. Nerve cells or neurons are long and string-like.

In tissues the simplest combination is called a membrane, or a sheet of tissues which covers or lines the body surface or divides organs into parts. Examples include the mucous membrane which lines body cavities. Tissues combine to form organs. An organ is a part of the body which performs a definite function. The final units of organization in the body are called systems. A system is a group of organs each of which contributes its share to the function of the body as a whole.

3. Find in the text which tissue

- performs support and protection _____
- conducts impulses to and from all parts of the body _____
- has three types : skeletal, smooth, and cardiac _____
- forms the lining for most internal cavities _____
- is the most widely spread of the tissues _____
- performs absorption and filtration _____

4. Match the words with their definitions.

- | | |
|-----------|---|
| skin | a. a thin layer of tissue that covers a surface, lines a cavity or divides an organ |
| tissue | b. the smallest unit of living structure |
| membrane | c. a hollow or space within the body or one of its organs |
| cell | d. a group or layer of similarly specialized cells |
| histology | e. an independent body part that performs a special function |
| cavity | f. the science concerned with the minute structure of cells and tissues |
| organ | g. the largest organ of the body |

5. Choose the correct option in *italics* in these sentences.

1. A tissue is a group of *cells / membranes* that have a similar shape and function.
2. There are *four / five* basic types of tissues.
3. Connective tissue is the most *poorly/ widely* distributed of the tissues.
4. The skin is an organ made up of *connective / epithelial* tissue.
5. The cardiac muscle is *involuntary / voluntary* in nature.
6. Tissues combine to form *cells / organs*.
7. A system is a group of *limbs /organs*.

6. For questions 1-7, read the text below and decide which answer (a, b or c) best fits each gap.

Most epithelial tissues are essentially large 1_____ of cells covering all the surfaces of the body exposed to the outside world and lining the outside of organs. Epithelium also forms much of the 2_____ tissue of the body. Skin is not the only area of the body 3_____ to the outside. Other areas include the airways, the digestive tract, as well as the urinary and reproductive systems, all of which are 4_____by an epithelium. Hollow organs and body 5_____ that do not connect to the exterior of the body, which include blood vessels and serous membranes, are lined by endothelium, which is a type of epithelium.

Epithelial tissues are nearly completely 6_____. For instance, no blood vessels cross the basement membrane to enter the tissue, and 7_____ must come by diffusion or absorption from underlying tissues or the surface. Many epithelial tissues are capable of rapidly 8_____ damaged and dead cells. Sloughing off of damaged or dead cells is a 9_____ of surface epithelium and allows our airways and digestive tracts to rapidly replace damaged cells with new cells.

- | | | |
|-----------------------|--------------|---------------|
| 1. a. groups | b. sheets | c. bands |
| 2. a. muscular | b. adipose | c. glandular |
| 3. a. opened | b. exposed | c. found |
| 4. a. lined | b. formed | c. divided |
| 5. a. tissues | b. cells | c. cavities |
| 6. a. stratified | b. avascular | c. columnar |
| 7. a. bacteria | b. nutrients | c. dust |
| 8. a. forming | b. producing | c. replacing |
| 9. a. characteristics | b. units | c. appearance |

7. Complete the following sentences by choosing the most suitable words.

All living cells have the ability to 1_____ to stimuli. Nervous tissue is specialized to react to stimuli and to conduct impulses to 2_____ organs in the body. Nerve tissue is made up of specialized nerve cells called 3_____. They are easily stimulated and transmit 4_____ very rapidly. A nerve is made up of many nerve cells, fibers, bound together by connective tissue. A sheath of dense connective tissue, the epineurium, surrounds the nerve. This sheath penetrates the nerve to form the perineurium which surrounds bundles of nerve fibers. Blood vessels of various sizes can be seen in the epineurium. The endoneurium, which 5_____ of a thin layer of loose connective tissue, surrounds the individual nerve fibers.

Communicative skills

8. Read advice which helps doctors to communicate effectively with patients.

Interview. The doctor should not ask leading questions which are expressed in such a way that they suggest what the answer should be. The doctor should ask questions in a form that doesn't suggest the "right" answer. The patient may give the answer he or she thinks the doctor wants, rather than the truth. The doctor should also avoid asking questions that are too broad because the patient may not be quite sure what information the doctor is looking for.

During a conversation with the patient, the doctor should learn about the patient's family and social history asking questions like:

- How many members are there in your family?
- What activities do you participate in?
- Are there any stressors that may be contributing to your present condition?

This will help the doctor understand the patient better in the context of his/her illness and will enable him/her to treat the patient more effectively.

It is often necessary in the course of the interview for a doctor to repeat the information he/she has received from the patient. For example: So you have had this uncomfortable pain for a month now and it gets you really worried. In this way, the patient will know that the doctor understands him or her and listens attentively. Moreover, the patient will feel that someone cares and is determined to help.

Notes:

leading question – навідне питання

to suggest – наводити на думку, підказувати (думку, ідею)

to avoid – уникати

to look for – шукати

social history – соціальний анамнез

family history – сімейний анамнез

to care – турбуватися, непокоїтися

to be determined to help – бути сповненим рішучості допомогти

9. Find leading questions which shouldn't be used in the interview with the patient. Decide which ones may be used by the doctor in the course of the conversation with the patient.

1. You don't suffer from double vision, right?
2. Which part of your chest is affected?
3. Your stools are black, aren't they?
4. Any problems with your breathing?
5. What is your appetite like?
6. Your appetite is OK, isn't it?
7. Have you any trouble with your stomach or bowels?
8. No problems with your stomach or bowels, right?
9. Have you noticed any pain in your muscles?

10. Work in pairs. Make up and act out the dialogue between a doctor and a patient.

- A. Play the part of a patient. Use the information from the patient's card.
- B. Play the part of a doctor. Try to find out what the patient's problems are.

Patient's card №1.

SURNAME <i>Hall</i>	FIRST NAMES <i>Kevin</i>	
AGE <i>53</i>	SEX <i>M</i>	MARITAL STATUS <i>Married</i>
OCCUPATION <i>Driver</i>		
PRESENTING COMPLAINT <i>Diffuse, crampy abdominal pain. Nausea that worsened after eating. Accompanied by weakness, anorexia and vomiting. Weight loss 10 kg.</i>		

Patient's card №2.

