



МИНИСТЕРСТВО ЗДРАВООХРАНЕНИЯ РД  
ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ ПРОФЕССИОНАЛЬНОЕ  
ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ РЕСПУБЛИКИ ДАГЕСТАН  
«ДЕРБЕНТСКИЙ МЕДИЦИНСКИЙ КОЛЛЕДЖ  
ИМ. Г. А. ИЛИЗАРОВА»

**Учебное пособие  
для студентов медицинских  
колледжей**

**«THE HUMAN BODY»**



УДК 828  
ББК 108  
Д-40

Рекомендовано к изданию заседанием цикловой комиссии гуманитарных дисциплин ГБПОУ РД «Дербентский медицинский колледж им. Г. А. Илизарова»  
Рег. № 806-04-2023

**Гамзатова Светлана Абдурашидовна** – директор ГБПОУ РД «Дербентский медицинский колледж им.Г.А.Илизарова», к.э.н., заслуженный врач РД.

**Разработчик:**– **Джафарова Саимат Назировна**, преподаватель английского языка первой квалификационной категории ГБПОУ РД «Дербентский медицинский колледж им. Г.А.Илизарова».

**Рецензент:** **Марина Кадировна Меджидова**, кандидат филологических наук, методист, преподаватель иностранных языков ГБПОУ РД «Дербентский медицинский колледж им. Г. А. Илизарова»

**Д-40** «The human body». Учебное пособие для студентов медицинских колледжей – Махачкала: Издательство АЛЕФ, 2024. – 60 с.

Данное учебно-методическое пособие «The human body» предназначено для использования на учебных занятиях по дисциплине «Иностранный язык» (английский) для студентов медицинских колледжей по специальностям 31.02.01. «Лечебное дело», 31.02.02. «Акушерское дело», 34.02.01. «Сестринское дело», 31.02.03. «Лабораторная диагностика» 31.02.05. «Стоматология ортопедическая» при изучении темы «The human body» под руководством преподавателя, а также оказание помощи студентам при самостоятельной работе с текстовым материалом, необходимым для совершенствования навыков и умений чтения адаптированной и аутентичной медицинской литературы по теме «The human body».

Пособие построено в соответствии с программами специальностей и включает тексты, лексический и грамматический материал.

© ДМК им. Г. А. Илизарова, 2024  
© Джафарова Саимат Назировна, 2024

## СОДЕРЖАНИЕ

	стр
ВВЕДЕНИЕ .....	4
WE STUDY ANATOMY .....	5
PARTS OF THE HUMAN BODY .....	7
SYSTEMS OF THE BODY .....	9
OUTLINE OF ANATOMY AND PHYSIOLOGY .....	12
CELLS .....	15
TISSUES .....	16
TYPES OF MUSCLES .....	18
THE SKELETON .....	19
SKULL .....	22
THE BRAIN .....	24
VERTEBRA .....	26
CHEST .....	27
INTERNAL ORGANS .....	30
CIRCULATORY SYSTEM .....	31
BLOOD .....	33
STRUCTURE OF THE BLOOD VESSELS .....	35
HEART .....	36
RESPIRATORY SYSTEM .....	38
LUNGS .....	40
THE NERVOUS SYSTEM .....	44
DIGESTIVE SYSTEM .....	46
ABDOMEN .....	51
STOMACH .....	52
LIVER .....	53
KIDNEYS .....	56
ЛИТЕРАТУРА .....	60

## ВВЕДЕНИЕ

Учебное - методическое пособие «The human body» подготовлено в соответствии с требованиями ФГОС СПО для специальностей: 34.02.01. «Сестринское дело»; 31.02.01. «Лечебное дело»; 31.02.02. «Акушерское дело»; 31.02.03. «Лабораторная диагностика»; 31.02.05. «Стоматология ортопедическая» по дисциплине «Иностранный язык» (английский).

Цель Пособия – оказание помощи студентам при самостоятельной работе с текстовым материалом, необходимым для совершенствования навыков и умений чтения адаптированной и аутентичной медицинской литературы, и ведения беседы по медицинской тематике.

Сформировать у студентов умения использовать английский язык как средство профессионального общения – это задача, которую помогает решить данное пособие.

Предлагаемое пособие содержит тексты, заимствованные из современной английской и американской литературы по медицине, обработанные и адаптированные для данного контингента обучающихся.

Пособие построено в соответствии с программами специальностей. В пособии представлены тексты с тематическими заданиями.

Для работы с текстом предлагаются задания: на чтение, перевод, нахождение эквивалентов лексики в текстовом материале на английском и русском языках и формирование относительно самостоятельных высказываний, а также ответы на вопросы, упражнения по грамматике.

Учебное пособие позволяет преподавателю организовать самостоятельную и творческую деятельность студентов, направленную на решение профессионально важных проблем, и реализует принципы продуктивного подхода в обучении с целью повышения качества подготовки специалистов в рамках изучения дисциплины «Английский язык».

**Text**  
**WE STUDY ANATOMY**

**Words:**

human body-человеческое тело  
trunk-туловище  
limb-конечности  
extremity-конечности  
upper-верхние  
lower-нижние  
to consist of-состоять из  
skull-череп  
to contain-содержать  
brain-мозг  
forehead-лоб  
mouth-рот  
lip-губа  
cheek-щека  
chin-подбородок  
external-внешний  
internal-внутренний  
gum-десна  
tooth-зуб  
tongue-язык  
palate-неба  
to connect-соединять  
neck-шея  
chest-грудная клетка  
abdomen-брюшная полость  
lung-легкое  
heart-сердце  
gullet-пищевод  
to breathe-дышать  
beat-удар, биение  
cavity-полость  
stomach-желудок  
liver-печень  
spleen-селезенка  
intestine-кишечник  
kidney-почка  
gall-bladder-желчный пузырь  
bladder-пузырь, мочевой пузырь  
bone-кость  
skeleton-скелет  
to support-поддерживать  
soft-мягкий  
to protect-защищать  
injury-повреждение, рана, ушиб  
muscle-мышца  
shoulder-плечо  
forearm-предплечье

elbow-локоть  
wrist-запястье  
thumb-большой палец  
hip-бедро  
thigh-бедро  
knee-колени  
calf-задняя часть голени, икра  
ankle-лодыжка  
skin-кожа

### **We study Anatomy**

At the practical Anatomy class we study the human body. The principal parts of the human body are the head, the trunk and the limbs (extremities). We speak of the upper extremities (arms) and the lower extremities (legs).

The head consists of two parts: the skull which contains the brain, and the face which consists of the forehead, the eyes, the nose, the mouth, the cheeks, the ears and the chin.

In the mouth there are gums with teeth, the tongue and the palate.

The head is connected with the trunk by the neck. The upper part of the trunk is the chest and the lower one is the abdomen.

The principal organs in the chest are the lungs, the heart and the gullet (esophagus). We breathe with the lungs. The heart contracts and makes 60-80 beats per minute.

The principal organs in the abdominal cavity are the stomach, the liver, the spleen, the intestine, the kidneys, the gall-bladder and the bladder. The framework of the bones is called the skeleton; it supports the soft parts and protects the organs from injury. The bones are covered with muscles.

The upper extremity is connected with the chest by the shoulder. Each arm consists of the upper arm, forearm, elbow, wrist and hand. We have four fingers and a thumb on each hand.

The lower extremity (the leg) consists of the hip (the thigh), the knee, the calf, the ankle and the foot.

The body is covered with the skin.

### **Exercise № 1. Answer the following questions:**

- 1) What do medical students study in the principal Anatomy class?
- 2) What are the principal parts of the human body?
- 3) What are the upper extremities?
- 4) What are the legs called?
- 5) Of how many parts does the head consist?
- 6) What does the skull contain?
- 7) What does the face consist of?
- 8) What are the three principal parts of the ear?
- 9) Where are the gums?
- 10) What connects the trunk with the head?
- 11) What is the upper part of the trunk called?
- 12) What are the principal organs in the chest?
- 13) What are the principal organs in the abdominal cavity?
- 14) What does the skeleton protect the organs from?
- 15) What are the bones covered with?
- 16) What does each arm consist of?
- 17) What does the lower extremity consist of?
- 18) What is the body covered with?

**Exercise № 2. Find in the text English equivalents for the following word combinations and sentences:**

1) защищает органы от повреждения; 2) верхняя конечность; 3) верхняя часть туловища- грудная клетка; 4) мы дышим легкими; 5) наружное ухо, среднее ухо, внутреннее ухо; 6) десны; 7) нижняя конечность; 8) череп, в котором находится мозг; 9) туловище и конечности; 10) сердце делает 60-80 ударов в минуту; 11) тело покрыто кожей.

**Exercise 3. Выберите правильный вариант ответа.**

1. He usually **wakes/wake** up at 7 o'clock.

2. I **am/are** busy now.

3. **Don't/doesn't** be late!

4. She **promise/promised** to help me.

5. We **aren't/don't** friends anymore.

6. The baby **is/am** sleeping now.

7. I **have/has** never been to England.

8. They **can't/don't** do this work.

9. I **will leave/am leaving** tomorrow.

10. Where **were/was** you yesterday?

**Text**

**PARTS OF THE HUMAN BODY**

**Words:**

1. construct - строить
2. to carry out - нести
3. to cover - покрывать
4. muscle - мышца
5. tissue - ткань
6. trunk - туловище
7. limb - конечность
8. skull - череп
9. temple - висок
10. chew - жевать
11. to divide into – делиться на
12. belly – живот
13. shin-bone – большеберцовая кость
14. thighbone – бедренная кость
15. joint - сустав
16. knee-joint – коленный сустав
17. knee-cap – коленная чашечка
18. ankle-лодыжка
19. sole – подошва
20. frame – скелет, каркас
21. margin - поле, кромка
22. thorax – грудная клетка
23. cavity – полость
24. diaphragm – диафрагма
25. wrist – запястье
26. thumb – большой палец
27. fibula – малоберцовая кость
28. calf – икра
29. femur – бедро

The body is wonderfully made, like a complex, perfect machine. Each part is specially constructed to carry out its own function, and to work as a whole with the other parts.

The body has a strong frame work of bones called the skeleton. The skeleton is covered by muscles and other soft tissues, and by skin on the outside.

The human body consists of three parts. They are the head, the trunk and the limbs.

The main part of the head is called the skull. The forehead, the temples, the cheeks, the cheekbones, the two jaws and the mouth compose the face. The teeth and the tongue are loading in the mouth. One chews food with the teeth and tastes food with the tongue. The lips are the two margins of the mouth. We see with the eyes, breathe and smell with the nose.

The trunk consists of the spine, the chest and the pelvic bones. The trunk is divided into two large cavities by diaphragm. The upper cavity of the trunk is called thorax and lower one is called the belly. The lungs and the heart are located above the diaphragms in the upper cavity. In the lower cavity we find interior organs such as stomach, liver, urinary bladder, gallbladder kidneys, spleen and intestines.

The upper limb is divided into the shoulder, the upper arm, the forearm and the hand. The join between upper arm and forearm we call the elbow. The wrist is the joint between forearm and hand. Each hand has five fingers: index, middle finger, ring finger, little finger and a thumb.

The lower limb consists of the thigh-bone, the shin-bone and the fibula. We call the calf the back of the lower leg. The join between the femur and the lower leg is called the knee-joint. This joint is protected by the knee-cap. The joints between lower legs and feet are the ankles. The foot consists of heel, sole and toes.

**Exercise № 1. Answer the following questions:**

1. What is the human body?
2. What is skeleton?
3. What parts of the human body do you know?
4. What is the main part of head?
5. What fingers does the hand consist of?

**Exercise № 2. Find English equivalents. Найдите английские эквиваленты.**

Составляют лицо; располагаются во рту; работаться как одно целое; покрыт мускулами и мягкими тканями; жевать еду; состоять из трех частей; внутренние органы; верхние конечности; нижние конечности.

**Exercise № 2. Find Russian equivalents. Найдите русские эквиваленты.**

To carry out its own function; complex machine; the teeth and the tongue are loading in the mouth; strong frame work of bones; upper cavity; lower cavity; tastes food with the tongue; joint between forearm and hand.

**Exercise № 3. Put the following sentences into the correct tense: Simple Past, Simple Present, Present Continuous or Past Continuous, Present Perfect.**

1. I \_\_\_\_\_ (listen) to the radio while Mary \_\_\_\_\_ (cook) dinner.
2. You \_\_\_\_\_ (buy) this book yesterday?
3. Last Friday Jill \_\_\_\_\_ (go) home early because she \_\_\_\_\_ (want) to see a film.
4. When your brother usually \_\_\_\_\_ (get) home in the evening?



5. Jane always \_\_\_\_\_ (bring) us a nice present.
6. What those people \_\_\_\_\_ (do) in the middle of the road?
7. You \_\_\_\_\_ (read) this book?
8. While Fred \_\_\_\_\_ (sleep), Judy \_\_\_\_\_ (watch) TV.
9. When I \_\_\_\_\_ (be) young, I \_\_\_\_\_ (think) Mary \_\_\_\_\_ (be) nice — but now I \_\_\_\_\_ (think) she's fantastic.
10. Jill \_\_\_\_\_ (walk) home when she \_\_\_\_\_ (see) her husband's car outside the cinema
11. Look there! Sue and Tim \_\_\_\_\_ (run) to school.
12. Jack's father \_\_\_\_\_ (not work) in London — he \_\_\_\_\_ (not speak) English.
13. Joe \_\_\_\_\_ (buy) a car yesterday.
14. Their father often \_\_\_\_\_ (go) to rock concerts.
15. While you \_\_\_\_\_ (sleep), mother \_\_\_\_\_ (arrive).

### Text SYSTEMS OF THE BODY

Skeletal - скелетный  
 Muscular - мышечный  
 Digestive - пищеварительный  
 Respiratory - дыхательный  
 Urinary - мочевой  
 Endocrine - эндокринный  
 Reproductive - репродуктивный  
 Bone - кость  
 Ligaments - связки  
 Cartilage - хрящ  
 Structural - структурный  
 Spinal – спинной, позвоночный  
 Cord - столб  
 Vessel - сосуд  
 Pump - насос  
 Stream – ток, поток  
 Alimentary - пищеварительный  
 Gland - железа  
 Convey – передавать, переносить  
 Carbon dioxide – двуокись углерода  
 Kidney - почка  
 Urine - моча  
 Ureter - уретра  
 Urinary bladder – мочевой пузырь  
 Be stored – сохраняться, храниться, скапливаться  
 Discharge – удалять, выводить из организма  
 Hormone - гормон

There are nine main systems of the body: the skeletal, the muscular, the nervous, the circulatory, the digestive, the respiratory, the urinary, the endocrine and the reproductive systems. The skeletal system consists of the bones of the body and ligaments and cartilages, which join them. The chief function of the skeletal system is structural.

The muscular system consists of the skeletal muscles and their associated structures. The main function of this system is to move us about.

The nervous system consists of the brain and spinal cord, nerves, ganglia and receptors. It is a complex information system with all the necessary means for receiving, processing, and communicating information.

The circulatory system consists of the heart and blood vessels and the blood, which is pumped through the blood vessels by the heart. Its function is chiefly that of transportation system: the nutrients, oxygen, and special substances which are required by cells are carried by the blood stream; and the cellular wastes and sometimes other materials produced by the cells are carried away by the blood stream.

The digestive system consists of the alimentary canal and a number of associated glands.

The respiratory system consists of the lungs, the air passages leading to them and associated structures. Its main function is to convey oxygen to the lungs, where it can enter the blood stream, and to remove carbon dioxide, which escapes from the blood into the lung spaces.

The urinary system consists of two kidneys, which produce urine by removing nitrogenous and other wastes from the blood: the two ureters, which convey the urine away from the kidneys; the urinary bladder, where the urine is stored until it is discharged; and the urethra through which the urine is discharged.

The endocrine system consists of a number of glands throughout the body which produce regulatory substances called hormones. The endocrine system serves to regulate a large number of activities.

**Exercise 1.** Answer the questions.

1. What is the function of the skeletal system?
2. What is the function of the muscular systems?
3. What is carried by the blood-stream?
4. What is the function of the respiratory system?
5. What does the endocrine system serve for?
6. Where are the hormones produced?

**Exercise 2.** Agree or contradict the following:

1. The skeletal system serves to move us about.
2. The circulatory system consists of the heart, the kidneys and blood vessels.
3. The main function of the respiratory system is to convey oxygen to the lungs.
4. The endocrine system consists of a number of vessels.
5. The urine is stored in the urinary bladder.

**Exercise 3.** Translate the following sentences:

1. Основная функция скелетной системы - структурная.
2. Система пищеварения состоит из пищеварительного канала и нескольких желёз.
3. Основная функция дыхательной системы - переносить кислород в лёгкие и удалять....
4. Эндокринная система служит для регулирования многообразных видов деятельности.
5. Два мочеточника перемещают мочу из почек.
6. Эндокринная система состоит из ряда желез по всему телу.

**Exercise 4.** Make the sentences interrogative:

The chief function of the skeletal system is structural.

The respiratory system consists of the lungs and associated structures.

The cellular wastes are carried away by the blood stream.

There are 9 main systems in the body.

The endocrine system serves to regulate various activities.

**Exercise 5.** Make the sentences negative:

The circulatory system consists of the heart, blood vessels and blood.

The nutrients, oxygen and special substances are carried by the blood stream.

The digestive system includes the alimentary canal and a number of associated glands.

The air can enter the blood stream.

The urine is stored in the bladder.

**Exercise 6.** Describe in English what is:

a) urine

b) nutrients

c) lungs

d) carbon dioxide

**Exercise 7.** Remember the symptoms. Match the following symptoms of disease with their definitions.

1. rash a. difficult or infrequent emptying of the bowels

2. constipation b. weariness from bodily or mental exertion

3. diarrhea c. feeling as if everything were turning round

4. dizziness d. a burning sensation in the stomach from indigestion

5. fatigue e. feeling of sickness as caused by bad food

6. fever f. inability to sleep

7. heartburn g. patch of tiny red spots on the skin

8. inflammation.. h. a redness and swelling attended with heat, pain

9. insomnia i. yellowness of the skin and the whites of the eyes

10. jaundice j. too frequent and too watery emptying of the bowels

11. nausea k. condition of the body with temperature higher than

usual

### TEST

1. The chief function of the skeletal system is ... .

a) reproductive

b) respiratory

c) structural

d) motor

e) excretory

2. The main function of the respiratory system is to convey ... to the lungs.

a) hydrogen

b) calcium

c) carbon

d) oxygen

e) carbon dioxide

3. The main function of the muscular system is ... the body.

a) to rotate

b) to lay down

c) to rise

d) to straighten

e) to move

4. There are ... main systems of the body.

a) five

b) six

c) seven

d) eight

e) nine

5. The nutrients, oxygen and special substances required by cells are carried out by the ... .
- lymph
  - cytoplasm
  - blood stream
  - digestive system
  - alimentary canal
6. Two kidneys produce ... by removing nitrogenous and other wastes from the blood.
- lipids
  - urine
  - carbohydrates
  - proteins
  - insulin
7. The endocrine system produces regulatory substances called ... .
- lipids
  - urine
  - carbohydrates
  - hormones
  - proteins
8. The urine is stored in the ... .
- kidneys
  - ureter
  - bladder
  - urethra
  - intestines
9. The two ureters convey the urine ... from the kidneys.
- into
  - out of
  - out
  - for
  - away
10. The nervous system is a complex information system ... all necessary means for receiving, processing and communicating information.
- of
  - with
  - by
  - at
  - to

### Text

## OUTLINE OF ANATOMY AND PHYSIOLOGY

**human anatomy** анатомия человека

**physiology** физиология

**cell** клетка

**fuel** горючее, топливо, питание

**oxygen** кислород

**blood** кровь

**heart** сердце

**circulation** кровообращение

**digestion** пищеварение

**stomach** желудок

**intestines** кишечник  
**respiration** дыхание  
**passage** проход  
**lung** легкие  
**nervous** нервный  
**brain** мозг  
**nerve** нерв  
**nucleus** ядро  
**chromosome** хромосома  
**gene** ген  
**hereditary** наследственный  
**nutrient** питательное вещество  
**waste products** продукты распада

Let's speak about human anatomy and physiology, which are the study, respectively, of the normal structure and functioning of the body. Just as houses are built of individual bricks, so is the body made up of millions of microscopic individual units called cells.

Each cell has a job to do and must be supplied with fuel and oxygen before it can do it. In this respect the body is not different from any other working engine or machine. All engines, machines and body cells are alike in requiring oxygen to burn their fuel and thereby produce the energy needed to perform their functions.

The fuel needed by the body comes from our food, while oxygen is present in the air we breathe. Fuel and oxygen are conveyed in the blood to all parts of the body by the heart and circulation. The food we eat is turned into usable fuel by process known as digestion. The digestive system contains the stomach and intestines.

Oxygen is obtained from the air we breathe. The process by which it enters the blood to reach the body cells is called respiration. The respiratory system consists of the passages and lungs.

Overall control and coordination of body functions is effected by the nervous system, which consists of the brain and nerves. The brain may be likened to a computerized telephone exchange with the nerves serving as telephone lines. There are many different types of cell in the body, depending on their particular function, but they all contain a central nucleus and are bounded by a cell wall. The nucleus is responsible for growth by cell division, and contains chromosomes and genes which transmit the hereditary factors, which make every person a unique individual. The cell wall is sufficiently thin to allow oxygen and nutrients from the blood to enter the cell and waste products to leave.

## NOTES

1. **in this respect** – в этом отношении
2. **known as** – известный как
3. **may be likened to** – можно сравнить с
4. **to be bounded** – быть связанным
5. **to enter the cell** - войти в клетку

### Exercise № 1. Find English equivalents. Найдите английские эквиваленты.

Иметь дело с; отдельные кирпичики; быть обеспеченным горючим и кислородом; переноситься; для того чтобы попасть в клетки тела; выводиться из тела; общий контроль и координирование; служащие в качестве; в зависимости от; отвечает за рост; уникальная индивидуальность; позволять; питательные вещества.

### Exercise № 2. Quote the sentences in which the following words and words combinations are used in the text:

to have a job to do; in this respect; to come from our food; to be turned into; to contain; to be called; to be eliminated from; to be likened; a cell wall; hereditary factors.

**Exercise № 3. Answer the questions:**

1. What do anatomy and physiology study?
2. What is body made up of?
3. What must each cell be supplied with?
4. Where does the fuel for the body come from?
5. What is digestion?
6. What main parts does the respiratory system consist of?
7. How is cell waste eliminated from the body?
8. What may the brain be likened to?
9. The nucleus is responsible for growth by cell division, isn't it?
10. What do chromosomes and genes do?
11. How do oxygen and nutrients enter the cell?

**Exercise № 4. Insert prepositions where necessary.**

**The body is not different ... any other machine. A motorcar engine, for example, needs fuel ... the form of petrol. This is burned inside the engine to produce the energy which drives the car. But petrol, gas, coal, wood or any other form of fuel can only burn ... the presence**

**Exercise № 5. Insert articles or possessive pronouns where necessary:**

... body is made up millions of cells. There are ... different types of cells in ... body. But yhey all have central nucleus and a cell wall ... chromosomes and genes of the nucleus transmit the ... hereditary factors of every person ... nucleus is the controlling structure of the cell. It controls ... way a cell reproduces and contains genetic material which determines the functioning and structure of ... cell ... . ... cell is the fundamental unit of every living thing.

**Exercise № 6. Ask ten questions based on the text and answer them.**

**Exercise № 7. Translate into English:**

1. Анатомия и физиология человека представляют собой учение о нормальной структуре и функционировании организма человека.
2. Организм человека состоит из миллионов клеток.
3. Для работы и жизни клетки ей необходимы питание и кислород.
4. Пища даёт нам энергию, а кислород мы получаем из воздуха, окружающего нас.
5. Система пищеварения включает желудок и кишечник.
6. В процессе дыхания главную роль играют легкие.
7. Функционирование нашего организма контролируется нервной системой, состоящей из мозга и нервов.
8. Каждая клетка состоит из ядра и оболочки.
9. Хромосомы и гены передают наследственные факторы любого человека, делая его уникальным.
10. Оболочка клетки достаточно тонка, что позволяет ей беспрепятственно осуществлять обмен веществ.

## Text CELLS

Each cell is a universal structural and functional unit of all living beings. Cells of all living organisms are similar in structure. Cells reproduce by division only.

The cell (cellula), as an elementary well-organized unit, carries out the functions of reproduction, growth, metabolism, adaptation to changes in the environment and regeneration. Cells vary in shape, structure and chemical composition. In the human body there are flat, spherical, ovoid, cuboid, prismatic, pyramidal and stellate cells. The size of cells varies from several micrometers (small lymphocyte) to 200 micrometers (oocyte).

All cells have a plasma membrane, or cytolemma (which consists of hyaloplasm, containing organelles and inclusions), and a nucleus.

The cytolemma (plasmalemma) is 9-10 nm thick; it separates the content of the cell from its external (extracellular) environment. The cytolemma performs functions of segregation, protection, transport and receiving impacts from the surrounding environment. It carries out the transfer of various molecules (particles) from outside into the cell and vice versa. The process of carrying substances inside the cell is called endocytosis, which can be differentiated into phagocytosis and pinocytosis. During phagocytosis the cell engulfs large particles (parts of dead cells, microorganisms). During pinocytosis the cytolemma forms vesicles, which involve small particles dissolved or suspended in the tissue fluid. These vesicles transport their content into the cell. The cytolemma also takes part in excretion of substances out of the cell (exocytosis). Exocytosis is performed by means of vesicles or vacuoles, in which substances are excreted out of the cell.

**Exercise 1.** Переведите предложения на русский язык.

1. Each cell is a universal structural and functional unit of all living beings.
2. Cells reproduce by division only.
3. Cells vary in shape, structure and chemical composition.
4. All cells have a plasma membrane, or cytolemma and a nucleus.
5. The cytolemma (plasmalemma) is 9-10 nm thick.
6. During phagocytosis the cell engulfs large particles.
7. The cytolemma also takes part in excretion of substances out of the cell.

**Exercise 2.** Поставьте глаголы в предложениях в отрицательную и вопросительную формы.

1. My friend entered the Medical College in a year ago.
2. She takes her entrance examinations.
3. He will become a student next year.
4. My friend gets an increased stipend.
5. She was interested in this report.
6. They work as doctors.

**Exercise 3.** Раскройте скобки, поставив глагол в форму причастия 1 или 2.

1. Susie felt rather \_\_\_\_\_ (frustrate) with her performance.
2. It's \_\_\_\_\_ (freeze) cold in this room! Haven't they got central heating?
3. The final exam results were rather \_\_\_\_\_ (disappoint).
4. Listening to classical music is quite \_\_\_\_\_ (relax).
5. Ben didn't understand the teacher's question. He looked \_\_\_\_\_ (puzzle).
6. They gave me a warm \_\_\_\_\_ (welcome) hug!
7. Pupils get \_\_\_\_\_ (distract) very easily.

8. The lecture was so ... (bore) that a few listeners fell asleep.
9. I was so ... (excite) that I couldn't say a word.
10. Jack's answer was ... (disappoint).
11. Little John's questions were ... (surprise).
12. The boy ... (translate) the story is the best pupil in our class.
13. Everything ... (write) on the blackboard is correct.
14. We saw a lot of ... (fascinate) paintings.
15. She didn't understand the word (to say) by him.
16. He didn't see the things (to keep) in her box.
17. I don't like the video (to buy) yesterday.
18. This is the house (to build) many years ago.
19. The question (to put) to the professor was important.
20. We liked the Room of Horrors but some of the tricks were rather ... (frighten).

## Text TISSUES

Cells and their derivatives combine to form tissues. A tissue is a combination of cells and extracellular matrix united by a common embryological derivation, structure and function. The tissues in the human organism are subdivided into four types: epithelial, connective, muscular and nervous. Each type of tissue develops from a specific germ layer. Epithelial tissue derives from the endo-, ecto- and mesoderm. Nervous tissue develops from the ectoderm.

Epithelial tissue covers the surface of the body and mucosae. Epithelial tissue also forms glands (glandular epithelium). Furthermore, there is sensory epithelium in the hearing, vestibular, smell and taste organs, the cells of which can perceive specific stimuli.

Classification of epithelium. Integumentary epithelium is subdivided into single layer (simple) and stratified. In simple epithelium all cells lie on the basement membrane. In stratified epithelium cells lie in several layers, and only cells of the basal (deep) layer are in contact with the basement membrane. Simple epithelium is further subdivided into single-row (isomorphic) and multilayered (pseudostratified). In single-row epithelium the nuclei of all cells are situated on the same level and cells have the same height. In pseudostratified epithelium nuclei lie in several layers, while the cells may have different shapes. Depending on the shape of the cells and their ability to undergo keratinization epithelium can be stratified keratinous (squamous), non-keratinized (squamous, cuboidal, columnar) and transitional. All epithelial cells have certain common structural peculiarities. The apical part of epitheliocytes differs from the basal part. Cells of the integumentary epithelium form layers, which rest on the basement membrane and lack blood vessels. Epithelial cells contain all the general organelles. Cells, which secrete protein, are rich in granular endoplasmic reticulum. Cells, which produce steroids, have smoother endoplasmic reticulum. Absorption cells possess an abundance of microvilli, and epitheliocytes, that cover the respiratory tract mucosa, have cilia.

The integumentary epithelium performs the barrier and protective functions as well as the functions of absorption (small intestine epithelium, peritoneum, pleura, nephron canals, etc.), secretion (amniotic epithelium, stria vascularis of the cochlear duct), ventilation (respiratory alveolocytes). Simple epithelium. Simple epithelia include simple squamous, cuboidal, columnar and pseudostratified epithelium types. Simple squamous epithelium is a layer of flat cells, which lie on a basement membrane.

Protrusions of cell surfaces can be found only above zones containing the nucleus. Epitheliocytes have a polygonal shape; they form the external wall of the renal glomerulus capsule; cover the posterior surface of the cornea; line blood and lymph vessels and chambers of the heart; cover the serous membranes (mesothelium).



**Exercise 1.** Переведите предложения на русский язык.

1. Cells and their derivatives combine to form tissues.
2. Each type of tissue develops from a specific germ layer.
3. Epithelial tissue covers the surface of the body and mucosae.
4. All epithelial cells have certain common structural peculiarities.
5. Epithelial cells contain all the general organelles.
6. Cells, which produce steroids, have smoother endoplasmic reticulum.
7. Protrusions of cell surfaces can be found only above zones containing the nucleus.

**Exercise 2.** Переведите предложения на английский язык.

1. Вчера у неё была лекция по биологии.
2. Вчера она была на лекции по биологии.
3. Она будет завтра на собрании.
4. У неё будет завтра собрание.
5. Они близкие родственники.
6. У них много родственников.

**Exercise 3.** Passive Voice

Choose the right variant

1. Every year London ... by many people from all over the world.  
a) is visited  
b) is being visited  
c) was being visited
  2. The biggest museum ... by the Mayor next month, on May 24th.  
a) opens  
b) is opened  
c) will be opened
  3. Numerous banks, offices and firms ... in the City.  
a) have been situated  
b) situate  
c) are situated
  4. The City of London ... by fire in 1666 and by bombs in 1940.  
a) destroyed  
b) was destroyed  
c) had been destroyed
  5. St. Paul's Cathedral... by Christopher Wren (1632-1723), and it... last stone was laid in 1710.  
a) was designed; believes  
b) designed; believed  
c) was designed; is believed
- 51
6. Nearly all English kings and queens ... in Westminster Abbey.  
a) are being crowned  
b) have been crowned  
c) had been crowned
  7. The Tower of London ... as a fortress, a royal palace and a prison became a museum.  
a) was used  
b) has been used

- c) had been used
8. Who ... "There Men in a Boat" .....
- a) has ... been written with  
b) was ... written by  
c) are ... written by
9. My computer ... repaired since last month, so I can't help you find information you ask for.
- a) has been repaired  
b) is being repaired  
c) was repaired
10. The child ... by a man who ran away.
- a) hit  
b) was hit  
c) had hit

### Text

#### TYPES OF MUSCLES

The word «muscle», according to one theory, comes from a word that means «little mouse»: that is when a man's muscles are contracting they look as if a little mouse runs about under his skin. According to another theory the word «muscle» comes from a Greek expression that means «to enclose», that is layers of muscles enclose the body. We know that the muscles constitute about 50 per cent of total body weight, slightly more in the average male than the female. Tendons, fasciae and the various organs themselves depend on the muscular system and the function of muscle cells.