SURNAME <i>Black</i>	FIRST NAMES <i>Susan</i>	
AGE <i>20</i>	SEX <i>F</i>	MARITAL STATUS <i>Single</i>
OCCUPATION <i>Student</i>		
PRESENTING COMPLAINT <i>Recurrent pain in the right ear. Severe headache at the back of the head and neck stiffness. Fever 37,6°C.</i>		

Bones

1. Pay attention to the meaning of the following words.

adult	[ə'dʌlt]	дорослий
appendicular	[æpən'dɪkjʊlə]	апендикулярний
axial	['æksɪəl]	осьовий
compact bone	[,kəm'pækt]	компактна кістка
diaphysis	[daɪ'æfɪsɪs]	діафіз
epiphysis	[ɪ'pɪfɪsɪs]	епіфіз
girdle	['gɜ:dəl]	пояс
hyoid	['haɪɔɪd]	під'язична кістка, г'юїд
inferior	[ɪn'fɪəriə]	нижній, підлеглий
jaw	[dʒɔ:]	щелепа
layer	['leɪə]	шар
limb	[lɪm]	кінцівка
major	['meɪdʒə]	головний, значний
ossicle	['ɒsɪkl]	кісточка
periosteum	[peri'ɒstɪəm]	окістя
rib	[rɪb]	ребро
sesamoid bone	['sesəməɔɪd]	сезамовидна кістка
shaft	[ʃɑ:ft]	тіло (довгої) кістки, діафіз
smooth	[smu:ð]	гладкий
sternum	['stɜ:nəm]	грудина
storage	['stɔ:rɪdʒ]	зберігання, накопичення
support	[sə'pɔ:t]	підтримка
temporal bone	['temp(ə)r(ə)l]	скронева кістка
vertebral	['vɜ:tɪbr(ə)l]	хребетний

2. Read the text.

The skeletal system in an adult body is made up of 206 individual bones. These bones are arranged into two major divisions: the axial skeleton and the appendicular skeleton. The axial skeleton runs along the body's midline axis and is made up of 80 bones in the following regions:

skull, hyoid, auditory ossicles, ribs, sternum, vertebral column. The appendicular skeleton is made up of 126 bones in the following regions: upper limbs, lower limbs, pelvic girdle, pectoral (shoulder) girdle.

The skull is composed of 22 bones that are fused together except for the mandible. These 21 fused bones are separate in children to allow the skull and brain to grow, but fuse to give added strength and protection as in adult. The mandible remains as a movable jaw bone and forms the only movable joint in the skull with the temporal bone. The bones of the superior portion of the skull are known as the cranium and protect the brain from damage. The bones of the inferior and anterior portion of the skull are known as facial bones and support the eyes, nose, and mouth.

Bone is one of the hardest materials in the body. It is made of collagen and various minerals, such as calcium, that make it strong and hard. Bones can be classified by shape. There are long bones, located in the body's lower extremities that are strong and light, and short bones that are located in the wrist and ankle. Flat bones are located in the ribs and the hip, while irregular bones make up the skull, face, vertebrae, and pelvis, and help to support weight. Sesamoid bones are short bones located within a tendon or joint capsule.

Although bones differ in shape and size, they basically have the same structure and function. Long bones are made up of 2 main parts. Diaphysis of a long bone makes up most of the bone's length. Epiphysis is the end of the long bone made up of compact and spongy bone tissue.

Bone is made up of a number of different layers of materials. Several terms are used to describe features of bones throughout the body. The periosteum is a layer of fibrous tissue that covers the bone, except at the ends. Compact bone is the dense, hard, smooth outer layer of bone. Compact bone surrounds the yellow bone marrow in the shaft (diaphysis) of the bone and gives strength to the hollow part of the bone. Compact bone has many canals that contain blood vessels and nerves. Bones have many functions, including:

- Shape and support. Bones form the internal framework that gives the body its shape and provides support to the body's tissues.
- Protection. Bones protect important organs, such as heart, lungs and brain.
- Movement. Muscles, tendons and ligaments work with bones and joints to allow the body to move.
- Storage of fat and minerals. Fat is stored inside the cavities of bones. Bones also store and release important minerals, such as calcium, phosphorus and magnesium, when they are needed by the body.
- Blood cell production. Blood cells are made in the red bone marrow of certain bones.

3. Find in the text what

- is composed of 22 bones _____
- runs along the body's midline axis _____
- is one of the hardest materials in the body _____
- is a layer of fibrous tissue that covers the bone _____
- is the end of the long bone _____
- surrounds the yellow bone marrow in the shaft _____
- forms the only movable joint in the skull with the temporal bone _____

4. Match the two halves of each sentence.

- | | |
|---|---|
| 1. The mandible | a. materials in the body. |
| 2. Bone is one of the hardest | b. of compact and spongy bone tissue. |
| 3. The epiphysis is made up | c. is made up of 206 individual bones. |
| 4. Compact bone is | d. such as heart, lungs and brain. |
| 5. Fat is stored inside | e. the dense, hard, smooth outer layer of bone. |
| 6. The skeletal system in an adult body | f. the cavities of bones. |
| 7. Bones protect important organs, | g. remains as a movable jaw bone. |

5. Find words in the text which mean the following:

- extremity _____
- breastbone _____
- junction _____
- defense _____
- grown-up _____
- lower jaw _____
- cranium _____

6. For questions 1-7, read the text below and decide which answer (a, b or c) best fits each gap.

Fascinating Facts About Human Bones

The smallest bone in the human body is the stirrup bone, the stapes, one of the 3 bones that make up your middle 1 _____, measuring 2-3 millimeters. It is 2 _____

like a “U.” The biggest and strongest bone in the human body is the femur. It 3 _____ from the hip to the knee. It can resist a force of up to 1,800 to 2,500 pounds. The hands have the most bones - 27 in each hand. Osteoporosis is the most common bone disease, which is characterized by low bone mass and deterioration of 4 _____ structure. The most common forms of bone 5 _____ is osteosarcoma. The weirdest disease of the human bone is disappearing human bone disease. The clinical 6 _____ for this disease is massive osteolysis. It’s more commonly known as Gorham’s disease.

Evel Knievel, the pioneer of motorcycle long jumping exhibitions, had 7 _____ from 433 bone fractures by end of 1975. In the winter of 1976 he was seriously injured during a televised attempt to jump a tank full of sharks at the Chicago Amphitheater. He decided to retire from major performances as a result.

- | | | |
|----------------|-------------|-------------|
| 1. a. leg | b. hand | c. ear |
| 2. a. formed | b. shaped | c. made |
| 3. a. blows | b. extends | c. flows |
| 4. a. bone | b. hand | c. mandible |
| 5. a. cancer | b. breaking | c. lost |
| 6. a. disease | b. topic | c. terms |
| 7. a. suffered | b. hurt | c. had |

7. Complete the following sentences by choosing the most suitable words. Use only one word in each gap.

Gorham’s disease is also called disappearing bone disease causes extensive loss of calcium from a single bone so that it cannot be seen on x-ray. Any bone can be 1 _____ but the upper arm, shoulder, and jaw are most frequent. This type of selective decalcification is sometimes 2 _____ with the presence of a hemangioma, a knot of distended blood vessels. 3 _____ of Gorham’s disease is for the most part palliative and limited to symptom management. Sometimes the bone 4 _____ spontaneously ceases and no treatment is required. But when the disease is progressive, aggressive intervention may be necessary. Duffy and colleagues reported that around 17% of patients with Gorham’s disease in the ribs, shoulder, or upper spine experience extension of the disease into the chest, leading to chylothorax with its serious consequences, and that the mortality rate in this group can 5 _____ as high as 64% without surgical 6 _____.