There are three main types of muscular tissue that we identify classify on the basis of structure and functions:

- 1) smooth or visceral muscle,
- 2) striated or skeletal muscle,
- 3) cardiac muscle.

Smooth muscles can contract slowly. They make up the walls of internal organs such as those of the blood vessels, and the digestive tract. Since we identify the internal organs as viscera, we sometimes call smooth muscles visceral muscles. The visceral muscles react relatively slowly to changes within the body and do so without the intervention of the will.

The walls of the blood vessels are contracting or expanding when they respond to certain chemicals in the blood or in response to the effect of temperature but we cannot deliberately cause them to lift our arm or open our mouth. For this reason, we may call them involuntary muscles. Smooth muscle tissue consists of long cells. Smooth muscle fibres are bound (связаны) into bundles by connective tissue which contain blood vessels and nerves.

Striated muscle tissue consists of large fibres in the form of bundles. Striated muscles are most necessary manipulation of the bones of the skeleton. Those are the muscles necessary for walking, running, turning the head and so on. That's why we sometimes call them skeletal muscles. This type of muscle tissue includes the large muscle masses of the body, the muscles of the arms, legs, back etc. It includes all those muscles which must react quickly to changes in the environment,

i.e. those that become active through an effort of will. For this reason, we call striated muscles voluntary muscles.

Cardiac (heart) muscle is, in a sense, a cross between the previous two. A characteristic feature of cardiac muscle is that fibres have neither a beginning nor an end. In other words, the heart is simply a huge net of muscles in which all elements are continuous with each other. Cardiac muscles («heart» — Greek) have the strength and force of contraction of the skeletal muscle. Cardiac muscle is under complete involuntary control. In that, it resembles visceral muscle.

**Exercise 1. Find English equivalents. Найдите английские эквиваленты.**

согласно одной теории; прилежать; 50% от общей массы тела; связи; сокращаются; без вмешательства воли; длинные клетки; изменения окружающей среды; поперечнополосатые мышцы; мышцы сердца; добровольный; напоминает.

**Exercise 2. Answer the questions. Ответьте на вопросы.**

1. How many types of muscular tissue are there?
2. How do we sometimes call smooth muscles?
3. Smooth muscles can contract slowly, can't they?
4. What is another name of striated muscles?
5. Are there any differences between cardiac and skeletal muscles? What are they?
6. Has cardiac muscle a beginning or an end?

**Упражнение 3. Выберите правильный вариант ответа.**

1. That film was very (depressing/depressed)!
2. The trip was (exhausting / exhausted)!
3. It's so (frustrating/frustrated)! I can't remember this text.
4. This lesson is so (boring / bored)!
5. The airplane moved in a rather (alarming / alarmed) way.
6. The little boy was (frightening/frightened) when he saw a spider.

**Text**

**THE SKELETON**

The skeleton is composed of bones. In the adult the skeleton has over 200 bones. The bones of the skull consist of cranial and facial parts. There are 26 bones in the skull. The bones of the trunk are: the spinal column or the spine and the chest (ribs and the breastbone). The spine consists of the cervical, thoracic, lumbar and sacral vertebrae and the coccyx.

The vertebra is a small bone, which is formed by the body and the arches. All the vertebrae compose the spinal column or the spine. There are 32 or 34 vertebrae in the spine of the adult. In the spinal column there are seven cervical vertebrae, twelve thoracic vertebrae five lumbar, five sacral vertebrae and from one to five vertebrae which form the coccyx. The cervical part of the spine is formed by seven cervical vertebrae. Twelve thoracic vertebrae have large bodies. The lumbar vertebrae are the largest vertebrae in the spinal column. They have oval bodies. The chest (thorax) is composed of 12 thoracic vertebrae, the breastbone and 12 pairs of ribs. The breastbone is a long bone in the middle of the chest.

The lower extremity consists of the thigh, leg and foot. It is connected with the trunk by the pelvis. The upper extremity is formed by the arm, forearm and hand. It is connected with the trunk by the shoulder girdle. The bones of the skeleton are connected together by the joints or by the cartilages and ligaments. The bones consist of organic and inorganic substance.

## The structure of the Human Skeleton

The skeleton consists of bones and constitutes the framework, which sustains the softer parts of the human organism. The backbone or the spine serves as the support to the body. It consists of thirty-three to thirty-four joints or vertebrae. In a man there are seven cervical vertebrae, twelve dorsal and five lumbar. Besides, there are false vertebrae consisting of five sacral (united to form one bone, the *os sacrum*), and four or five coccygeal or caudal vertebrae. The sacrum forms the basis of the vertebral column.

There is a foramen, or a hole in every vertebra, between its body (that is, the thickened front part) and processes. These foramina correspond with each other through all the vertebrae forming a long bony pipe, or canal, which contains the spinal marrow or the spinal cord. A substance (*fibrocartilage*) forms a kind of partition the intervertebral discs between the vertebrae uniting them and lending a certain degree of flexibility to the vertebral column. The vertebrae and their processes afford attachments for a number of muscles and ligaments and also passages for the blood vessels, and for the nerves that pass out of the spine. Twelve pairs of elastic ribs extend outward and forward from the vertebral column forming the framework of the thorax, which affords protection to the heart, lungs and other internal organs. On the upper part of the back there are two triangular bones, the shoulder blades or scapulae. Each shoulder blade is connected with the clavicle or collarbone, which is jointed at the other end to the breastbone (sternum). The shoulder blades and the clavicles form a kind of arch inclosing the upper part of the breast, the thoracic girdle, to which the upper limbs are attached. The arch of the lower extremities is the pelvic girdle.

The skull, or the cranium, is a bony case that forms the framework of the head and encloses the brain. It consists of eight bones, namely, the frontal and occipital bones, upon the fore and back part; the two temporal and parietal bones, forming the temples and the sides of the skull; the sphenoid bone of the base of the skull; and the ethmoid bone at the top of the root of the nose, through which the olfactory nerves pass.

### Exercise 1. Закончите предложения, заменив русские слова в скобках их английскими эквивалентами.

- 1.The skeleton consists of bones and constitutes (**остов**) which sustains the (**мягкие части**) of the human body.
- 2.(**Позвоночник**) or the spine serves as support to the body.
- 3.In a man (**имеются**) seven cervical vertebrae, twelve (**грудных**), five (**шейных**).
- 4.There is (**отверстие**) or hole in every vertebra, between the body and processes.
- 5.The vertebra and their processes afford (**прикрепление**) for a number of muscles and (**связок**).
- 6.On the upper part of the back there are two flat (**треугольные кости**), the shoulder blade or (**лопатки**).
- 7.The arch of the lower extremities is (**тазовый пояс**).
- 8.The skull or the cranium is (**костный каркас**) that forms the framework of the head and (**включает**) the brain.

### Exercise 2. Найдите в тексте эквиваленты следующих слов и словосочетаний. Составьте предложения по содержанию текста.

- позвоночник состоит из 33 или 34 позвонков;
- имеются ложные позвонки;
- крестец образует основу позвоночного столба;
- отверстия совпадают друг с другом;
- канал, который содержит спинной мозг;
- позвонки и их отростки дают крепления;
- на верхней части спины имеются две треугольные кости;
- лопатки и ключицы образуют арку;
- дуга нижних конечностей – тазовый пояс;
- череп состоит из восьми костей.

**Exercise 3. Ответьте на вопросы к тексту «The Structure of the Human Skeleton».**

- 1.What does the skeleton consist of?
- 2.What is the function of the spine?
- 3.Does the spinal column consist of a single elongated bone or a number of independent bones?
- 4.What are the independent irregular bones composing the spinal column termed?
- 5.How many vertebrae are there in man? (state the names and the number of various vertebrae)
- 6.What are the principal parts of a typical vertebra? (the body, the processes)
- 7.What is a foramen?
- 8.The vertebral foramina are placed one above another, aren't they?
- 9.What is located in the canal formed by the vertebral foramina?
- 10.What are the vertebrae connected to one another by?
- 11.The vertebrae afford areas for the attachments of muscles and passages for bloodvessels and nerves, don't they?
- 12.What do we call the elastic arches of bone, which are connected behind with the vertebral column and form a large part of the skeleton of the thorax?
- 13.How many ribs are there on each side?
- 14.What internal organs do the ribs afford protection to?
- 15.What bones form the shoulder or thoracic girdle?
- 16.What girdle are the lower extremities attached to?
- 17.What is the skeleton of the head termed?
- 18.State the names of the bones composing the skull.

**Exercise 4. Исправьте ошибки в предложениях.**

1. What is you doing now?
2. I has never met a famous person before.
3. They don't students.
4. I doesn't like horror films.
5. They buyed a car yesterday.
6. We will flying to Madrid tomorrow.
7. Where are my money?
8. They didn't invited him to the party.
9. This man aren't my father.
10. We wasn't at home last evening.

**Text**  
**SKULL**

**1. Отработайте чтение слов. Переведите слова на русский язык.**

Skull, cavity, brain, orbit, internal, face, ear, membrane, middle, substance.

**2. Укажите словообразовательные элементы. Переведите слова на русский язык.**

Including, firmly, enclose, eyeball, spongy, called, mucous, lining.

**3. Назовите вторую и треть форму следующих глаголов.**

to be	to hold	to cover
to make	to consist	to suffer
to deal	to call	to fill
to include	to have	to tell
to knit	to find	to begin
to take	to form	to come
to build	to develop	to give
to become	to see	to hear
to contain	to know	

**4. а) Повторите модели построения предложений в страдательном залоге в Present Simple, Past Simple, Future Simple.**

**б) Сравните выделенные глаголы в парах предложений и укажите разницу между ними. Переведите предложения на русский язык.**

1. Scientists **know** fundamental things. Fundamental things **are known** by scientists.

2. Scientists **discovered** cells three centuries ago. Cells **were discovered** by scientists three centuries ago.

3. Scientists **will discover** new phenomena. New phenomena **will be discovered** by scientists.

**5. Изложите следующую информацию в страдательном залоге, сохранив временную форму глагола. Переведите предложения на русский язык.**

1. Twenty-nine bones make the skull.

2. The cranial cavity contains the brain and its membranes.

3. They showed her the easiest way to do it.

4. Doctor Below analyzed many complex problems.

5. The students will learn the structure of the skull at the lesson.

6.This researcher will suggest a new technique of curing meningitis.

7.The increase of temperature will influence the medium.

**6.Найдите в тексте предложения с глаголами в страдательном залоге, переведите их на русский язык.**

### **Skull**

The skull is the skeleton of the head and face. The skull is made of twenty-nine bones including the mandible, the hyoid bone and the auditory ossicles (ear bones). Twenty-one bones are so firmly knit together that they are taken apart with difficulty; they are built together in such a way that they enclose one large cavity and three smaller ones. The large cavity is called the cranial cavity, and contains the brain and its membranes; the smaller cavities are the cavities of the nose, and the two orbits, which hold the eyeballs. There are lesser cavities contained within certain of the skull bones; these cavities are the middle-ear, the internal ear, and the air-sinuses. The skull bones consist of two plates or tables of compact substance that enclose a layer of spongy substance between them; in skull-bones this substance is called diploe. In some of them the diploe is absorbed leaving cavities or air-sinuses between the tables of compact bone; the sinuses communicate with the cavity of the nose and have a mucous lining continuous with that of the nose.

**7.Закончите предложения, используя подходящие по смыслу слова или словосочетания в скобках. Переведите предложения на русский язык.**

1.The skull is the skeleton of...(the head and face, the limbs).

2.The large cavity is called...(the cavity of the nose, the cranial cavity).

3.The skull is made of... (twenty-nine bones, a mucous lining).

4.The bones of the skull enclose... (one large cavity and three smaller ones, two large cavity and one smaller one).

**8.Найдите в тексте английские эквиваленты следующих слов и словосочетаний.**

**Составьте с ними предложения по содержанию текста.**

-образован 29 костями;

-нижняя челюсть, подъязычная кость, слуховая косточка;

-черепная полость;

-глазное яблоко;

-названа диспноэ;

-пазуха сообщается с полостью носа.

**9.Ответьте на следующие вопросы, используя информацию текста «Skull».**

1.What is the skull?

2.How many bones is the skull made up of?

3.Why are the bones of the skull taken apart with difficulty?

4.What cavities does the skull consist of?

5.What substance is called diploe?

**10.Поставьте вопросы к выделенным словам:**

1.A number of studies is presented **in this journal**.

2. The new forms of treatment are discussed **by doctors**.
3. **The process of mitosis** is studied by physiologists.
4. The paper was followed by a **series of reports**.
5. A typical experiment was carried out **as follows**.
6. The sick man was taken **to hospital** in an ambulance.
7. **Much** effort will be made to lower the incidence of infectious diseases.
8. **This** theory will be referred to in the journal.
9. **This work** will be much spoken about.

### 11. Переведите предложения на английский язык.

1. Скелет состоит более чем из 200 отдельных костей.
2. Новый метод был использован врачами в качестве комплексного лечения этого заболевания.
3. Череп - это скелет головы и лица.
4. Сердечнососудистая система подвергнется негативному воздействию при использовании этого лекарства.
5. Большое внимание будет уделяться лечению инфекционных заболеваний.
6. Вирус гриппа был выделен впервые в 1934.
7. Среди населения эффективные профилактические меры проводятся.
8. Этот учебник написан для студентов-медиков

### Text THE BRAIN

The brain is the most wonderful organ in the human body. It consists of about 12 billion cells and weighs about 1 kilogram. It is soft and spongy with 3 membranes and fluid in between the first and second membranes.

The brain is the center of a wide system of communication. It controls the body functions. It keeps all the body parts working together. Thousands of stimuli come into the brain through the spinal cord. The messages come to the brain from our eyes, ears and other sense organs for pain, temperature, smell and other feelings. All the stimuli are analyzed and then the brain sends orders through the spinal cord to different parts of the human body. Due to these orders we eat, move, hear, see and do many other things.

There are special areas in the brain which control vision, hearing, physical movements and even emotions.

#### Words:

1. to weight - весить
2. stimuli - мн.ч. побудители, стимулы, послания
3. spinal cord - спинной мозг
4. area – область

#### Exercise 1. Find English equivalents. Найдите английские эквиваленты.

Самый замечательный орган; состоит; весит; центр системы; функции организма; через спинной мозг; органы чувств; анализируются; посылает приказы; особые области в мозге.

#### Exercise 2. Find Russian equivalents. Найдите русские эквиваленты.

The human body; soft and spongy; fluid; through the spinal cord; stimuli are analyzed; sends orders; due to these orders.



**Exercise 3. Answer the questions. Ответьте на вопросы:**

1. The brain is the most wonderful organ in the human body, isn't it?
2. Is the brain soft and spongy?
3. What is the main function of the brain?
4. Do thousands messages come to the brain each minute?
5. Are the messages analyzed in the brain?
6. What does the brain send to different parts of the body?
7. Are there special areas in the brain? What do they control?