Communicative skills

8. Read advice which helps doctors to communicate effectively with patients.

Listening. Being a good listener is key to providing care that conveys empathy for the person as well as interest in his or her health problems. The patient who feels that the clinician has been an attentive listener is comforted and more likely to leave the encounter with a positive impression. Equally important, the clinician obtains essential information from the patient. There are three types of listening that may be used in doctor-patient communication. They are: active listening, reflective listening and empathic listening.

Active listening involves respond to the patient through brief statements, body movements, or facial expressions that confirm that you are listening to what the patient is saying. Use subtle changes in facial expression - a slight widening of the eyes or a wince - to convey not only that you are listening but understand the patient's feelings. Nod your head at key points in the patient's statements. Lean slightly forward and make eye contact. Offer brief confirmations that you hear what is being said and understand. "I see" uttered while looking directly at the patient may be all that is required.

Reflective listening involves repeating something the patient has said. This not only confirms that you heard the statement but provides an opportunity to confirm or clarify what you heard. Reflective listening can also convey empathy. To be a reflective listener a physician should:

- ✓ Repeat a key part of the patient's statement (Patient: The pain usually starts on the left side. Clinician: On the left side).
- ✓ Paraphrase the statement. For example: Patient. The headaches get even worse when I come home at night and still have work to do. Clinician: So you're already exhausted when you get home, and the headaches get worse when you think about all you have yet to do.
- ✓ Pose a question to clarify of the patient's statement. Clinician: Are you saying that the pain is worse when.....?
- ✓ Avoid interrupting the patient, as well as colleagues and coworkers.
- ✓ Briefly summarize what the patient has said as a way of clarifying, empathizing, and transitioning to a discussion of next steps.

Empathic listening means addressing the emotional element of a patient's experience and demonstrating empathy. Make a response to the patient that is sympathetic and supportive by using phrases like: *That must have been difficult for you. You seem concerned. You are understandably anxious about all this. This isn't easy, but you are clearly trying.* Ask the patient not only about symptoms and complaints, but also about his/her emotions. Encourage the patient to talk about problems rather than dismissing them.

Notes:

active listening – активне слухання

reflective listening – рефлексивне слухання

empathic listening – емпатичне слухання

to pose a question – ставити запитання

to convey empathy – виражати співчуття

to obtain information – отримати інформацію

to clarify – уточнювати

subtle changes in facial expression – незначні зміни у виразі обличчя

to nod the head – кивати головою

brief confirmations – коротке підтвердження

9. Work in pairs. Act out a dialogue.

Student A. You are a doctor (try to be a good listener, using active and reflective listening techniques). Ask the patient about his complaints and symptoms. Listen to the patient and write down everything necessary to make a correct diagnose.

Student B. You are a patient who has got a cold. You feel a tickle in the throat, it feels dry itchy and scratchy. It is painful to eat and swallow. You are completely exhausted. You are sneezing all the time. You feel headaches and chills, fatigue, muscle ache and loss of appetite. Your cough is dry. Your condition worsens at night.

10. While listening to your groupmates, make some notes in the feedback paper.

Feedback Paper

Put a tick if the doctor:

_____ Uses active listening (responds through brief statements, uses body movements and facial expressions, leans slightly forward and makes eye contact);

_____ Uses reflective listening (repeats some of the patient's sentences, paraphrases the statements, avoids interrupting);

_____ Uses empathic listening (demonstrates sympathy, makes responses that are sympathetic and supportive).

Additional comments _____

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Muscles

1. Pay attention to the meaning of the following words.

airways	['eəweɪ]	дихальні шляхи
bladder	['blædə]	сечовий міхур
choking	['tʃəʊkɪŋ]	удушення
consistency	[kən'sɪst(ə)nəsi]	постійність, сталість
contraction	[kən'trækʃ(ə)n]	скорочення
crucial	['kru:ʃ(ə)l]	головний, ключовий
efficient	[ɪ'fɪʃ(ə)nt]	ефективний, дієвий
endurance	[ɪn'dʒu(ə)rəns]	витривалість, стійкість
engine	['endʒɪn]	двигун
involuntarily	[ɪn'vɒl(ə)nt(ə)rɪli]	мимоволі, ненавмисно
larynx	['læɪŋks]	гортань
mammal	['mæm(ə)l]	ссавець
motion	[mouʃ(ə)n]	рух, хід
myopathy	[mɪ'ɒpəθi]	міопатія
smooth	[smu:ð]	гладкий, рівний
sophisticated	[sə'fɪstɪkeɪtɪd]	витончений, досвідчений
stretch	[streɪtʃ]	розтягнення
sustained	[sə'steɪnd]	тривалий
to conceive	[kən'si:v]	осягати, розуміти
tongue	[tʌŋ]	язик
uterus	['ju:t(ə)rəs]	матка

2. Read the text.

Muscles are one of those things that most of us take completely for granted, but they are incredibly important for two key reasons: muscles are the “engine” that your body uses to propel itself. Although they work differently than a car engine or an electric motor, muscles do the same thing – they turn energy into motion; it would be impossible for you to do anything without your muscles. Absolutely everything that you conceive of with your brain is expressed as muscular motion. The only ways for you to express an idea are with the muscles of your larynx, mouth and

tongue (spoken words), with the muscles of your fingers (written words or “talking with your hands”) or with the skeletal muscles (body language, dancing, running, building or fighting).

When most people think of “muscles”, they think about the muscles that we can see. For example, most of us know about the biceps muscles in our arms. But there are three unique kinds of muscles in any mammal’s body - skeletal muscles, smooth muscles and cardiac muscles.

The skeletal muscles are all the muscles that attach to the skeleton and help the body move. Skeletal muscles attach to the skeleton by a thick, rope-like tissue called a tendon and come in pairs - one muscle to move the bone in one direction and another to move it back the other way. These muscles usually contract voluntarily, meaning that you think about contracting them and your nervous system tells them to do so. They can do a short, single contraction or a long, sustained contraction.

Smooth muscle is found in your digestive system, blood vessels, bladder, airways and, in a female, the uterus. Smooth muscle has the ability to stretch and maintain tension for long periods of time. It contracts involuntarily, meaning that you do not have to think about contracting it because your nervous system controls it automatically. For example, your stomach and intestines do their muscular thing all day long, and, for the most part, you never know what’s going on in there.

Cardiac muscle is found only in your heart, and its big features are endurance and consistency. It can stretch in a limited way, like smooth muscle, and contract with the force of a skeletal muscle. It is a muscle that contracts involuntarily. The cardiac muscle is extremely strong and is unique in that the entire muscle contracts at the same time.

Because muscles are so crucial they are incredibly sophisticated. They are efficient at turning fuel into motion, they are long-lasting, they are self-healing and they are able to grow stronger with practice. They do everything from allowing you to walk to keeping your blood flowing!