**Exercise 4.**

1. Teddy's words made me (feel) uncomfortable.
  - a) to feel
  - b) feeling
  - c) feel
2. Mrs. Pottson allowed her guests (smoke) in the living-room.
  - a) to smoke
  - b) smoking
  - c) smoke
3. Has the secretary come yet? I want to have my papers (type).
  - a) to type
  - b) type
  - c) typed
4. I watched my cat (play) with her kittens. I couldn't tear myself away from that funny sight. '
  - a) played
  - b) playing
  - c) to play
5. Granny didn't want my Mom (marry) my Dad.
  - a) marry
  - b) to marry
  - c) married
6. Our English teacher told us (not / feel) shy and speak English as much as possible.
  - a) not to feel
  - b) not
  - c) felt
7. I have to get my photograph (take) for a new passport.
  - a) took
  - b) take
  - c) taken
8. There wasn't much traffic in the street. I saw a little girl (cross) the road.
  - a) crossed
  - b) cross
  - c) to cross
9. I have never heard Helen (sing).
  - a) sang
  - b) sings
  - c) singing
10. Mary would like her brother (avoid) Tom's company.
  - a) to avoid
  - b) avoid
  - c) avoided

**Text**  
**VERTEBRA**

**1. Отработайте чтение слов. Переведите слова на русский язык.**

Human, body, anterior, canal, spine, skeleton, arch, nerve, column, bone, head, vessel, axis, posterior, trunk, limb.

**2. Укажите словообразовательные элементы. Переведите слова на русский язык.**

Spinal, structural, eyes, ears, adapted, divided, specially, primarily, locomotion.

**Vocabulary List**

back	- спина
bilateral	- билатеральный, двусторонний
human	- человек, человеческий
to interpose	- вставлять, вводить
to lead	- приводить
to lodge	- помещать
pillar	- опора, столб, колонна, ножка
to serve	- служить
to term	- обозначать

**3. Переведите словосочетания на русский язык:**

Human beings, vertebral column, total body weight, separate bones, intervertebral discs, continuous pillar, central axis, spinal cord, upper and lower limbs, terminal segment.

**4. Прочитайте предложения и ответьте на вопрос: Какую функцию Past Participle выполняет в каждом из этих предложений?**

1. The demonstrated techniques are new.
2. The reviews included covered new trends in science.
3. The method carried out in our laboratory was developed by professor Nekton.
4. When translated the paper was read by many doctors.

**5. Переведите следующие предложения на русский язык, обращая внимание на Past Participle:**

1. The problem discussed is of interest.
2. This problem, when discussed, attracted much attention.
3. The problem discussed attracted much attention.
4. This problem was discussed yesterday.
5. The problem discussed by researchers is interesting.

**6.a) Прочтите тексты и найдите предложения, содержащие Past Participle. б) Переведите предложения, содержащие Past Participle на русский язык.**

### **Vertebra**

All human beings belong to the group of vertebrates, and thus a prominent structural characteristic of the human body is a flexible rodlike spine or vertebral column that runs through the long axis of the body. This vertebral column is a part of a well-developed internal framework or skeleton, which makes up about 20 percent of the total body weight and is composed of more than 200 separate bones. A typical vertebra is made up of two principal parts, an anterior or ventral, termed the body and a posterior or dorsal, termed the vertebral arch; these enclose a foramen, which is named the vertebral foramen.

In the articulated column the bodies and the intervertebral discs interposed between them form a continuous pillar which constitutes the central axis of the body and in man, supports and transmits the weight of the head and trunk. The vertebral foramina placed one above another, constitute a canal in which the spinal cord is lodged and protected. Between contiguous vertebrae two intervertebral foramina one on each side, open into the canal and serve for the transmission of the spinal nerves and vessels.

A human being, like other vertebrates, is characterized by bilateral symmetry: an imaginary plane, passing through the spine from front to back, would divide the body into two halves that are roughly mirror images of each other. Thus, main body parts and organs occur in pairs - two eyes, two ears, two limbs and so forth.

### **CHEST**

Chest, or thorax, is the upper part of the trunk. It is enclosed by the breast-bone and rib-cartilages in front, by the twelve ribs on each side, and by the hinder parts of these along with the spinal column behind. Above, it is continued by an opening a few inches wide, through which the windpipe, gullet, and large blood-vessels pass into the root of the neck; while, below, its cavity is separated from that of the abdomen by a thin dome-shaped plate of muscle, the diaphragm or midriff. Between each pair of ribs lie two thin muscular layers, the intercostal muscles, which fill up the spaces between the ribs, and move the chest wall in respiration. Its outlines are further covered and molded behind by four layers of muscles, sometimes several inches thick, and by the shoulder-blade with its muscles, and in front by the two pectoral muscles which pass from the ribs to the upper arm. Further, there is a more or less plentiful layer of fat beneath the skin.

The chest contains the lungs, one on each side, with the end of the windpipe, which divides into right and left bronchial tubes, to the two lungs; the heart in the middle and projecting on the left almost to the nipple, with the great vessels which carry blood from and to it; the gullet, which passes down on the left side of the spinal column to enter the abdomen through an opening in the diaphragm; the thoracic duct of the absorbent system, which runs up to enter a vein in the neck; and various important nerves which control the contained organs. Each lung is enclosed in a smooth, double membrane, the pleura, and the heart in a similar membrane, the pericardium.

**Exercise 1. Найдите в тексте предложения (или части сложных предложений), отражающие основную идею каждого абзаца. Обоснуйте ваш выбор.**

**Exercise 2. Закончите предложения, заменив русские слова и словосочетания их английскими эквивалентами. Прочтите полученный текст и переведите его на русский язык. Составьте специальные вопросы по содержанию текста.**

The human body (можно разделить на) three main parts: the head, (туловище) and limbs. The trunk is divided by (диафрагмой) into (две полости). The upper part of the trunk is called (грудная клетка). The chest (состоит из) thoracic vertebrae, the breastbone and (ребер). Between each pair of ribs lie two thin (мышечных слоя), (который заполняет) the spaces between ribs. Each rib is composed of (головки, шейки, и тела). (Сердце и легкие) are in the (грудной клетки).

The lungs play the (самую важную) function of vital activity, i.e. (дыхания). The air enters through (нос) and passes down the throat, larynx, and (дыхательное горло). It reaches the lungs by the (бронхиальные ветви). So the process of (газообмена) takes place in the lungs.

**Exercise 3. Найдите в тексте английские эквиваленты следующих слов и словосочетаний и составьте с ними предложения по содержанию текста.**

- верхняя часть туловища;
- 20 ребер с каждой стороны;
- дыхательное горло, пищевод;
- во время дыхания;
- грудные мышцы;
- два легких;
- позвоночный столб;
- важные нервы;
- перикард.

**Exercise 4. Переведите предложения на английский язык.**

1. Составными частями скелета являются череп, позвоночник и кости верхних и нижних конечностей.
2. Туловище делится диафрагмой на две части.
3. Верхняя часть туловища называется грудной клеткой.
4. Нижняя часть туловища называется брюшной полостью.
5. Легкие находятся в грудной клетки.
9. Легкие выполняют самую важную функцию жизненной активности, т.е. дыхание.

**Exercise 5. Ответьте на вопросы к тексту " Chest".**

1. What is the upper part of the trunk?
2. What layer fills up the spaces between the ribs?
3. What is the chest divided into by diaphragm?
4. What does the chest contain?
5. How do the lungs carry oxygen?

**Exercise 6.**

1. We expected the Harrisons (arrive) later than usual.
  - a) to arrive
  - b) arrive
  - c) arrived
2. What makes you (do) such rash actions?
  - a) do
  - b) to do
  - c) doing
3. He made me (do) it all over again.
  - a) to do
  - b) do
  - c) doing
4. Her father made her (learn) the lessons.
  - a) learn
  - b) to learn
  - c) learning
5. If you want us (make) the work quickly you should let us (start) at once.
  - a) make, to start
  - b) to make, start
  - c) making, starting
6. Would you like me (read) now?
  - a) to read
  - b) read
  - c) reading
7. They won't let us (leave) the classroom till our control work has been checked.
  - a) to leave
  - b) leave
  - c) leaving
8. He wouldn't let the children (play) in his study.
  - a) play
  - b) to play
  - c) playing
9. Please let me (know) the results of your exam as soon as possible.
  - a) to know
  - b) know
  - c) knowing
10. He made us (wait) for two hours.
  - a) to wait
  - b) wait
  - c) waiting

## Text

### INTERNAL ORGANS

All internal organs are situated in the chest and abdomen. The chest is separated from the abdomen by the diaphragm. The principal organs of the chest are the gullet, the heart and the lungs. The gullet connects the pharynx and the stomach. There are two lungs - one in each half of the chest. They differ in size. The right lung is larger than the left one. There is the heart between the lungs behind the breastbone. The heart pumps the blood to the whole body. The lower part of the trunk is the abdominal cavity. The principal organs here are the stomach, the liver, two kidneys, the gallbladder, the pancreas, the spleen, the small and large intestines, the bladder and internal sex glands. There is the liver with the gallbladder in the right upper abdominal part. The liver is the largest and heaviest organ in the body. It works over all the products of digestion. The liver destroys poisons and bacteria which get into the blood. There is the stomach, the pancreas and the spleen in the left upper part of the abdominal cavity. Behind them there are the right and left kidneys at the back. The small and large intestines occupy all the lower abdomen. Here is also the bladder and sex glands. Each internal organ of the body plays a specific role in the organism. The branch of medicine which studies internal organ diseases is called internal medicine.

Words:

1. chest - грудь
2. abdomen – живот
3. diaphragm - диафрагма
4. gullet - пищевод
5. lung - легкое
6. trunk - туловище
7. pharynx - глотка
8. stomach - желудок
9. breastbone - грудина
10. abdominal cavity - брюшная полость
11. liver - печень
12. kidney - почка
13. gallbladder - желчный пузырь
14. pancreas - поджелудочная железа
15. spleen - селезенка
16. small and large intestines - тонкий и толстый кишечник
17. bladder - мочевой пузырь
18. internal sex glands - внутренние половые железы

#### **Exercise 1. Find English equivalents. Найдите английские эквиваленты.**

расположены в области груди и живота; перерабатывает все продукты пищеварения; яды; бактерии; нижняя часть туловища; правая верхняя часть брюшной полости; самый большой и тяжелый орган тела

#### **Exercise 2 Find Russian equivalents. Найдите русские эквиваленты.**

Principal organs; behind the breastbone; to pump the blood; lower part of the trunk; the right and left kidneys at the back; intestines occupy all the lower abdomen; internal medicine

#### **Exercise 3 Answer the questions. Ответьте на вопросы.**

1. What are the principal organs of the chest?
2. What does the gullet connect?

3. Where is the heart?
4. What are the principal organs of the abdominal cavity?

**Exercise 4.** Put the verbs in brackets in the correct tense form (*Present Simple, Present Perfect, Present Continuous, Past Simple, Past Continuous*).

1. Alice ... (not to take) the bus to school every day. She usually ... (to walk) to school...
2. (to take) ... you the bus to get to school or ... (to walk) you?
3. Who is this man? I ... (to think) that I ... (to know) him, but I ... (to forget) his name.
4. The children ... (to have) a good time in the park yesterday. They ... (to give) small pieces of bread to the ducks. Then they ... (to take) pictures of themselves.
5. Where are the children? They ... (to watch) TV in the room now. Some minutes ago they ... (to play) a game.
6. Now I am in my class. I.. (to sit) at my desk. I always ... (to sit) at the same desk.

### Text CIRCULATORY SYSTEM

The circulatory system is made up of the vessels and the muscles that help and control the flow of the blood around the body. This process is called circulation. The main parts of the system are the heart, arteries, capillaries and veins. As blood begins to circulate, it leaves the heart from the left ventricle and goes into the aorta. The aorta is the largest artery in the body. The blood leaving the aorta is full of oxygen. This is important for the cells in the brain and the body to do their work. The oxygen rich blood travels throughout the body in its system of arteries into the smallest arterioles.

On its way back to the heart, the blood travels through a system of veins. As it reaches the lungs, the carbon dioxide (a waste product) is removed from the blood and replaced with fresh oxygen that we have inhaled through the lungs.

**Arteries.** Arteries are tough, elastic tubes that carry blood away from the heart. As the arteries move away from the heart, they divide into smaller vessels.

The largest arteries are about as thick as a thumb. The smallest arteries are thinner than hair. These thinner arteries are called arterioles. Arteries carry bright red blood! The color comes from the oxygen that it carries.

**Veins.** Veins carry the blood to the heart. The smallest veins, also called venules, are very thin. They join larger veins that open into the heart. The veins carry dark red blood that doesn't have much oxygen. Veins have thin walls. They don't need to be as strong as the arteries because as blood is returned to the heart, it is under less pressure.

**Heart.** Heart is the strongest muscle? Heart is divided into two sides. The right side pumps blood to your lungs where it picks up oxygen. The left side pumps oxygen-soaked blood out to your body. They do not work on their own, but together as a team. The body's blood is circulated through the heart more than 1,000 times per day. Between five and six thousand quarts of blood are pumped each day. Your heart is about the same size as a fist.

Words:

1. to make up - составлять
2. vessel - сосуд
3. flow - течь
4. circulation - кровообращение
5. ventricle - желудочек
6. to remove - перемещать
7. replace - менять
8. to inhale - вдыхать
9. tough - жесткий

10. tube - труба
11. join - соединять
12. wall-стенка
13. to pump - качать
14. pick up - собирать
15. oxygen-soaked - кислородосодержащий
16. quart – кварта (единица объема в Великобритании)
17. fist – кулак

**Exercise 1. Find English equivalents. Найдите английские эквиваленты.**

Кровообращение, желудочек, свежий кислород, самая большая артерия, перекачивает кровь, работают в команде, красные кровяные тельца, белые кровяные тельца, тромбоциты, размером с кулак.

**Exercise 2. Find Russian equivalents. Найдите русские эквиваленты.**

Veins, arteries, nutrients, capillaries, transport, oxygen, energy, dark, heat, circulatory, lungs, carbon dioxide, bright, blood, heart, pumped, intestine, atmosphere.

**Exercise 3. Answer the questions. Ответьте на вопросы.**

1. What does Circulatory System consist of?
2. What is circulation?
3. What is the largest artery in the body?
4. What do know size of your heart?
5. What are the main elements of blood?
6. How many liters of blood are in the human body?

**Exercise 3. Вставьте соответствующие предлоги времени вместо пропусков.**

- 1 Jennifer is going to come here ... the eighth of December. – Дженнифер собирается приехать сюда восьмого декабря.
- 2 Our pupils had the last test ... Wednesday. – Последняя контрольная работа была у наших учеников в среду.
- 3 Jane`s elder brother was born ... January, 1999. – Старший брат Джейн родился в январе 1999 года.
- 4 My relatives will fly to Tunisia ... five days. – Мои родные полетят в Тунис через пять дней.
- 5 Our children stay in the swimming-pool ... two hours. – Наши дети останутся в бассейна на два часа.
- 6 George got up ... 04.40 a.m. a day before yesterday. – Позавчера Джордж встал в 04.40 утра.
- 7 Renate was going to the library ... classes. – После уроков Рената собиралась пойти в библиотеку.
- 8 Their boss will be busy ... 16.00 ... 19.00. – Их босс будет занят делами с 16.00 до 19.00.
- 9 Your parents will stay there ... the performance. – Во время представления твои родители будут находиться там.
- 10 Jack wants to go to Africa ... the long cold winter. – Перед долгой холодной зимой Джек хочет съездить в Африку.
- 11 You will get your invitation ... noon. – Ты получишь свое приглашение в районе полудня.
- 12 My cousin has been working in this famous company ... 2005. – Мой двоюродный брат работает в этой знаменитой компании с 2005 года.



13 Sarah will not be able to read that report ... such a short break. – Сара не будет в состоянии прочитать тот доклад в течение такого короткого перерыва.

14 They came back to their hotel ... seven o'clock p.m. – В районе семи часов вечера они возвратились в свой отель.

15 Gloria helped them ... 06.00 a.m. that morning. – В то утро Глория помогала им с шести часов (утра).

16 He has driven ... five hours. – Он ездит на машине уже пять часов подряд.

17 That person went to Germany ... seven weeks. – Тот человек ездил в Германию на семь недель.

## **Text** **BLOOD**

Blood contains a fluid called plasma plus microscopical cellular elements: erythrocytes, leucocytes, and thrombocytes.

Erythrocytes are red blood cells of which 4.5 – 5 million are found in each cubic millimeter. These cells are made in the bone marrow and are important in transporting oxygen from the lungs through the blood stream to the cells all over the body. The oxygen is then used up by body cells in the process of converting food to energy (catabolism).