3. Find in the text which muscle

- is attached to the skeleton and comes in pairs _____
- is found in blood vessels _____
- can keep tension for long periods of time _____
- can be found only in the heart _____
- contracts voluntarily _____
- contracts with the force of a skeletal muscle _____
- is found in the bladder _____

4. Match the two halves of each sentence.

- | | |
|--|------------------------------------|
| 1. Skeletal muscle is the type of muscle | a. fuel into motion. |
| 2. Smooth muscle has the ability | b. unique kinds of muscles. |
| 3. Skeletal muscles attach to | c. endurance and consistency. |
| 4. Muscles are efficient at turning | d. that we can see and feel. |
| 5. Cardiac muscle has big features: | e. single contraction (twitch). |
| 6. There are three | f. to stretch. |
| 7. Skeletal muscles can do a short, | g. the skeleton and come in pairs. |

5. Find words in the text which mean the following:

1. A tissue composed of cells or fibers, the contraction of which produces movement in the body.
2. A two-headed muscle that lies on the upper arm between the shoulder and the elbow.
3. A duct, canal, or other tube that contains or conveys a body fluid.
4. The physiological condition of a muscle which generates tension at its origin and insertion.
5. The body part that forms the supporting structure of an organism.
6. The ability of an organism to exert itself and remain active for a long period of time.
7. A muscular organ in humans and other animals, which pumps blood through the blood vessels of the circulatory system.

6. For questions 1-7, read the text below and decide which answer (a, b or c) best fits each gap.

Myopathy is the medical term for muscle disease. Some muscle diseases 1_____ when the body's immune system attacks muscles. The result is misdirected inflammation, hence the name inflammatory myopathies. This damages muscle tissue and makes muscles weak. People with inflammatory myopathies may have these features:

- Weakness in the large muscles 2_____ the neck, shoulders and hips;
- Trouble 3_____ stairs, getting up from a seat, or reaching for objects overhead;
- Little pain in the muscles;
- Choking while eating or 4_____ of food into the lungs;
- Shortness of 5_____ and cough;

The inflammatory myopathies include polymyositis and dermatomyositis. Muscle inflammation and weakness occur in both conditions while patients with dermatomyositis also have a rash. This rash most often appears as purple or red 6 _____ on the upper eyelids or as scaly,

red bumps over the joints, elbows or knees. Children with the disease also may have white calcium
7 _____ in the skin called calcinosis.

- | | | |
|--------------------|---------------|----------------|
| 1. a. occur | b. disappear | c. comes |
| 2. a. between | b. on | c. around |
| 3. a. falling | b. dancing | c. climbing |
| 4. a. perspiration | b. aspiration | c. respiration |
| 5. a. breath | b. lungs | c. breast |
| 6. a. bumps | b. dots | c. spots |
| 7. a. rash | c. source | c. deposits |

7. Complete the following sentences by choosing the most suitable words. Use only one word in each gap.

It takes 17 1 _____ to smile and 43 to frown. Unless you're trying to give your face a bit of a workout, smiling is a much easier option for most of us. Anyone who's ever scowled, squinted or frowned for a long period of 2 _____ knows how it tires out the 3 _____.

The strongest muscle in the 4 _____ body is the tongue. While you may not be able to bench press much with your tongue, it is in fact the strongest muscle in your body in proportion to its size. If you think about it, every time you eat, swallow or 5 _____ you use your tongue, ensuring it gets quite a workout throughout the day.

You use 200 muscles to take one step. Depending on how you divide up muscle groups, just to take a single step you use about 200 muscles. That's a lot of work for the muscles considering most of us take about 10,000 6 _____ a day.

Communicative skills

8. Read advice which helps doctors to communicate effectively with patients.

Body language. Good communication contains both verbal and nonverbal elements. Body language can often convey as much meaning to the patient as a spoken word. The doctor should be aware of and learn to control the nonverbal behavior that the patient might interpret in the wrong way (for instance making faces, frowning, nodding as a sign of disapproving) and always remember

to treat patients as he/she would like to be treated. The key to effective nonverbal behavior is to treat the patient with respect and give him/her full attention.

The following strategies can help control your nonverbal behavior.

- ✓ Keep the chest area open and arms unfolded to avoid setting up a perceived barrier between you and the patient (no arms across the chest).
- ✓ Maintain a relaxed body position, whether standing or sitting.
- ✓ Face the patient directly.
- ✓ Lean slightly forward when speaking.
- ✓ Keep an appropriate distance from the patient.
- ✓ Avoid looking over the rim of your glasses at the patient, a gesture that strikes an authoritarian, superior pose. On the other hand, taking off your glasses while the patient is speaking conveys a caring, empathic response to what you are hearing.
- ✓ Remain still and focused on the patient who is telling you something that is clearly important to him or her.

Doctor's attention, eye contact, body movements, touch encourage the patient to be open with the doctor whose body language should show that he/she is also involved in rapport building.

Notes:

nonverbal elements – невербальні елементи

to convey – передавати

to interpret in the wrong way – неправильно тлумачити

to look over the rim of glasses – дивитись над оправою окулярів

to set up – встановлювати

to frown – хмуритись

to disapprove – не схвалювати

9. Read the patients' notes after the consultation with the doctor. Decide whether the nonverbal behavior of the physician was appropriate and influenced the patient's satisfaction with his clinic visit.

1. "At the beginning of the visit I unexpectedly heard loud, coarse words being uttered by the doctor, which surprised me greatly."
2. "I could see that the doctor was listening and looking at me. I felt the personal attention by how the doctor looked into my eyes, not making any notes or writing on a computer at that time. I could see the interest."

3. “The doctor provided me with the information in a quick way not allowing the time for me to comprehend new information. I had some questions but did not manage to get the answers as I was asked to leave the room.”
4. “The physician hurriedly entered the examination room several minutes late, took furious notes, and turned away while I was talking.”
5. “During our talk the doctor was repeatedly gazing at his mobile phone. He asked some questions and shouted at me when I was trying to answer in a “messy way” telling that I have to be more precise.”

Blood

1. Pay attention to the meaning of the following words.

abundant	[ə'bʌndənt]	численний
basophil	['beisə(ʊ)fil]	базофіл
bloodstream	['blʌdstri:m]	кровотік
circulation	[,sɜ:kjə'leɪʃ(ə)n]	кровообіг
clot	[klɒt]	згусток крові, тромб
cytotoxic	[,saɪtə'tɒksɪk]	цитотоксичний
debris	['deɪbrɪ:]	відходи
eosinophil	[,i:ə(ʊ)'sɪnəfil]	еозинофіл
erythrocyte	['rɪθrəʊsaɪt]	еритроцит
formed elements	[fɔ:md 'elɪmənts]	формені елементи крові
granulocyte	['granjʊlə(ʊ) ,saɪt]	гранулоцит
hemostasis	[,hi:mə'steɪsɪs]	зупинка кровотечі, гемостаз
histamine	['hɪstəmi:n]	гістамін
homogeneous	[,hɒmə'dʒi:nəs]	однорідний
leukocyte	['lju:kəʊsaɪt]	лейкоцит
lymphocyte	['lɪmfəsaɪt]	лімфоцит
macrophage	['makrə(ʊ)feɪdʒ]	макрофаг
matrix	['meɪtrɪks]	міжклітинний матеріал
monocyte	['mɒnə(ʊ)saɪt]	моноцит
neutrophil	['nju:trə(ʊ)fil]	нейтрофіл
phagocytosis	[,fagə(ʊ)saɪ'təʊsɪs]	фагоцитоз
plasma	['plæzmə]	плазма
platelet	['pleɪtlət]	тромбоцит
plug	[plʌg]	пробка, заглушка
remainder	[rɪ'meɪndə]	залишок
thrombocyte	['θrɒmbə(ʊ)saɪt]	тромбоцит
to deem	[di:m]	вважати
to engulf	[ɪn'gʌlf]	поглинати
to migrate	[maɪ'greɪt]	переміщуватися
to suspend	[sə'spend]	розводити

2. Read the text.

Among all of the body's tissues, blood is unique: it is the only fluid tissue. Although blood appears to be a thick, homogeneous liquid, the microscope reveals it has both solid and liquid components. In fact blood is a complex connective tissue in which living blood cells, the formed elements, are suspended in a nonliving fluid matrix called plasma.

The average human adult has more than 5 liters of blood. The primary function of blood is to supply oxygen and nutrients to living cells and take away their waste products. Blood also enables hormones and other substances to be transported between tissues and organs. It delivers immune cells to fight infections and contains platelets that can form a plug in a damaged blood vessel to prevent blood loss. Blood also maintains a constant body temperature and a constant concentration of hydrogen ions and electrolyte ions.

Blood is made of two parts:

1. Plasma which makes up 55% of blood volume.
2. Formed cellular elements (red and white blood cells, and platelets) which combine to make the remaining 45% of blood volume.

Plasma itself is a solution of about 90 percent water, 7-9 percent proteins, and about 1 percent ions of such chemicals as sodium, calcium, and potassium. The remainder includes dissolved organic nutrients, gases, and waste products.

Red blood cells are produced in the bone marrow and released into the circulation. Also known as erythrocytes, they are the most common type of cell found in the blood. They circulate around the body for up to 120 days, at which point the old or damaged erythrocytes are removed from the circulation by the spleen and liver. The primary duty of red blood cells is to transport oxygen and carbon dioxide. After a human breathes in oxygen, the red blood cells deliver it to the tissues. As tissue cells use the oxygen, carbon dioxide begins to accumulate. The red blood cells then pick up the carbon dioxide waste product and transport it back to the lungs, where it is discharged during exhalation. The jobs of picking up and delivering oxygen and carbon dioxide are accomplished through a large chemical compound known as hemoglobin located within red blood cells.

White blood cells, or leukocytes, have a completely different function than red blood cells. They are part of the body's defense team and can actually move out of the bloodstream to do their work in the tissues. White blood cells come in many different shapes and sizes. Despite their differences in appearance, all of them have a role in the immune response. Leukocytes circulate in the blood until they receive a signal that a part of the body is damaged. In response to these signals, they leave the blood vessel, migrate to the source of the signal and help begin the healing process.

White blood cells come in three main types: granulocytes (including neutrophils, eosinophils, and basophils), monocytes and lymphocytes. Neutrophils are the first to act when there is an infection and are also the most abundant white blood cells. They fight bacteria and viruses by phagocytosis which means they engulf pathogens that may cause infection. They also release cytotoxic enzymes and chemicals to kill pathogens. Eosinophils play a role in fighting viral infections and are involved in the immune response against parasitic worms. Basophils store and synthesize histamine which is important in allergic reactions. They enter damaged tissues and release a histamine and other chemicals that promote inflammation in the body to fight pathogens. Monocytes which are the largest white blood cells play multiple roles in immune function. They become macrophages when activated and engulf pathogens and debris through phagocytosis. Lymphocytes help with our immune response. There are the B-lymphocytes and T-lymphocytes. B-lymphocytes produce antibodies that find and mark pathogens for destruction. T-lymphocytes kill anything that they deem abnormal to the body.

Platelets, also called thrombocytes, are irregularly shaped fragments of cells that circulate in the blood until they are either activated to form a blood clot or are removed by the spleen after about 9 days. The sticky surface of the platelets allow them to accumulate at the site of broken blood vessels to form a clot. This aids in the process of hemostasis.

3. Find in the text what:

- blood cells form body’s defense mechanism - _____
- blood cells circulate for 120 days - _____
- blood cells are removed after 9 days - _____
- white blood cells are the most abundant - _____
- white blood cells are the largest ones - _____
- part of blood is formed by plasma - _____
- chemical compound is essential for oxygen supply - _____

4. Match the following blood cells and their functions:

thrombocytes, neutrophils, basophils, monocytes, B-lymphocytes, erythrocytes, T-lymphocytes, eosinophils.

a) During the beginning phase of inflammation, particularly as a result of bacterial infection, environmental exposure, and some cancers, they are the first inflammatory cells to migrate towards the site of inflammation.

- b) These multifunctional cells have the ability to directly kill virally or bacterially infected cells.
- c) The principal means of delivering oxygen to the body tissues.
- d) Components responsible for combating multicellular parasites and certain infections.
- e) They help other white blood cells remove dead or damaged tissues, destroy cancer cells, and regulate immunity against foreign substances. They have the ability to change into another cell form called macrophages before destroying harmful bacteria, fungi and viruses.
- f) They secrete antibodies and have a number of other functions within the human immune system.
- g) The function of this component of blood is to stop bleeding.
- h) They appear in many specific kinds of inflammatory reactions, particularly those that cause allergic symptoms.

5. Find words in the text that mean:

- to consider _____
- obligation _____
- to encourage _____
- to supply _____
- waste _____
- thrombus _____
- the stopping of a flow of blood _____

6. Complete the following sentences by choosing the correct word from the frame below.

clot, vessel, blockade, obstructing, cause

The risk of blood loss from circulation is paralleled by a risk of 1 _____ of the blood vessels by unwanted 2 _____. When a 3 _____ develops within an intact vessel, 4 _____ the blood flow, this is referred to as thrombosis. This is a major 5 _____ of ischemic heart disease and cerebrovascular problems. 6 _____ may detach from their site of origin and circulate with the blood to become lodged in some distant blood 7 _____, a process called embolism.

7. Read the text and think of the word which best fits each gap.

1_____ blood cells are the only complete cells in blood, that is, they contain 2_____ and the usual organelles. 3_____ form a protective, movable army that helps to defend the body against damage by bacteria, viruses, parasites, and tumor cells. As such they have some very special characteristics. 4_____ blood cells are able to slip into and out of the blood 5_____. In addition, they can locate areas of tissue 6_____ and infection in the body by responding to certain 7_____ that are released from the damaged cells. Whenever leukocytes mobilize for action, the body speeds up their 8_____, and as many as twice the normal number of white blood cells may appear in the 9_____ within a few hours.