Hemoglobin, containing iron, is an important protein in erythrocytes, which helps in carrying the oxygen as it travels through the blood stream. Erythrocytes also carry away carbon dioxide (CO<sub>2</sub>), a waste product of catabolism of food in cells, from the body cells to the lungs. On arriving there it is expelled in the process of breathing.

Leucocytes are white blood cells from 4.000 to 10.000 per cubic millimeter existing in several types: granulocytes and agranulocytes, which are also subdivided into different types.

Granulocytes are cells with granules in their cytoplasm formed in the bone marrow. There are three types of granulocytes: eosinophils, basophils, neutrophils. Agranulocytes are produced in lymph nodes and spleen. There are two types of agranulocytes: lymphocytes and monocytes. Thrombocytes or platelets are tiny cells formed in the bone marrow. They are necessary for blood clotting. Their number is 400.000 per cubic millimeter. The plasma is the fluid portion before clotting has occurred. The serum is the fluid portion of blood remaining after the coagulation process is completed.

The body contains about five liters of blood kept at a constant temperature of 37°C. Blood consists of three different types of cell floating in a liquid called plasma. The blood cells are known as red cells, white cells and platelets. Red cells and platelets are unique among body cells in having no nucleus. Blood cells are so small that one cubic millimeter of blood (the size of a pin head) contains about five million red cells, 7.000 white cells and 250.000 platelets. The red blood cells contain a pigment called hemoglobin, which gives the blood its red color. The main function of red cells is to carry oxygen to the body cells.

For its journey from the lungs to the body cells, oxygen combines with hemoglobin of the red cells. It is then released from the hemoglobin when the body cells are reached. Some people do not have enough hemoglobin in their red cells and are consequently short of oxygen. This condition is called anemia and such people tire easily, become breathless on exertion and have a pale complexion.

They need special care during general anesthesia. The white blood cells defend the body against disease. They do this by attacking germs and repairing damage.

The function of platelets is to stop bleeding. They do this in two ways: by blocking the cut blood vessels; and by producing substances, which help the blood to clot.

**Words:**

1. contain - содержать
2. plasma - плазма
3. microscopical - микроскопический
4. element - элемент
5. erythrocyte - эритроцит
6. leucocyte - лейкоцит
7. thrombocyte - тромбоцит
8. bone marrow - костный мозг
9. transport - транспортировать, переносить
10. convert - преобразовывать, превращать
11. carry - переносить
12. arrive - прибывать
13. expel - вытеснять, выводить
14. catabolism - катаболизм
15. hemoglobin (haemoglobin) - гемоглобин
16. agranulocyte - агранулоцит
17. cytoplasm- цитоплазма
18. granulocyte - гранулоцит
19. eosinophil - эозинофил
20. basophil - базофил
21. neutrophil - нейтрофил
22. node - узел
23. spleen - селезенка
24. lymphocyte - лимфоцит
25. monocyte - моноцит
26. platelet - тромбоцит
27. tiny - крошечный
28. blood clotting - свертываемость крови
29. occur - происходить, случаться
30. remain - оставаться
31. coagulation - коагуляция
32. complete - заканчивать

**Exercise 1. Find English equivalents. Найдите английские эквиваленты.**

Микроскопические клеточные элементы, в каждом кубическом миллиметре, через кровоток, по всему организму, процесс превращения пищи в энергию, выводить, продукт отхода, выталкивать, несколько видов, лимфатические узлы, крошечные клетки, свертываемость крови, завершаться

**Exercise 2. Find Russian equivalents. Найдите русские эквиваленты.**

To call, to be found, bone marrow, to be used, to convert, iron, to be expelled, spleen, a fluid portion, coagulation process, three types of granulocytes, tiny cells, blood clotting, the main function, five liters of blood.

**Exercise 3. Answer the questions. Ответьте на вопросы.**

1. What does blood contain?
2. How many erythrocytes can be found in each cubic millimeter?
3. Where are these cells made?
4. What role does hemoglobin play?
5. What are the types of leucocytes?
6. Where are agranulocytes produced?

7. What types of granulocytes do you know?
8. What organ forms thrombocytes?
9. How many platelets are there in one cubic millimeter?
10. What is the difference between the plasma and serum?

**Exercise 4. Раскройте скобки употребляя глаголы в Present Simple, Future Simple, Present Continuous или поставьте конструкцию to be going + to inf.**

1. When you \_\_\_\_\_ (know) your examination results?
2. Kathy \_\_\_\_\_ (travel) to Caracas next month to attend a conference.
3. Do you have any plans for lunch today? — I \_\_\_\_\_ (meet) Shannon at the Sham Cafe in an hour. Do you want to join us?
4. I \_\_\_\_\_ (buy) a bicycle for my son for his birthday next month. Do you know anything about bikes for kids? — Sure. What do you want to know?
5. How do you like your new job? — I don't start it until tomorrow. I \_\_\_\_\_ (give) you an answer next week.
6. I suppose he \_\_\_\_\_ (talk) about his new invention.
7. Why are you packing your suitcase? — I \_\_\_\_\_ (leave) for Los Angeles in a couple of hours.
8. My regular doctor, Dr. Jordan, \_\_\_\_\_ (attend) a conference in Las Vegas next week, so I hope I \_\_\_\_\_ (meet) her partner, Dr. Peterson, when I \_\_\_\_\_ (go) for my appointment next Friday.
9. What time class \_\_\_\_\_ (begin) tomorrow morning? — It \_\_\_\_\_ (begin) at eight o'clock sharp.
10. The coffee shop \_\_\_\_\_ (open) at seven o'clock tomorrow morning. I'll meet you there at 7:15. — Okay. I'll be there.

**Text**

**STRUCTURE OF THE BLOOD VESSELS**

**Arteries.** The arteries are a series of vessels carrying blood from the heart to the capillaries. The caliber of the arteries decreases gradually when followed toward the capillaries. The largest arteries, the aorta and the pulmonary artery, have a lumen about 25 mm. (1 inch) in diameter and the smallest arteries about 0.3 mm. in diameter, or smaller.

Three layers can be distinguished in the walls of every artery: (1) the inner coat, tunica intima, (2) the intermediate coat or tunica media and (3) the external coat or tunica adventitia.

The tunica intima is composed of a layer of endothelial cells and a conspicuous band of elastic tissue. In the larger vessels there is a fine network of connective tissue between the endothelial and elastic layers.

The intermediate coat or tunica media consists mainly of smooth muscle and elastic tissue. Smooth muscle tissue predominates in the small arteries and elastic tissue in the large arteries, such as the aorta.

The tunica adventitia is made up of collagenous and elastic fibers in loose arrangement. In small and medium-sized arteries the tunica adventitia is as thick as, and sometimes thicker than, the media but in arteries of large size the external coat is very thin.

**Veins.** The veins comprise a system of vessels which collect the blood from the capillaries and return it to the heart. The structure of veins resembles that of the arteries and usually the three

layers, intima, media and adventitia can be distinguished. The veins, however, have thinner walls than the arteries and they are less elastic. This is due to the poorly developed middle layer which is very thin and contains very little smooth muscle and elastic tissue.

Some veins are equipped with valves. They appear as semilunar pockets on the inner surface of the vein and are placed with their free edges in the direction of the blood flow, so that flow toward the heart is not impeded but flow away is prevented. Valves are more numerous in the veins of the lower extremities.

**Capillaries.** The capillaries lie between the terminal branches of the arteries and the beginning of the veins. There the blood bed is tremendously expanded, each small artery branching into a number of capillaries which interlace to form an intricate network.

The capillaries are extremely fine thin tubes, the walls consisting of a single layer of flat endothelial cells. The diameter of the capillaries in various parts of the body varies slightly but is closely related to the size of the red blood corpuscle, averaging about 8 microns. When viewed through the microscope, the red blood cells shine through the transparent walls of the capillary and usually they are seen passing in single file.

The capillaries are the functional units of the circulatory system. It is through their walls that exchanges take place between the blood and tissues. The blood flows along rapidly in the arteries and veins but when it reaches the capillary areas, where it flows into many tubes of small caliber, it is greatly slowed down and the stream passes leisurely through the network of vessels. This gives time for the exchange of materials to occur.

**13.Используя текст «STRUCTURE OF THE BLOOD VESSELS», составьте устные сообщения по темам:**

- Arteries
- Veins
- Capillaries.

**Text  
HEART**

The heart is simply a pump, which circulates blood throughout the body.

Tubes called blood vessels carry it from the heart to all parts of the body and back again. This round trip is known as the circulation. Vessels carrying blood away from the heart are known as arteries and those returning blood to the heart are known as veins.

The heart pumps blood round the body about 70 times a minute in adults. The heartbeats can be felt as the pulse where certain arteries lie just beneath the skin, and the most well – known place where this occurs is at the wrist.

The heart lies in the chest immediately behind the breast bone. It consists of two chambers, left and right, separated from each other by a wall. Each chamber is further divided into upper and lower compartments, which communicate with each by valves. Each upper compartment is called an atrium and each lower a ventricle.

Note that there is no communication at all between the left and right sides of the heart.

Heart failure, or cardiac arrest, means that the heart has stopped beating. This of course, means that no blood is being pumped round the body and death occurs in a few minutes. But as the heart is just a simple pump, it can be made to beat artificially by rhythmically applying pressure

to the chest. This squeezes the heart between the breast bone and forces blood out the heart into the circulation. When pressure on the chest has been relaxed, blood returns to the heart again.

**Words:**

1. can be felt as the pulse – можно определить по пульсу.
2. ately behind the breast bone – непосредственно за грудиной.
3. is further divided – далее подразделяется
4. communicate with each other – сообщаются друг с другом.
5. heart failure – паралич, остановка сердца; сердечная недостаточность.
6. as the heart is just a simple pump – поскольку сердце всего лишь простой насос.
7. pump - насос
8. circulate - циркулировать
9. tube - труба
10. carry - переносить
11. artery - артерия
12. vein - вена
13. adult - взрослый
14. pulse - пульс
15. skin - кожа
16. occur - происходить
17. wrist - запястье
18. chest - грудная клетка
19. breast - грудь
20. chamber - камера
21. valve - клапан
22. atrium - предсердие
23. ventricle - желудочек
24. death - смерть
25. apply - применять
26. pressure - давление
27. squeeze - сжимать
28. spine - позвоночник
29. relax – расслабиться

**Exercise1.** Find English equivalents. Найдите английские эквиваленты. Просто насос, кровеносные сосуды, круговое движение, известны как, у взрослых, располагаться непосредственно под кожей, где это происходит, состоит из двух камер, каждый верхний отдел, вообще нет сообщения, заставить биться искусственно, выталкивать кровь из сердца.

**Exercise2.** Find Russian equivalents. Найдите русские эквиваленты. Throughout the body, blood vessels, about 70 times a minute, immediately behind the breast bone, separated from each other, upper and lower compartments, communication, cardiac arrest, round the body, to beat artificially, pressure on the chest

**Exercise 3.** Answer the questions. Ответьте на вопросы.

1. What is heart?
2. What are tubes carrying blood called?
3. Where can the heartbeats be felt?
4. What does the heart consist of?

5. What compartments is each chamber divided into?
6. What does heart failure mean?
7. Can the heart be made to beat artificially?
8. When does blood return to the heart again?

**Exercise 3. Вставьте подходящие по смыслу предлоги вместо пропусков.**

- 1 There are very many German books ... their library. – В их библиотеке очень много немецких книг.
- 2 Our friends have seen nobody ... the beach. – Наши друзья никого не видели на пляже.
- 3 Your son dropped his ball ... the river. – Твой сын уронил в реку свой мяч.
- 4 There are no tomatoes and no cucumbers ... Jane`s plate. – На тарелке Джейн нет помидоров и огурцов.
- 5 John must put his pens ... his pencil-box. – Джон должен сложить свои ручки в пенал.
- 6 What did your teacher write ... the blackboard? – Что ваш учитель написал на доске?
- 7 Our children will see many interesting animals ... the Zoo. – Наши дети увидят в зоопарке много интересных животных.
- 8 Do you have anything ... your pockets? – У вас есть что-нибудь в карманах?
- 9 Mary doesn`t want to sit ... this chair. – Мэри не хочет сидеть на этом стуле.
- 10 Our granny is not ... the house. She is ... the garden. – Наша бабушка не в доме. Она в саду.
- 11 Jane puts newspapers and magazines ... the box. – Джейн кладет газеты и журналы в ящик.
- 12 My husband likes to sleep ... this sofa. – Мой муж любит спать на этом диване.

**Text**

**RESPIRATORY SYSTEM**

All animals need oxygen to live. Land animals get oxygen from the air. Without the oxygen in the air we cannot survive more than a few minutes. Breathing happens automatically, we do not have to even think about it.

We breathe in order to take oxygen into our bodies and get rid of carbon dioxide. The oxygen is carried in the blood to all the body's cells. The air we breathe out has 100 times more carbon dioxide than the air we breathe in.

Nose and Nasal Cavity. The respiratory system is made of body parts that are in charge of your breathing. It includes your nose and nasal cavity. You air though your nose. As you inhale, small specks of dirt are trapped by many tiny hairs in your nose. This cleans the air. The hairs stop the dirt from going further in your body. The moist inside surface in your nose traps even smaller pieces of dirt. The nasal cavity, the air passage behind the nose, plays an important role in breathing.

The nasal cavity is divided into a right and left passageway. The tissue that covers the wall of your nasal cavity contains many blood vessels. Heat from the blood in the vessels helps warm the air as you breath. Moisture is added to the air you breath by special cells in the walls of the nasal cavity. The air is warmed and moistened before it reaches your lungs.

Windpipe and Bronchial Tree. The windpipe (trachea) joins the upper respiratory tract to the lungs. If you gently touch the front of your throat you can feel the trachea. The bottom of the trachea splits into two branches called bronchi. One enters the right lung and one goes to the left lung.

The bronchial tree's job is to spread the air from the trachea over a very wide area as quickly as possible. The air passing through the windpipe divides into two branches. These divide into twigs called bronchioles. These twigs open into little bags called alveoli.

We have about 300 million alveoli (air sacs) in each lung. The alveoli gives our lungs a huge surface for absorbing oxygen from the air.

Lungs. Lungs provide the breath of life. Our lungs are about the size of a pair of footballs. They fill our chest from the neck to the ribs. The lungs are protected by our ribs. The lungs are the pickup place for oxygen and the drop off place for carbon dioxide. The lungs are always working, breathing in oxygen and breathing out carbon dioxide.

Blood is pumped into the lungs from the heart through the pulmonary arteries.

Blood with oxygen leaves the lungs through the pulmonary veins and travels to the heart.

Oxygen is the fuel that makes all the body processes run.

Words:

1. land animals –сухопутные животные
2. to survive - выживать
3. to get rid - избавляться
4. carbon dioxide – углекислый газ
5. nasal cavity носовая полость
6. to inhale - вдыхать
7. speck - покрывать
8. moist - влажный
9. surface – поверхность
10. to trap – ловить
11. passageway - отверстие
12. moisture - влага
13. to add - добавлять
14. gently – мягко
15. bottom – низ
16. to split – расщеплять
17. twig – ветка
18. to provide – обеспечивать
19. pickup – перевозка
20. pulmonary arteries – легочные артерии
21. fuel –горючее

**Exercise 1. Answer the questions. Ответьте на вопросы.**

1. What organs are made up respiratory system?
2. What do lungs provide?
3. What protect lungs?

**Exercise 2. Find Russian equivalents. Найдите русские эквиваленты.**

we cannot survive; get rid of carbon dioxide; as you inhale; small specks of dirt; the moist inside surface; moisture is added to the air you breath; Windpipe and Bronchial Tree; These divide into twigs; a huge surface for absorbing oxygen from the air; through the pulmonary arteries; oxygen is the fuel.

**Exercise 3. Open the brackets and use the Complex Object.**

1. Do you want (they / stay) at the hotel?
2. I would like (the professor / look through) my report.
3. We considered (he /be) an honest person.
4. I would like (the dress / buy) by Sunday.
5. He doesn't want (they / be late) for dinner.

#### Exercise 4.

1. Do you want them to stay at the hotel?
2. I would like the professor to look through my report.
3. We considered him to be an honest person.
4. I would like the dress to be bought by Sunday.
5. He doesn't want them to be late for dinner.

### Text LUNGS

**1. Прочтите слова вслух, обращая внимание на чтение выделенных букв и буквосочетаний.**

**Pair, discharge, way, chain, important, point, root, about, enter, surface, down, meet, reach, infant, vital, while, bulk, volume, shape, larynx, bronchi, speedily, projecting, neck, closely, quickly, children, weight, whole, whether, with.**

**2. Укажите словообразовательные элементы в следующих словах и определите, какими частями речи они являются.**

Highly, elastic, natural, resting, anterior, texture, enveloped, heavier, everywhere, rose-pink, pulmonary, importance, inrush, finest, irregular, discharge, fibrous, layer, medium-sized, function, moisture, harmless, unknown, truthful, disbelieve.

#### Vocabulary list

apex – верхушка

bronchi – бронхи

border – граница, край

bulk – масса, основная часть чего-либо; объем, вместимость

collapse – коллапс (острая сосудистая недостаточность, обусловленная уменьшением массы циркулирующей крови);

c.of the lung спадение (сжатие) легкого

envelop – оболочка, пленка

expectoration – отхаркивание, (выделенная) мокрота

infundibula – анат. воронка

larynx – гортань

lobe – анат. доля I

obule – анат. долька

neck – шея, шейка

to occupy – занимать

to separate – отделять

throat – горло

upwards – вверх, свыше

surface – поверхность



hollow – полый (adj), опустошать, опорожнять (v)

split – раскалывать(ся), расщеплять(ся)

### **3.Переведите предложения на английский язык, используя Vocabulary list.**

- 1.Органы дыхания образованы гортанью, трахеей, легкими, плеврой.
- 2.Гортань - это орган голоса.
- 3.Легкие — основные органы дыхания.
- 4.Оба легких покрыты тонкой серозной мембраной, плеврой.
- 5.Каждое легкое конической формы.
- 6.Легкие делятся на доли, которые, в свою очередь, делятся на дольки.
- 7.В процессе дыхания воздух поступает через нос и проходит через горло, гортань, трахею и достигает легких.
- 8.Передняя граница перекрывает перикард.
- 9.Трахея - это продолжение гортани.
- 10.Стенка бронхиальных трубок насыщена волокнами эластичной ткани.

### **4.Прочтите и переведите текст на русский язык. Найдите в тексте эквиваленты следующих словосочетаний и составьте с ними предложения по содержанию текста.**

- самая важная жизненная функция;
- воздух проходит через;
- высоко эластичная;
- конической формы;
- верхушка простирается;
- основание довольно плоское;
- вес двух легких;
- каждое легкое заключено;
- воздух в плевральной полости;
- цвет легких;
- сразу же после рождения имеют место некоторые изменения;
- сердце находится в контакте с легкими;
- легочная артерия проходит;
- каждая основная бронхиальная трубка, входящая в легкие;
- по структуре, все трубки состоят из;
- трахея содержит на волокнистом слое большие кусочки хрящей;
- мельчайшие отделы бронхиальных трубок известны как альвеолы;
- другое множество бронхиальных кровеносных сосудов;
- важная система лимфатических сосудов.

## **LUNGS**

The lungs form a pair of organs situated in the chest, and discharge the most important function of vital activity, viz., respiration. The air, which enters through the nose and passes down the

throat, larynx, and windpipe, reaches the lungs by the right and left bronchial tubes, into which the windpipe divides within the chest, at the level of the second rib. The texture of the lungs is highly elastic, so that when the chest is opened each lung collapses to about one-third of its natural bulk.

Each lung is roughly conical in shape, with an apex projecting into the neck, and a base resting upon the diaphragm. The rounded outer surface of each lung is in contact with the ribs of its own side, while the heart, lying between the lungs, hollows out the inner surface of each to some extent. There is an anterior border, along which the outer and inner surfaces meet, and the borders of the two lungs touch one another for a short distance behind the middle of the breast-bone. The apex, which is blunt, extends 1 1/2 inches or more into the neck above the line of the collar-bone. The base is deeply hollowed. The right lung is split by two deep fissures into three lobes; the left has two lobes divided by a single fissure. The weight of the two lungs together is about 40 ounces, the right being rather heavier than the left. Each lung is enveloped in a membrane, the pleura or pleural membrane; in such a way that one layer of the membrane is closely adherent to the lung, from which indeed it cannot be separated, while the other layer lines the inner surface of one half of the chest. These two layers form a closed cavity, the pleural cavity, which everywhere surrounds the lung except at the point where the bronchi and vessels enter it. In some circumstances air escapes into the pleural cavity, and the lung then collapses temporarily upon its root, but air in the pleural cavity is very quickly absorbed and the lung speedily comes to occupy its original volume.

In children, the color of the lungs is rose-pink, but, as life advances, they become more and more of a slaty hue, mottled with streaks and patches of dark-grey and black, which are due to deposits in the lymph spaces of dust inhaled on the breath.

**Changes at Birth.** Prior to birth, and in still-born children, the lungs are of a yellowish color and packed away in the back of the chest. Their weight amounts to about 1/70 of the whole body-weight. Immediately upon birth some changes take place: the color changes to rose-red, and the weight is suddenly doubled in consequence of the inrush of blood: the consistence becomes spongy, as air is drawn into the lungs, and if the child should die after drawing a few breaths, any portion of the lung which may be cut off floats in water. These changes are of importance, from the medicolegal point of view, in determining whether a dead infant has been born alive or not.

**Connections with Heart.** The heart lies in contact with the lungs and is connected by vessels with them. The pulmonary artery passes from the right ventricle and divides into two branches, one of which runs straight outwards to each lung, entering its substance along with the bronchial tube at the hilum or root of the lung. From this point also emerge the pulmonary veins, which carry the blood purified in the lungs back to the left auricle.

**Minute Structure.** Each main bronchial tube, entering the lung at the root divides into branches, which subdivide again and again till the finest tubes known as bronchioles or capillary bronchi. In structure, all these tubes consist of a mucous membrane surrounded by a fibrous sheet. The windpipe has in the fibrous layer large pieces of cartilage which in the windpipe and largest bronchial tubes form regular hoops, and in the medium-sized tubes are disposed as irregular plates. These pieces of cartilage have the function of preventing the tubes from closing or being compressed, and so obstructing the passage of air. The larger and medium bronchi are richly supplied with glands secreting mucus, which is poured out upon the surface of the membrane. This surface is composed of columnar epithelial cells, which are provided with cilia, credited generally with the power of moving expectoration upwards towards the throat, but is probably also designed to load the air passing into the lungs with warm moisture before it reaches these organs. The wall of the bronchial tubes is very rich in fibres of elastic tissue, and immediately beneath the mucous

membrane is a layer of circularly placed unstripped muscle fibers, which is well developed in the smaller bronchi. To this muscular layer probably is due the removal of expectoration.

The smallest divisions of the bronchial tubes open out into a number of dilatations, the infundibula, each measuring about 1/20 inch in width, and these are covered with minute sacs, known as air-vesicles or alveoli. Each air-vesicle consists of a delicate membrane composed of flattened platelike cells, strengthened by a wide network of elastic fibers, to which the great elasticity of the lung is due; and in these thin-walled air-cells the important function of the lungs is carried on.

The branches of the pulmonary artery accompany the bronchial tubes to the farthest recesses of the lung, dividing like the latter into finer and finer branches, and ending in a dense network of capillaries, which lies everywhere between the air-vesicles, the capillaries being so closely placed that they occupy a much greater area than the spaces between them. The air in the air-vesicles is separated from the blood only by the delicate membranes, viz., the wall of the air-vesicle and the capillary wall, through which an exchange of gases readily takes place. The blood from the capillaries is collected by the pulmonary veins, which also accompany the bronchi to the root of the lung.

Another and much smaller set of bronchial blood-vessels runs actually upon the walls of the bronchial tubes, and these serve the purpose of nourishing the lung tissue.

There is in the lung also an important system of lymph vessels, which commence in spaces situated between the air-vesicles, under the pleural membrane, and in the walls along with the blood-vessel, and are connected with a chain of bronchial nodes lying near the end of the windpipe.

### 5. Ответьте на вопросы к тексту «Lungs».

- 1) What are the lungs?
- 2) How does the air reach the lungs?
- 3) How is each lung shaped?
- 4) Where is the apex of the lung located?
- 5) Where is the base of the lung located?
- 6) What is the weight of the lungs?
- 7) What is each lung enveloped by?
- 8) What colour are the infant's lungs?
- 9) What changes can take place immediately after birth?
- 10) Why are these changes of importance?
- 11) What can you say about connection of lungs with the heart?
- 12) What does the minute structure of the lungs consist of?

### 6. Сравните выделенные глагольные словосочетания в парах предложений и укажите разницу между ними. Переведите предложения на русский язык.

1. We **can divide** the skeleton into three parts.
2. The skeleton **can be divided** into three parts.
5. A doctor **must listen** to the lungs.
4. The lungs **must be listened** to by a doctor.

5. You **may use** this test.

6. This test **may be used** by you.

**7. Изложите следующую информацию в страдательном залоге. Переведите предложения в страдательном залоге на русский язык.**

1. A doctor can make an instant diagnosis after examining a patient's chest.

2. The pericardium covers the heart.

3. Some patients may develop tolerance.

4. A doctor must listen to the lungs to be sure of his diagnosis.

5. Cartilages form the larynx.

6. A thin serous membrane covers the lungs.

7. The lungs can change their volume in some circumstances.

8. Each ventricle of the heart must pump the same amount of blood.

9. An infected cell may release an unknown substance.

10. The rise of temperature may follow this reaction.

**8. Переведите предложения на русский язык.**

1. Легкие должны функционировать постоянно, чтобы поддерживать жизненную функцию организма.

2. Легкое может временно сжиматься у своего корня.

3. Описание этого заболевания должно быть включено в статью.

4. В медицинском журнале должны быть опубликованы детальные обзоры новых методов лечения респираторных заболеваний

5. Небольшое количество воды может вырабатываться легкими.

6. Аритмией можно управлять стандартным образом.

7. Специальный реагент коагуляции крови должен быть использован в данном случае.

8. Жизненную емкость легких можно установить во время осмотра.

### **Text**

## **THE NERVOUS SYSTEM**

The nervous system is made up of the brain, the spinal cord, and nerves. One of the most important systems in your body, the nervous system is your body's control system. It sends, receives, and processes nerve impulses throughout the body. These nerve impulses tell your muscles and organs what to do and how to respond to the environment. There are three parts of your nervous system that work together: the central nervous system, the peripheral nervous system, and the autonomic nervous system.

**Brain.** The brain keeps the body in order. It helps to control all of the body systems and organs, keeping them working like they should. The brain also allows us to think, feel, remember and imagine. In general, the brain is what makes us behave as human beings.

The brain communicates with the rest of the body through the spinal cord and the nerves. They tell the brain what is going on in the body at all times. This system also gives instructions to all parts of the body about what to do and when to do it.

Spinal Cord. Nerves divide many times as they leave the spinal cord so that they may reach all parts of the body. The thickest nerve is 1 inch thick and the thinnest is thinner than a human hair. Each nerve is a bundle of hundreds or thousands of neurons (nerve cells). The spinal cord runs down a tunnel of holes in your backbone or spine. The bones protect it from damage. The cord is a thick bundle of nerves, connecting your brain to the rest of your body.

Senses. There are five main senses - touch, smell, taste, hearing and sight. These are the external sensory system, because they tell you about the world outside your body. Your senses tell you what is happening in the outside world. Your body's sense organs constantly send signals about what is happening outside and inside it to your control center - the brain.

The cerebrum is part of the forebrain. The cerebral cortex is the outer layer of the cerebrum. Certain areas of the cerebral cortex are involved with certain functions.

Sensory areas such as touch, smell, taste, hearing and sight receive messages from the skin, nose, mouth, ears and eyes. We feel, taste, hear and see when these messages are received by the sensory parts of the brain.

The Peripheral Nervous System. The nervous system is made up of nerve cells or neurons that are "wired" together throughout the body, somewhat like communication system. Neurons carry messages in the form of an electrical impulses. The messages move from one neuron to another to keep the body functioning.

### **Words:**

1. spinal cord – спинной мозг
2. to send - посылать
3. to receive - получать
4. to respond - отвечать
5. environment - окружение
1. to keep the body in order – поддерживать тело в порядке
2. to allow – позволять
3. rest – остаток
4. bundle – пучок
5. external – внешний
6. forebrain – передний мозг
7. cerebral cortex – кора
8. involve – вовлекать
9. to wire – связывать

### **Exercise 1. Find English equivalents. Найдите английские эквиваленты.**

Нервная система состоит из; центральная нервная система; периферическая нервная система; вести себя как человек; достигать всех частей тела; защищать от повреждений; получать информацию (сообщения) от кожи; электрический импульс

### **Exercise 2. Find Russian equivalents. Найдите русские эквиваленты.**

It sends, receives, and processes nerve impulses; to respond to the environment; to keep the body in order; brain communicates with the rest of the body; nerves divide many times; tunnel of holes in backbone or spine; thick bundle of nerves

### **Exercise 3. Answer the questions. Ответьте на вопросы.**

1. What is the function of brain?
2. How does the brain communicate with the rest of the body?
3. What senses do you know?
4. What is neuron?
5. What is the function of neuron?

#### Exercise 4. Open the brackets and use the Complex Object.

0. Jill expected (they, arrive) tomorrow.  
Jill expected them to arrive tomorrow.
1. I expect (they, help) us.
2. He wants (the meeting, hold) at the stadium.
3. They consider (he, be) a clever man.
4. We suppose (Dick, do) everything himself.
5. The boss wants (you, tell) him all the information.
6. I'd like (the bank, loan) you money.
7. Mother doesn't want (we, be late) for dinner.
8. Bill wants (she, introduce) him to Mary.
9. I would like (they, arrange) the meeting on Tuesday.
10. They expected (she, invite) Dorian to the party.
11. I'd like (you, sew) the dress by Saturday.
12. Mum doesn't want (I, treat) my little brother like this.
13. Would you like (I, show) you my photos?
14. I hate (she, prevent) me from working on the project.
15. Do you expect (they, stay) here long?
16. I want (we, come) on time.
17. I know (she, be) a famous designer.
18. We expected (it, happen) soon.
19. He desired (she, smile) to him.
20. I would like (he, say) a few words about his voyage.

#### Text

### DIGESTIVE SYSTEM

#### 1. Прочтите слова, обращая внимание на чтение выделенных букв и буквосочетаний.

Digestive, **o**rgan, **s**ystem, **c**onsist, **c**anal, **a**ccessory, **t**ract, **ph**arynx, **e**sophagus, **d**iaphragm, **t**eeth, **w**ithin, **t**onsils, **p**assage, **d**ivision, **f**irst, **w**alls, **a**rch, **ch**annel, **a**rchitectural.

#### 2. Образуйте от глаголов имя существительное.

To relate, to form, to define, to lack, to cover, to divide, to mix, to serve, to pass, to dilate, to secrete, to act, to play, to retain, to determine, to arrange, to chain, to stimulate, to produce.