Communicative skills

8. Read advice which helps doctors to communicate effectively with patients.

Empathy and Advice. How the doctor responds to the patient during the course of the interview will determine not only how much information he/she will obtain, but will help build stronger rapport with the patient. The doctor needs to respond to the patient in a caring, humane and respectful way. This is called empathy and is considered the most important of all when dealing with the patient's feelings. Without it, the patient will never feel that the doctor understands his/her situation and that the doctor will eventually help them. By showing empathy, the doctor allows the patient to express his/her hidden fears which is the best way to build patient's trust. To demonstrate empathy the doctor may use the following strategies: assert that grief is an appropriate response; provide privacy for expressing grief, sorrow, or pain; give patients "permission" to voice their views; encourage patients to talk about their feelings; in the case of life-threatening illness, be honest and realistic, but don't remove all hope.

The following expressions may show doctor's empathy:

- What worries you most?
- What are your worries about this?
- It's completely natural for you to have worries.
- I am sure that we can alleviate the problem.
- It's not easy to change habits but giving up smoking will improve your condition.

There are several ways to give advice. There are two modal verbs a doctor often uses for giving advice: “*should / should not*”, “*ought to / oughtn’t*”. Both mean the same thing and are often used for strong advice. For example: You should do more exercise. You shouldn’t drink so much beer.

To make advice less strong a doctor can use the modals *could, can, might*. For example: You may try to give up smoking. You could try to loose weight.

To make advice less direct, a doctor can use a question. For example: Did you think of giving up smoking? How about doing some more exercise?

Recommendation is another good way of giving advice that isn’t to direct. A doctor can use the words “*suggest*” or “*recommend*”. For example: I would suggest doing more exercise. I would recommend limiting the consumption of alcohol.

Sometimes, a doctor needs to make advice stronger to let the patient know that it’s really important or to warn the patient. For this we can use the expression “*You had better*”. For example: You had better change your life stile or you disease will progress.

Notes:

to respond – відповідати, реагувати (на що-небудь)

rapport - взаєморозуміння

caring – уважний, турботливий

humane – гуманний

respectful – шанобливий, ввічливий

empathy - емпатія, співчуття; співпереживання

to be considered – вважатися

to express hidden fears – виразити приховані страхи

to assert [ə'sɜ:t] - стверджувати, заявляти

to encourage [in'keridʒ] - підбадьорювати; вселяти мужність, надію; надихати

life-threatening illness – небезпечна для життя хвороба

strong advice – настійлива порада

to warn [wɔ:n] – попереджати, застерігати

9. Read the statements below and decide whether they express empathy.

1. I think it’s possible that you have a condition called glaucoma.
2. I understand that you are worried but try to calm down.
3. Your condition is serious but there is still a lot we can do to help you.
4. Your baby has a heart condition which developed before her birth.

5. You shouldn't worry. It's quite a common condition and there is an effective treatment.
6. Here is a prescription for tablets which you ought to take two of every six hours.
7. You said you were a bit worried because your friend had a similar problem. What are your worries about this?
8. I'm sorry to tell you but the news isn't good.
9. When people try to make changes like this, at first it seems difficult.

10. Using the information from the patient's card, give advice about the treatment you plan for him. Use different ways to give advice and try to be empathic.

Patient's card №1.

SURNAME	<i>Smith</i>	FIRST NAMES	<i>Sam</i>
AGE	<i>45</i>	SEX	<i>M</i>
OCCUPATION		<i>Office clerk</i>	
DIAGNOSIS			
<i>Acute gastritis</i>			
MANAGEMENT			
<i>Omeprazole 40 mg orally once a day in the morning plus clarithromycin 500 mg orally 3 times a day for 14 days.</i>			
<i>Eat smaller, more-frequent meals.</i>			
<i>Avoid spicy, acidic, fried or fatty foods. Avoid alcohol.</i>			
<i>Manage stress.</i>			

Patient's card №2.

SURNAME	<i>Rush</i>	FIRST NAMES	<i>Mary</i>
AGE	<i>53</i>	SEX	<i>F</i>
OCCUPATION		<i>Insurance lawyer</i>	
DIAGNOSIS			
<i>Type 2 diabetes</i>			
MANAGEMENT			
<i>Glucophage orally 850 mg once a day with meal.</i>			
<i>Eat regular meals. Avoid sugar and sugary foods, white rice, bread and flour. Limit fried and high fat food. Eat more fruit and vegetables.</i>			
<i>Stop smoking. Limit alcohol. Blood sugar monitoring.</i>			

Patient's card №3.

SURNAME <i>Bradford</i>	FIRST NAMES <i>Olivia</i>	
AGE <i>48</i>	SEX <i>F</i>	MARITAL STATUS <i>Single</i>
OCCUPATION <i>Teacher</i>		
DIAGNOSIS <i>Hypertension</i>		
MANAGEMENT <i>Acebutolol 400 mg orally once a day.</i> <i>Eat healthy diet rich in fruits, vegetables, whole grains, poultry, fish and low-fat dairy foods. Get plenty of potassium. Eat less saturated fat. Decrease the salt in the diet.</i> <i>Increase physical activity. Limit alcohol.</i> <i>Monitor blood pressure at home.</i>		

Patient's card №4.

SURNAME <i>Baker</i>	FIRST NAMES <i>Simon</i>	
AGE <i>65</i>	SEX <i>M</i>	MARITAL STATUS <i>Married</i>
OCCUPATION <i>Retired</i>		
DIAGNOSIS <i>Angina pectoris</i>		
MANAGEMENT <i>Nitroglycerin tablet sublingually as needed.</i> <i>Stop smoking. Limit alcohol. Avoid large meals.</i> <i>Eat a healthy diet rich in whole grains, fruits and vegetables with limited amounts of saturated fat..</i> <i>Lose weight. Avoid excessive exercise.</i>		

Blood Groups. Transfusions

1. Pay attention to the meaning of the following words.

agglutination	[ə, glu: tɪ'neɪʃ(ə)n]	аглоуінація, склеювання
anemia	[ə'ni: mɪə]	анемія
antibody	['æntɪ, bɒdɪ]	антитіло
antigen	['æntɪdʒən]	антиген
arrest	[ə'rest]	зупинення, затримка
donor	['dəʊnə]	донор
hemolysis	[hi: 'mɒlɪsɪs]	гемоліз, руйнування еритроцитів
indication	[, ɪndɪ'keɪʃ(ə)n]	показання
intravenous line	[, ɪntɹə'vi: nəs]	внутрішньовенний катетер
mismatched	[mɪs'mæʃɪd]	не відповідний
coagulation factor	[kəʊ, ægʒə'leɪʃ(ə)n 'fæktə]	фактор зсідання крові
receiver	[rɪ'si: və]	реципієнт
rhesus	['ri: səs]	резус-фактор
serum	['sɪərəm]	сироватка крові
to assail	[ə'seɪl]	нападати, атакувати
to battle	['bætl]	боротися
to clump	[klʌmp]	злипатися, склеюватися
to detect	[dɪ'tekt]	виявляти
to donate	[dəʊ'neɪt]	жертвувати, здавати (кров)
to eliminate	[rɪ'lɪmɪneɪt]	знищувати, усувати
to instigate	['ɪn(t)stɪgeɪt]	викликати, провокувати
to refer	[rɪ'fɜ:]	мати стосунок, стосуватися
to rupture	['rʌptʃə]	розриватися
transfusion	[træn(t)s'fju: z(ə)n]	переливання
whole blood	[həʊl blʌd]	цільна кров

2. Read the text.

Blood type refers to the presence or absence of chemical molecules on red blood cells. These molecules can instigate antibody reactions and are therefore antigens. A complete blood type

describes the set of 29 substances on the surface of erythrocytes, and an individual's blood type is one of the many possible combinations of blood group antigens. Usually only the ABO blood group system and the presence or absence of the Rhesus D antigen (also known as the Rhesus factor) are determined and used to describe the blood type. Human blood groups are type A, type B, type AB, or type O, and Rhesus factors are defined as either positive or negative.