#### Vocabulary List

abdomen – живот, брюшная полость  
accessory – добавочный, дополнительный, вспомогательный  
alimentary – пищевой, пищеварительный  
appendage – отросток, придаток  
caecum – слепая кишка  
coat – оболочка

colon – толстая кишка  
to conduct – проводить  
to cover – покрывать deciduous – временный  
digestive – пищеварительный  
duodenum – двенадцатиперстная кишка  
esophagus – пищевод  
(to) fold – складка, сгиб, сгибать  
gallbladder – желчный пузырь  
ileum – подвздошная кишка  
jejunum – тощая кишка  
large intestine – толстый кишечник  
liver – печень  
mucous – слизистый  
orifice – анат.отверстие, устье  
pancreas – поджелудочная железа  
permanent – постоянный  
related – связанный  
salivary – слюнной  
serous – серозный  
sphincter – сфинктер  
small intestine – тонкий кишечник  
stomach – желудок

**3. Поставьте глаголы, данные в скобках, в соответствующую смыслу видовременную форму Present Simple in Passive and Active Voice.**

- 1.The digestive system (to consist) of the alimentary canal and a number of associated glands.
- 2.The liver transplantation (to consider) very important.
- 3.Kidney disease (cause) high blood pressure.
- 4.The alimentary tract (to form) by the mouth, pharynx, esophagus, stomach, small and large intestines.
- 5.The soft and hard palates (to be) in the oral cavity.
- 6.Teeth (to mix) the food.
- 7.Food from the pharynx to the stomach (to convey) by the esophagus.
- 8.The bile and pancreatic ducts (to empty) into the duodenum.

**4. Поставьте следующие предложения в отрицательную и вопросительную форму.**

- 1.The accessory structures are the teeth, tongue, salivary glands, hard and soft palates, liver, gallbladder and pancreas.
- 2.The mouth is the first division of the alimentary tract.
- 3.The oral and laryngeal portions of the pharynx serve as a channel for the passage of both food and air.
- 4.The process of digestion begins in the stomach.

5. The stomach is a dilated portion of the alimentary canal.
6. The pancreas is a long slender.
7. The liver secretes bile.
8. The large salivary glands consist of the parotid, the submaxillary and the sublingual.

**5. Прочтите текст и найдите в нем английские эквиваленты для следующих словосочетаний. Составьте предложения с ними по содержанию текста.**

- пищеварительная система состоит из;
- сформирован ротовой полостью, глоткой, пищеводом;
- вспомогательные структуры;
- в брюшной полости покрыты;
- первый отдел пищеварительного тракта;
- два ряда зубов;
- на латеральных стенках;
- под диафрагмой;
- тонко-мышечная трубка;
- специальные структурные характеристики;
- самая большая железа;
- концентрирует желчь;
- секреция важная для пищеварения.

### **Digestive system**

The digestive system consists of the alimentary canal and related or accessory organs.

The alimentary canal is formed by the mouth, pharynx, esophagus, stomach, small intestine, large intestine and rectum.

The accessory structures are the teeth, tongue, salivary glands, hard and soft palates, liver, gallbladder and pancreas.

The alimentary tract from esophagus to rectum conforms to a definite structural plan. The layers from within outward are mucous, submucous, muscular and serous. In the esophagus the serous layer is lacking and the outer coat is fibrous in nature.

The organs of the digestive system contained in the abdomen are covered with the serous coat, the peritoneum. The peritoneum has two layers, the visceral and parietal.

The mouth is the first division of the alimentary tract. Important structures of the mouth are the tongue, which contains the end organ for taste, and the teeth which divide and mix the food. There are two sets of teeth, first the deciduous or milk teeth and later the permanent teeth.

The palatine tonsils are on the lateral walls of the oral pharynx between the palatine arches. The oral and laryngeal portions of the pharynx serve as a channel for the passage of both food and air; food is conducted through it from the mouth to the esophagus and air from the nasal pharynx to the larynx.

The esophagus conveys food from the pharynx to the stomach.



The stomach is a dilated portion of the alimentary canal lying in the upper abdomen just under the diaphragm. It is a retaining and mixing reservoir in which the process of digestion begins.

The circular muscle layer is thickened at the pyloric and cardiac orifices to form sphincters. The glands of the fundus and body are most important in the secretion of gastric juice. They are formed mainly of chief and parietal cells.

The small intestine is a thin-walled muscular tube about 7 meters long. Its three portions are: duodenum, jejunum and ileum.

The bile and pancreatic ducts empty into the duodenum. Special structural features of the small intestine are the villi and the circular folds. The intestinal glands or crypts of Lieberkuhn secrete the intestinal juice containing the digestive enzymes.

The large intestine is about 1.5 meters long and is divided into caecum, colon and rectum. Special structural features of the large intestine are teniae coli, haustra, semilunar folds and epiploic appendages.

The large salivary glands consist of the parotid, the submaxillary and the sublingual. Ducts from the three pairs of glands open into the mouth.

The liver is the largest gland in the body. It is directly beneath the diaphragm on the right side of the abdomen. The liver cells are arranged in architectural units, called lobules.

The bile capillaries and sinusoids lie between chains of liver cells in the lobule. Branches of the portal vein, bile duct and hepatic arteries encircle the periphery of the lobule.

The liver secretes bile and has many other important functions such as stimulation of red bone marrow, production of fibrinogen, glycogenetic function and urea synthesis.

The gallbladder is a pear-shaped hollow sac attached to the under surface of the liver. It concentrates the bile.

The pancreas is a long slender organ with its head to the right in the loop of the duodenum, its body posterior to the stomach and its tail touching the spleen on the left.

The pancreas forms an external secretion important in digestion and an internal secretion, insulin, concerned with carbohydrate metabolism.

## **6. Закончите предложения заменив русские слова в скобках на английские.**

- 1.The digestive system consists of the alimentary canal and related or accessory (**органы**).
- 2.**(пищеварительный канал)** is formed by the mouth, pharynx, esophagus, stomach, small intestine, large intestine and rectum.
- 3.The alimentary tract from esophagus to **(прямой кишки)** conforms to a definite structural plan.
- 4.The organs of the digestive system contained in the abdomen are covered with the serous **(оболочкой)**, the peritoneum.
- 5.**(рот)** is the first division of the alimentary tract.
- 6.The esophagus conveys food from the pharynx to the **(желудок)**.
- 7.The stomach is under the **(диафрагма)**.
- 8.The bile and pancreatic ducts empty into the **(двенадцатиперстную кишку)**.

## **7. Ответьте на вопросы к тексту "Digestive system".**

- 1.What does the digestive system consist of?

2. What is the alimentary canal formed by?
3. What structures are the teeth, tongue, salivary glands, hard and soft palates, liver, gallbladder and pancreas?
4. What are the organs of the digestive system contained in the abdomen covered with?
5. What does the first division of the alimentary tract contain?
6. What is the function of the teeth?
7. What do the oral and laryngeal portions of the pharynx serve as?
8. Where does the process of digestion begin?
9. What are three portions of the small intestine?
10. What is the large intestine divided into?
11. Where do ducts of the large salivary glands open to?
12. Where is the largest gland of the body?
13. What does the liver secrete?
14. What is a pear-shaped hollow sac attached to?
15. What does the pancreas form?

**8. Прочтите предложения и переведите их на русский язык с использованием словаря.**

1. The pelvis, or basin, generally described as a separate cavity, lies below the chest.
2. The principal contents of the abdominal cavity are digestive organs and the associated glands.
3. The stomach and liver, both lying to a large extent under cover of the ribs, occupy the hollow of the diaphragm.
4. The large intestine lies in the flanks on either side in front of the kidneys, crossing below the stomach from right to left.
5. Hanging down from the stomach in front of the bowels is the omentum, or apron.
6. When food is taken into the stomach, the process of digestion begins.
7. Kidneys, protected to a great extent by the last two ribs, lie against the back wall on either side.

**9. Выберите нужную форму причастия.**

1. The kidneys produce some small hormones (participating, participated) in the metabolism of the body.
2. Neutralization of toxic products (generating, generated) by intestinal microflora proceeds in the liver.
3. (Depending, depended) on localization of bloodstasis two forms of portal hypertension are distinguished: intrahepatic and extrahepatic.
4. Pathological processes, primarily (developing, developed) in the stomach, result in different disorders.
5. The problem (concerning, concerned) cancer is the most urgent one.
6. Flat muscles (varying, varied) in the amount line the cavity of the stomach.
7. The stomach is a (dilating, dilated) portion of the alimentary canal.
8. The stomach (resembling, resembled) a pear in shape lies in the hollow of the left side of the diaphragm.

**10. Найдите в тексте «ABDOMEN» предложения с Present и Past Participle и переведите их на русский язык.**

**ABDOMEN**

Abdomen is the lower part of the trunk. Above, and separated from it by the diaphragm or midriff, lies the thorax or chest, and below lies the pelvis, or basin, generally described as a separate cavity though directly continuous with that of the abdomen. Behind lie the spinal column and lower ribs which come within a few inches of the iliac or haunch bones; at the sides the protection afforded to the contained organs by the iliac bones and down sloping ribs is still more effective; but in front the whole extent is protected only by soft tissues. The latter consist of the skin, a varying amount of fat, three layers of broad, flat muscle, another layer of fat, and finally the smooth thin peritoneum which lines the whole cavity. The absence of rigidity allows of the necessary distension when food is taken into the stomach, and of the various important movements of the organs associated with digestion.

The principal contents of the abdominal cavity are digestive organs, i. e., stomach, intestines, and the associated glands, the liver and pancreas. The position of the stomach is above and to the left, of the liver above and to the right, both lying to a large extent under cover of the ribs, and occupying the hollow of the diaphragm, by which alone they are separated from the lungs and heart.

Against the back wall on either side lie the kidneys, protected also to a great extent by the last two ribs; and from the kidneys run the ureters or urinary ducts down along the back wall to the bladder in the pelvis. The pancreas lies across the spine in front of the kidneys, and upon the upper end of each kidney lies a suprarenal body. High up to the left and partly behind the stomach lies the spleen.

The great blood-vessels and nerves, the absorbent vessels and the glands connected with them, lie on the back wall, and the remainder of the space is taken up by the intestines or bowels, the large intestine lying in the flanks on either side in front of the kidneys and crossing below the stomach from right to left, while the small intestine hangs from the back wall in coils which fill up all spaces between the other organs. Hanging down from the stomach in front of the bowels is the omentum, or apron, containing a considerable amount of fat, and helping to protect the bowels from cold and injury.

**11. Укажите неправильные утверждения и исправьте их, используя текст «ABDOMEN».**

1. Abdomen is the upper part of the trunk.
2. Above, and separated from it by the diaphragm or midriff, lies the pelvis.
3. The principal contents of the abdominal cavity are digestive organs, i. e., stomach, intestines, and the associated glands, the liver and pancreas.
4. The position of the stomach is above the lungs.
5. From the kidneys run the ureters or urinary ducts down along the back wall to the bladder in the pelvis.
6. The pancreas lies across the spine in front of the kidneys.
7. Hanging down from the stomach in front of the bowels is the omentum, or apron, containing a considerable amount of water.

**12. Выполните письменный перевод текста на русский язык, используя словарь.**

## STOMACH

The stomach is a dilated portion of the alimentary canal, which in man has a shape somewhat resembling that of a pear. The larger end, known as the «fundus», lies in the hollow of the left side of the diaphragm. The upper part of the stomach, into which the gullet opens, is known as the cardiac part, while the lower and narrower portion is known as the pyloric part. The two openings into and out of the stomach are known as the cardia and the pylorus. The stomach is slightly flattened from before backwards, and the two edges are known as the lesser curvature, which runs from one opening to the other direct, and the greater curvature, which sweeps round the fundus from the cardia to the pylorus.

The stomach hangs very freely suspended in the upper and left part of the abdomen, so that changes in its position and shape take place readily according to the amount of food it contains.

The stomach possesses four coats similar to those of the intestine, which are, from within outwards, a mucous membrane, sub-mucous layer, muscular coat, and peritoneal coat. Mucous membrane lines the interior of the stomach and is of smooth, soft texture, though raised up into ridges when the stomach is empty. The surface can be seen with the naked eye to be thickly covered by minute pits into each of which several tube-shaped glands are found, on microscopic section, to open. The surface of the mucous membrane is composed of a single layer of columnar cells, and these also line the pits referred to above. Each gland is composed of large cubical cells so arranged as to form a tube, open at the upper end where it meets the pit, and closed beneath. These cells secrete the gastric juice which exudes from all the minute tubes as digestion is proceeding. Between the tubular glands lies some supporting connective tissue in which run numerous blood-capillaries and lymph-vessels.

Submucous coat is a loose connective tissue layer which joins the mucous coat to the muscular coat, and in which the large blood vessels of the stomach run. The loose arrangement of its fibers allows the mucous membrane to glide freely over the muscular coat in the movements and variations in size of the stomach.

Muscular coat is of considerable thickness in the stomach, and is of great importance in varying the size of the organ according to the amount of food it contains, in making the peristaltic movements which mix the food with the digestive juice, and finally in expelling the softened food from the stomach into the small intestine. This coat consists of three layers, an outer one in which the fibres run lengthwise, a middle one where they are circular, and an inner layer in which they run obliquely across the stomach.

Peritoneal coat is similar to the peritoneum covering the other organs of the abdomen.

The stomach is abundantly supplied with blood from the coeliac axis, a short, wide artery which comes directly from the aorta and likewise gives branches to the liver, pancreas and spleen. There is a large arterial arch round either curvature, and from these two arches smaller branches run into the wall of the stomach and reach the submucous coat, from which minute branches are distributed to the other coats.

The blood is collected by veins which ultimately return it to the portal vein.

The stomach is very richly supplied with nerves both from the nervus vagus and from nervus sympathicus. The tenth cranial nerve (vagus) of each side has a long course down the side of the gullet, and after giving branches to the larynx, heart, lungs, and other organs, terminates in the stomach. Other branches come from the solar plexus of the nervus sympathicus. These nerves form a plexus in the submucous coat and another in the muscular coat, which undoubtedly exert an influence over the secretions and movements of the organ.

**13. Расположите предложения в таком порядке, чтобы получилось логическое описание. Проверьте себя по тексту «Stomach».**

1. The stomach is a dilated portion of the alimentary canal.

2. The stomach is very richly supplied with nerves.
3. The stomach is abundantly supplied with blood from the coeliac axis, a short, wide artery which comes directly from the aorta and likewise gives branches to the liver, pancreas and spleen.
4. The upper part of the stomach is known as the cardiac part, while the lower and narrower portion is known as the pyloric part.
5. The stomach possesses four coats similar to those of the intestine, which are, from within outwards, a mucous membrane, sub-mucous layer, muscular coat, and peritoneal coat.
6. Peritoneal coat is similar to the peritoneum covering the other organs of the abdomen.
7. Submucous coat is a loose connective tissue layer which joins the mucous coat to the muscular coat, and in which the large blood vessels of the stomach run.
8. Muscular coat is of considerable thickness in the stomach, and is of great importance in varying the size of the organ according to the amount of food it contains, in making the peristaltic movements which mix the food with the digestive juice, and finally in expelling the softened food from the stomach into the small intestine.
9. Mucous membrane lines the interior of the stomach and is of smooth, soft texture, though raised up into ridges when the stomach is empty.

**14. Выполните письменный перевод текста “Liver” на русский язык, используя словарь. Найдите в тексте английские эквиваленты для следующих словосочетаний:**

- самая большая железа в организме;
- занимать главным образом правую подреберную и эпигастральную области;
- быть покрытым брюшиной;
- клетки печени организованы в виде архитектурных блоков;
- ответвления воротной вены;
- кровь доставляется в печень двумя путями;
- обеспечение кислородом;
- выработка внутренней секреции;
- полый грушевидный мешок, прикрепленный под нижним краем печени;
- желчный проток.

**LIVER**

The liver is the largest gland of the body, weighing 1.5 kg. in men and somewhat less in women. It is a soft plastic organ. It occupies chiefly the right hypochondriac and epigastric regions directly beneath the diaphragm. There are two principal lobes, the right and the left. The right lobe consists of the right lobe proper and the small quadrate and the caudate lobes on the inferior surface. The line of demarcation between the right and left lobes is indicated on the superior surface by the falciform ligament which passes from the liver to the diaphragm and the anterior abdominal wall. The ligament is a remnant of the anterior mesentery and conveys on its free border, a fibrous cord, the occluded umbilical vein, now the round ligament. The surface of the liver is covered with peritoneum with the exception of a small area on its posterior surface which is attached directly to the diaphragm. Beneath the peritoneum is a dense connective tissue layer called the capsule of Glisson, which covers the entire surface of the organ.