Red blood cells can have one, both, or neither of the two antigens named "A" and "B." Blood with only A antigens or only B antigens is called type A or type B, respectively. Blood with both A and B antigens is called type AB, and blood with neither is type O. People with type A blood are also born with beta antibodies, which are designed to detect and eliminate B antigens. Likewise, people with type B blood have alpha antibodies that assail A antigens. Type AB blood has both antigens but neither antibody, and type O blood has neither antigen but both antibodies.

Knowledge of an individual's blood type is important to identify appropriate blood for transfusion or tissue for organ transplantation. Reactions between mismatched blood can be severe. If type A blood from one person is given to another person with type B blood, the blood will clump due to a process called agglutination, as the alpha antibodies battle the B antigen. After clumping, the red blood cells will rupture in a process called hemolysis, which can lead to serious consequences, such as kidney dysfunction, chills, fever, and even death. For this reason, medical professionals compare blood type and Rhesus factor from a patient and a donor before proceeding with a transfusion.

A transfusion is putting blood or some part of it in a vein through an intravenous line. Transfusions of blood and blood products temporarily replace parts of the blood when a person has been bleeding, or when their body can't make enough blood. The blood usually comes from another person, called a donor. Blood transfusions save millions of lives every year. People usually donate whole blood – blood taken right out of a vein through a needle. Whole blood contains red cells, white cells and platelets suspended in plasma. Because patients seldom require all of the components of whole blood, it is rarely transfused as a unit. Instead, it is separated into units of red cells, plasma and platelets before it reaches a patient.

Red blood cells transfusions may be necessary for people who have anemia because they don't have enough erythrocytes to carry oxygen to all of the cells in the body. Red blood cells transfusions may also be given during or after surgery to make up for blood loss. Plasma transfusions are commonly used for the treatment or prevention of clinically significant bleeding due to a deficiency of one or more plasma coagulation factors. The indications to transfuse platelets include prevention of bleeding complications and the arrest of bleeding in patients with decreased production or abnormalities of platelet function.

3. Find in the text what:

- chemical is determined to describe the Rhesus factor - _____
- blood group has both A and B antigens on the surface of erythrocytes, and does not contain any antibodies against either A or B antigen - _____
- blood group does not have either A or B antigens on the surface of erythrocytes, but contains antibodies against both A and B antigens - _____
- blood group has the B antigen on the surface of erythrocytes, and contains antibodies against the A antigen - _____
- blood group has the A antigen on the surface of erythrocytes, contains antibodies against the B antigen - _____
- components of blood people with anemia may need to be transfused - _____
- components of blood people with bleeding disorders may need to be transfused - _____

4. Match the following terms and their meaning:

hemolysis, transfusion, antigen, serum, intravenous line, antibody, agglutination, anemia.

- a) The process by which cells or other particles are caused to adhere and form into clumps.
- b) A medical condition in which there are too few red cells in the blood.
- c) A blood protein produced in response to and counteracting a specific antigen.
- d) A substance that helps the production of antibodies.
- e) The rupture or destruction of red blood cells.
- f) A small, flexible tube placed into a vein in order to administer medication or fluids.
- g) An injection of a volume of blood, previously taken from a healthy person, into a patient.
- h) An amber-coloured, protein-rich liquid which separates out when blood coagulates.

5. Find words in the text that mean:

- to break _____
- to incite _____
- to attack _____
- to eradicate _____
- catheter _____
- entire _____

giver _____

6. Complete the following sentences by choosing the correct word from the frame below.

donate, donated, donation, receivers, supply, antibodies, blood group, components

Blood 1_____refers to the process of collecting, testing, preparing, and storing blood and blood 2_____. The purpose of the blood collection and distribution system is to ensure an adequate 3_____of blood for accident victims, people needing surgery, and people suffering from certain diseases, as well as for medical research. People preparing for elective surgery may 4_____ their own blood to be held and then returned to them during surgery. All 5_____ blood is extensively tested before being used. The first step is determining the 6_____, which indicates who can receive the blood. Blood is also screened for diseases like hepatitis B and C, HIV, syphilis and any 7_____that could cause complications for 8_____.

7. Read the text and think of the word which best fits each gap.

The actual process of donating 1_____blood takes about 20 minutes. A sterile 2_____is inserted into a vein in the donor's arm. The blood flows through plastic tubing into a blood bag. 3_____may be asked to clench their fist to instigate blood to flow. Once 4_____blood has been collected, it is sent to a lab for testing and processing. Most 5_____ blood is separated into its constituent components. 6_____blood and the various blood components have many uses. Red blood cells, which carry 7_____, are used to treat

anemia. Platelets, which play a role in controlling 8 _____, are commonly used in the 9 _____ of leukemia and other cancers. Fresh frozen plasma is also used to control 10 _____ in people deficient in certain coagulation factors.

Communicative skills

8. Read advice which helps doctors to communicate effectively with patients.

Giving Answers and Explanations. Most patients want to understand the basics of any health problem they experience, and any treatments they may receive. Research also suggests that patients who are interested and knowledgeable about their illness do better than passive, less informed ones. To give answers that will be understood the doctor should:

- ✓ Use terminology that the patient will understand rather than technical jargon.
- ✓ Explain what he is doing throughout examination or procedure.
- ✓ Remember that the patient hears what he says to others who are present.
- ✓ Use analogies or similes to make complex information understandable.
- ✓ Provide handouts.
- ✓ Draw pictures.
- ✓ Ask if there is anything that the patient would like to review again.

Doctors need to explain procedures so that they can help make them less frightening and thus reassure the patient. The future with “*to be going to*” is used as the clearest and most direct way to explain a procedure, even when the patient has not agreed to the procedure.

For example: We are going to give you a sedative.

Moreover, doctors often use fixed expressions with “*What*” to explain procedures.

For example: What we are going to do is to take a tiny sample of your skin.

What happens then is we are going to give you some painkillers.

What happens next is that we insert the needle.

What we need to do after that is stitch the wound.

Doctors use adjectives to reassure patients. For example: It is a routine procedure. It is a very simple procedure. You’ll hardly feel anything. It only takes a few minutes. You will feel a tiny scratch, nothing more.

Notes:

jargon - жаргон, професійна мова

to provide handouts - надати роздаткові матеріали

to reassure the patient - заспокоювати; підбадьорювати; утішати

frightening - страшний

9. Here is part of a doctor's explanation during the procedure of blood taking. The explanation has been put in the wrong order. Try to rearrange it.

- a) First, I would like to explain the procedure.
- b) What we need to do after that is label them with your name and contact details and send them off for tests to the laboratory.
- c) The results will be returned in some time.
- d) Hello, I am Dr. Stevens. I am trained to take blood for laboratory tests or medical reasons and I have experience in taking blood.
- e) I am going to introduce a small needle into your vein and gently draw some blood for the full blood count test.
- f) Do you have any questions? Did you understand what I explained to you? Please sit down and make yourself comfortable.
- g) Shall we start? If you feel unwell or uncomfortable, please let me know at once.

10. Explain the procedure of blood donation to a donor. Use the clues about the procedure and the information given above.

1. Explain what you are going to do and why.
 - Now I am going to take some blood that will be used in different situations for providing victims and other people who might need it with blood.
2. Instruct the patient to take up the correct position.
 - Now I want you to sit down and make yourself comfortable. Put your arm onto the table.
3. Reassure the patient about the investigation.
 - This may feel a little bit uncomfortable, but it won't take long, about 20 min.
4. Explain the procedure.
 - First, a sterile needle is inserted into a vein in your arm.
 - Then, the blood flows through plastic tubing into a blood bag.

- Once whole blood is collected, it is sent to a lab for testing and processing.
5. Give some instructions on what a person should do after the procedure.
- Drink an extra four glasses of liquids and avoid alcohol over the next 24 hours.
 - I strongly recommend you to keep the strip bandage on for the next several hours.

Keys

Human body.

3. the immune system, the skin, the respiratory system, the lymphatic system, the circulatory system, the reproductive system, nervous system.

4. 1. d; 2. b; 3. a; 4. c; 5. e.

5. 1. Blood; 2. secretion; 3. protein; 4. brain; 5. the cell.

6. 1. c; 2. a; 3. a; 4. c; 5. b; 6. b; 7. a; 8. a.

7. 1. middle; 2. protect; 3. voice; 4. stapes; 5. outer; 6. hammer; 7. groove; 8. abdominal; 9. melatonin; 10. react; 11. shaped.

9. 1 b; 2. b; 3. a. 4. c; 5. b; 6. a; 7. a; 8. a; 9. a.

10. 1. What is your full name? 2. When were you born? 3. Do you work? 4. What is your home address ? 5. What is your telephone number? 6. Do you have any children?

Cell.

3. 1. a cell membrane, a nucleus, cytoplasm and cell organelles; 2. mitochondria, ribosomes, the Golgi apparatus, lysosomes, centrioles, endoplasmic reticulum, peroxisomes, vacuoles; 3. phospholipids, cholesterol and proteins; 4. DNA, RNA and protein; 5. DNA and protein; 6. minerals, gases, organic molecules, organelles; 7. mitochondria

4. a. cell membrane; b. mitochondria; c. ribosomes; d. nucleus; e. lysosomes; f. cytoplasm; g. peroxisomes; h. vacuole.

5. 1. to allow, 2. to carry out, 3. permeable, 4. soluble, 5. trait, 6. respiration, 7. discharge.

6. 1. separates, 2. environment, 3. movement, 4. selective, 5. permeability, 6. allows, 7. nutrients,

7. 1. plasma membrane, 2. nucleus, 3. plasma membrane, 4. organelles, 5. organelle, 6. nucleus, 7. nucleolus, 8. nucleus, 9. erythrocyte, 10. nuclei.

10. 1. What do you complain of? 2. In which part of the chest do you feel pain? 3. How would you describe the pain? 4. When did you first notice this pain? / When did the pain start? 5. How long does the pain last? 6. Does anything make it better?

Tissues.

3. connective; nerve; muscle; epithelial; connective; epithelial.

4. 1. g; 2. d; 3. a; 4. b; 5. f; 6. c; 7. e.

5. 1. cells; 2. four; 3. widely; 4. epithelial; 5. involuntary; 6. organs; 7. organs.

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

7. 1. react; 2. various; 3. neurons; 4. impulses; 5. consists

Bones.

3. 1. skull; 2. axial skeleton; 3. bone; 4. periosteum; 5. epiphysis; 6. compact bone; 7. the mandible.

4. 1. g; 2. a; 3. b. 4. e; 5. f; 6. c; 7. d.

5. 1. limb; 2. sternum; 3. joint; 4. protection; 5. adult; 6. mandible; 7. skull.

6. 1. c; 2. b; 3. b; 4. a; 5. a; 6. c; 7. a.

7. 1. involved; 2. associated; 3. treatment; 4. destruction; 5. reach; 6. intervention.

Muscles.

3. 1. skeletal; 2. smooth; 3. smooth; 4. cardiac; 5. skeletal; 6. cardiac; 7. smooth.

4. 1. d; 2. f; 3. g; 4. a; 5. c; 6. b; 7. e.

5. 1. muscle; 2. biceps; 3. blood vessel; 4. contraction; 5. skeleton; 6. endurance; 7. the heart.

6. 1. a; 2. c; 3. c; 4. b; 5. a; 6. c; 7. c.

7. 1. muscles; 2. time; 3. face, 4. human; 5. talk 6. steps.

Blood.

3. 1. leukocytes, 2. erythrocytes, 3. thrombocytes, 4. neutrophils, 5. monocytes, 6. 55%, 7. hemoglobin.

4. a). neutrophils, b). T-lymphocytes, c). erythrocytes, d). eosinophils, e). monocytes, f). B-lymphocytes, g). thrombocytes, h). basophils.

5. 1. to deem, 2. duty, 3. to promote, 4. to provide, 5. debris, 6. clot, 7. hemostasis.

6. 2. blockade, 3. clot, 4. clot, 5. obstructing, 6. cause, 7. clots, 9. vessel.

7. 1. white, 2. nuclei, 3. leukocytes, they, 4. white, 5. vessels, 6. damage, 7. chemicals, substances, 8. production, 9. blood.

Blood groups. Transfusions.

3. 1. D antigen; 2. AB; 3. 0; 4. B; 5. A; 6. erythrocytes; 7. plasma and platelets.

4. a). agglutination, b). anemia, c). antibody, d). antigen, e). hemolysis, f). intravenous line, g). transfusion, h). serum

5. 1. to rupture, 2. to instigate, 3. to assail, 4. to eliminate, 5. line, 6. whole, 7. donor.

6. 1. donation, 2. components, 3. supply, 4. donate, 5. donated, 6. blood group, 7. antibodies, 8. receivers.

7. 1. whole, 2. needle, 3. donors, 4. whole, 5. donated, 6. whole, 7. oxygen, 8. bleeding, 9. treatment, 10. bleeding.

9. 1. d; 2. a; 3. e; 4. b; 5.c; 6. f; 7. g.