**Microscopic structure.** The cells of the liver are arranged in architectural units, called lobules. These are elongated polygonal structures, having five, six or seven sides. Running lengthwise through the center of the lobule is the central or intralobular vein. Encircling the periphery of the lobule are the branches of the portal vein, called interlobular veins, interlobular bile ducts and branches of the hepatic artery. The interlobular veins break up into sinusoids which enter the lobule at the periphery.

The liver cells are arranged in cords which radiate from the central vein to the periphery of the lobule. Between the cords lie the liver sinusoids. Each liver cell cord consists of two adjacent rows of hepatic cells between which runs a thin bile capillary which passes to the periphery of the lobule to join the interlobular bile ducts.

The sinusoids are irregular blood channels formed by a layer of flat cells and histiocytes. The histiocytes of the liver are called Kupffer's cells. The sinusoids lead in a radial manner toward the middle of the lobule, like the spokes of a wheel to the hub, and empty into the central vein. The smallest branches of the hepatic artery enter the sinusoids at the periphery of the lobule.

**Summary of Circulation.** Blood is brought to the liver from two sources: from the digestive tract and spleen by the portal vein and from the aorta through the hepatic artery.

The portal vein is unique in that it is interposed between two capillary beds: one in the liver, the other in the digestive area. The portal vein on entering the liver divides into branches which come into relation to the circumference of the lobule. These branches in turn give off interlobular veins which run between the lobules. These give rise to the sinusoids which run between the cords of hepatic cells to enter the central veins. Central veins of several lobules join to form the sublobular veins which in turn unite to form the hepatic veins. The hepatic veins, usually two or three in number, empty into the inferior vena cava.

The hepatic artery is distributed chiefly to the interlobular connective tissue and its contained structures. Its finest branches empty into the sinusoids at the circumference of the lobule. The hepatic artery contributes about one fourth of the total blood supply of the liver. However, the liver is dependent upon this fraction for its oxygen supply.

**Functions.** The most obvious function of the liver is the formation of its external secretion, the bile. The other functions of the liver are numerous and varied. They are listed very briefly here: blood formation in the embryo; stimulation of red bone marrow; production of fibrinogen; storage of iron and copper; phagocytic action of histiocytes (Kupffer cells); detoxication; protein metabolism; carbohydrate metabolism (Glycogenetic function); fat metabolism; heat production.

**Gallbladder.** The gallbladder is a pear-shaped hollow sac attached to the under surface of the liver. It ends in the cystic duct which joins with hepatic duct to form the common bile duct. The bile, which is secreted continuously by the liver, may not immediately enter the intestines but after passing down the hepatic duct it may turn into the cystic duct and enter the gallbladder. During digestion the bile passes down the cystic duct and into the common bile duct which opens into the duodenum about 10 cm. below the pylorus. The common bile duct pierces the duodenal wall and joins with the pancreatic duct to form the ampule of Vater, which opens into the duodenum through a small elevation called the duodenal papilla.

**15.Используя текст «LIVER», опишите устно на английском языке печень.**

**16.Ответьте на вопросы.**

- 1.What is the liver?
- 2.Where is the liver located?
- 3.How many principal lobes does the liver have?
- 4.What is the surface of the liver covered with?
- 5.What is the microscopic structure of the liver?
- 6.Where is blood brought to the liver from?
- 7.What are the functions of the liver?
- 8.What is a pear-shaped hollow sac attached to the under surface of the liver?
- 9.Where does the gallbladder end?
- 10.What is the function of the gallbladder?

**Exercise 1.**

1. We saw them (jump) with parachutes.
  - a) to jump
  - b) jump
  - c) jumping
2. I'd like him (enter) the university but I can't make him (do) it.
  - a) to enter, do
  - b) enter, to do
  - c) making, doing
3. I heard him (play) the piano in the house.
  - a) to play
  - b) play
  - c) playing
4. Nobody noticed him (come in) and (sit) down.
  - a) to come in, to sit
  - b) come, sit
  - c) coming, sitting
5. She heard somebody (walk) up to her door.
  - a) to walk
  - b) walk
  - c) walking
6. I felt Nick (put) his hand on my shoulder.
  - a) put
  - b) to put
  - c) putting
7. I heard him (tell) the teacher about it.
  - a) to tell

- b) tell
  - c) telling
8. We expect our basketball team (win) next game.
- a) won
  - b) to win
  - c) win
9. The teacher advised us (use) dictionaries.
- a) used
  - b) use
  - c) to use
10. Her father doesn't allow her (go) to the cinema alone.
- a) to go
  - b) go
  - c) going

**17. Выполните письменный перевод текста “Kidneys” на русский язык, используя словарь. Составьте список ключевых терминов к каждой части текста. Составьте предложения с ключевыми словами.**

### **KIDNEYS**

Kidneys are a pair of glands situated close to the spine in the upper part of the abdomen. They are on a level with the last dorsal and upper two lumbar vertebrae, and each is, to a great extent, covered behind by the twelfth rib of its own side. They are kept in this position by a quantity of fat and loose connective tissue, in which they are embedded, by the large vessels which supply them with blood, by the peritoneal membrane stretched over their front surface, and largely by the pressure of the other abdominal organs against them.

**Structure.** In size each is about 4 inches long, 2.5 inches wide, 1.5 inches thick, and weighs over 4 ounces. The size, however, varies a good deal. The left kidney is slightly longer and narrower, and lies a trifle higher in the abdomen than the right.

The kidney in adult human beings presents a smooth exterior, though in early life, as in many animals, it is divided up into distinct lobes, corresponding to the pyramids found in the interior. Enveloping it is a tough fibrous coat, which, in the healthy state, is bound to the kidney only by loose fibrous tissues and by a few blood vessels that pass between it and the kidney.

The outer margin of the kidney is convex, the inner is concave, presenting a deep depression, known as the hilus, where the vessels enter its substance. At the hilus the renal vein lies in front of the renal artery, the former joining the inferior vena cava, and the latter springing from the aorta almost at a right angle. Here, too, the ureter, which conveys urine down to the bladder, is attached. The ureter is spread out into an expanded, funnel-like end, known as the pelvis, to which the capsule of the kidney is firmly attached and which further divides into little funnels known as the calices.

On splitting open a kidney, one finds it to consist of two distinct parts: a layer on the surface, about 1/6 inch thick, known as the cortex, and a part towards the hilum, known as the medulla. The latter consists of pyramids, arranged side by side, with their base on the cortex and their apex



projecting into the calices of the pelvis. The apex of each pyramid, of which there are about 15-20 in all, is studded with minute holes, which are the openings of the microscopic uriniferous tubes.

Each pyramid is in effect taken together with the portion of the cortex lying along its base, an independent little kidney. About a score of small tubes open on the surface of each pyramid and these, if traced up into its substance, divide again and again so as to form bundles of tubes, known as medullary rays, passing up towards the cortex. If one of these be traced still farther back, it is found, after a very tortuous course, to end in a small rounded body, the Malpighian corpuscle or glomerulus.

If the blood vessels now be traced through the kidney, their course is found to be as follows. The renal artery splits up into branches, which form arches at the line of junction of cortex and medulla, and from these again spring vessels that run up through the cortex, giving off small branches in every direction.

Each of these at last ends in a little tuft of capillaries enclosed in a capsule (Bowman's), that forms the end of the uriniferous tube above described, and capillaries with a capsule are known as a glomerulus. The blood, after circulating in the glomerulus, emerges by a small vessel, which again splits up into capillaries on the walls of the uriniferous tubes. From these it is collected finally into the renal veins and by them leaves the kidney.

By means of the double circulation, first through the glomerulus and then around the tube a large amount of fluid is removed from the blood in the glomerulus, and then the concentrated blood passes on to the uriniferous tube for removal of parts of its solid contents. Other straight arteries come off from the arches above mentioned and supply the medulla direct, the blood from these passing through another set of capillaries and also finally into the renal veins.

Though the circulation just described is confined entirely to the kidney, it has certain small connections both by arteries and veins which pass through the capsule and join the lumbar vessels communicating direct with the aorta.

**Function.** The chief function of the kidneys is to separate fluid and certain solids from the blood. The glomeruli filter from the blood the non-protein portion of the plasma. As this filtrate passes through the convoluted tubules varying parts of it are reabsorbed. It is estimated that in 24 hours the total human glomeruli will filter between 15 and 200 liters, 99 per cent of which is reabsorbed by the tubules. The constituents of the filtrate may be grouped according to the extent to which they are reabsorbed by the tubules: 1) substances actively reabsorbed, such as amino acids, glucose, potassium, calcium, magnesium and chlorine; 2) substances passing through the tubular epithelium by a simple process of diffusion when their concentration in the filtrate exceeds that in the plasma, such as urea, uric acid, phosphate; 3) substances not returned to the blood from the tubular fluid - e. g., creatine.

When the kidneys are diseased and the number of glomeruli and tubules decreased in consequence, this alternating action is not so readily carried out, and therefore the work of the diseased kidney becomes much embarrassed. When the blood vessels of the kidney are partially closed by disease (arteriosclerosis), the general blood pressure rises with the object of forcing more blood through the kidneys; and, in consequence, marked changes are produced upon the heart in this type of renal disease. When the kidneys fail to act, these solid waste substances accumulate in the blood. The general poisoning resulting from failure of renal function produces the clinical condition known as uremia.

### **18. Закончите предложения, используя информацию из текста.**

1. Kidneys are a pair of glands situated close to ....

- 2.It is divided up into ... corresponding to the pyramids found in the interior.
- 3.The circulation has certain small connections both...
- 4.The chief function of the kidneys is...
- 5.... solid waste substances accumulate in the blood.
- 6.The general poisoning resulting from failure of renal function produces...

**19. Закончите предложения, используя слова, приведенные ниже. Переведите предложения на русский язык.**

- 1.The kidneys are very important... in the human body.
- 2.The kidneys are... at the back of the abdominal cavity.
- 3.The ... portion of the kidney structure is called the renal medulla.
- 4.Blood ... the kidneys via the renal artery at the hilus.
- 5.Urine collects in the ... pelvis.
- 6.Sodium is the ... determinant of the water volume outside the cells.
- 7.Large ... of sodium are filtered from the blood into the nephron.

Interior, amount, located, enter, renal, organs, main.

**20. Ответьте на вопросы к тексту:**

- 1.Where are kidneys situated?
- 2.What is the structure of the kidneys?
- 3.What is the chief function of the kidneys?
- 4.What happens when the kidneys are diseased?

**21. Переведите предложения на английский язык.**

1. Нижняя часть туловища, называемая брюшной полостью, содержит желудок, печень, почки, желчный пузырь и кишечник.
2. Печень в основном располагается в правом верхнем квадранте.
3. Желудок занимает различные позиции в зависимости от его наполнения.
4. Селезенка прикрепляется и к желудку, и к диафрагме.
5. Функции пищеварительной системы - прием, абсорбция пищи и выведение продуктов распада.
6. В течение жизненной активности организма, которая основана на метаболизме, различные органы и системы органов устанавливают тесную взаимосвязь и взаимодействие.
7. Питательные вещества поступают в кровь из пищеварительной системы.
8. Продукты распада, формируемые в процессе метаболизма, поступают из мышц в кровь и транспортируются к органам выделения.
9. Мочевыделительная система образована двумя почками.
10. Система пищеварения состоит из пищеварительного канала и нескольких желез.

**Упражнение 1. Выберите правильный вариант ответа.**

1. His problem is so (confusing/confused). Can you help him?
2. I'm feeling (depressed / depressing).
3. I'm always really (boring/bored) during the long flights.
4. My little daughter was (amusing / amused) by the clown.

5. Olga's new idea was absolutely (fascinated / fascinating).
6. Mum! It's so (embarrassing/embarrassed) when you show my baby photos to people.

**Упражнение 2.** Раскройте скобки, поставив глагол в форму причастия 1 или 2.

1. Molly was really \_\_\_\_\_ (annoy) with her sister for teasing her.
2. The film we watched was \_\_\_\_\_ (interest).
3. These days children's games are more \_\_\_\_\_ (entertain).
4. These numbers on teen's problems are rather \_\_\_\_\_ (disturb).
5. Susie felt rather \_\_\_\_\_ (frustrate) with her performance.
6. The letter (to write) by him was very long.
7. We are interested in the goods (to produce) by this factory.
8. The article on agriculture (to publish) in this magazine was written by Smith.
9. You can get the book (to recommend) by our teacher in the library.
10. The boy (translate) the story is the best pupil in our class.
11. Why have you got that ... (worry) expression on your face? Are you in trouble?
12. The teacher was ... (disappoint) with the test results.
13. I went to the exhibition of French art last week and I was very much ... (impress).
14. The trip to the mountains was so ... (excite) — we enjoyed every minute of it.
15. I'm ... (bore) — I have nothing to do.
16. It was raining so heavily that the little puppy got ... (frighten) and hid under the bed.
17. We were ... (surprise) at the news.
18. The girl ... (wash) the window is my sister.
19. ... (write) the letter Olga thought about her summer holidays.
20. She didn't understand the word (to say) by him.

## Литература.

1. Козырева Л.Г. Английский язык для медицинских колледжей и училищ. – Ростов-на-Дону: Феникс, 2020. – 329 с.
2. Кролик Н.И. Английский язык для студентов – медиков: Учебное пособие для вузов. - М.: ООО Изд-во Астрель, 2003. – 128 с.
3. Маслова А.М. Учебник английского языка для медицинских вузов./Маслова А.М., Вайнштейн З.И., Плебейская Л.С.- М.: Высшая школа, 2002. – 336 с.
4. Муравейская М.С., Орлова Л.К. Английский язык для медиков. Учебное пособие для студентов, аспирантов, врачей и научных сотрудников. М: «Флинта», «Наука», 2002.–384 с.
5. Мухина В.В. Английский язык для медицинских училищ. - М.: Высшая школа, 2002. - 141 с.
6. Тылкина С.А., Темчина Н.А. Пособие по английскому языку для медицинских училищ. - М.: АНМИ, 2002. – 158 с.
7. Щедрина Т.П. Английский язык в медицине. - М.: Высшая школа, 2004. – 207 с.
8. M.R.Sapin, L.L. Kolesnikov, D.B. Nikitjuk. Textbook of HUMAN ANATOMY. For medical students. Moscow. New Wave Publisher Ltd, 2005. -p. 416.

### 9. Интернет ресурсы:

[https://en.wikipedia.org/wiki/Cell\\_\(biology\)#:~:text=The%20cell%20is%20the%20basic,word%20cellula%20meaning%20'small%20room'](https://en.wikipedia.org/wiki/Cell_(biology)#:~:text=The%20cell%20is%20the%20basic,word%20cellula%20meaning%20'small%20room')  
[https://embryology.med.unsw.edu.au/embryology/index.php/Foundations - Histology Cells and Tissues](https://embryology.med.unsw.edu.au/embryology/index.php/Foundations_-_Histology_Cells_and_Tissues)  
[https://anatomy.app/encyclopedia/skull#:~:text=The%20human%20skull%20\(Latin%3A%20cranium\),views%20\(anterior%2C%20lateral%2C%20inferior%2C%20posterior\)](https://anatomy.app/encyclopedia/skull#:~:text=The%20human%20skull%20(Latin%3A%20cranium),views%20(anterior%2C%20lateral%2C%20inferior%2C%20posterior))  
<https://studfile.net/preview/15445182/page:2/>  
<https://www.livescience.com/22665-nervous-system.html>  
<https://en.wikipedia.org/wiki/Stomach>  
<https://en.wikipedia.org/wiki/Kidney>

---

Подписано в печать 24.07.2024 г. Формат 60×84<sup>1</sup>/<sub>16</sub>.  
Гарнитура «Гаймс». Бумага офсетная. Печать ризографная.  
Усл. п. л. 3,4. Уч.-изд. л. 3,4. Тираж 100 экз.



Отпечатано в типографии АЛЕФ  
367002, РД, г. Махачкала, ул. М. Гаджиева 64  
Тел.: +7 (8722) 935-690, 599-690, +7 (988) 2000-164  
[www.alefgraf.ru](http://www.alefgraf.ru), e-mail: [alefgraf@mail.ru](mailto:alefgraf@mail.ru)