

## **Задание II**

**Прочитайте внимательно текст, постарайтесь понять его содержание с тем, чтобы согласиться или не согласиться с утверждениями, данными после текста.**

### **1. Cardiosurgery**

Within the last 20 years a new branch of surgery—cardiosurgery has been developing successfully in our country. The beginning of its development was marked by the first operation on the heart performed by Academician A. N. Bakulev. It is due to the work of such prominent Soviet surgeons as Vishnevsky, Meshalkin, Petrovsky, Amosov, and others that great progress has been achieved in cardiosurgery. The lives of many thousands of people suffering from cardiac diseases and from those of coronary vessels have been already saved.

The operations on the heart are performed to eliminate the existing heart defects, congenital or developed, and to restore the normal function of the heart.

The operation on the heart is preceded by various examinations, which enable the surgeon to make a correct diagnosis. The most important ones are listening to the heart, its X-ray examination, electrocardiograms, the revealing of heart murmurs, and clinical and biochemical blood analyses. Only having made an exact diagnosis and having come to the conclusion that the therapeutic measures have been ineffective the surgeon can perform the operation on the heart.

The operations on the heart are very difficult to perform because of the intricate (сложный) anatomical structure of the heart and because the heart constantly contracts.

Some operations are performed on the contracting heart, but such operations give the surgeon only a very short period of time for his surgical manipulations. Besides in such cases there is always the danger of the impairment of cardiac functions such as heart failure, fibrillation and others. In the presence of these impairments complete or partial arrest of blood circulation develops.

Such intervals of blood circulation result in the damage to some organs, for example, the brain can live without blood supply only four-five minutes; if the interval is longer the brain cells die.

**1.a)** Within the last 30 years a new branch of surgery – neurosurgery has been developing successfully in our country.

**b)** Within the last 20 years a new branch of surgery – cardiosurgery has been developing successfully in our country.

**2.a)** The beginning of its development was marked by the first operation on the heart performed by Academician A. N. Bakulev.

**b)** The beginning of its development was marked by the first operation on the lungs performed by Academician I.M. Sechenov.

**3.a)** The lives of many thousands of people suffering from gastric diseases and from those of coronary vessels have been already saved.

**b)** The lives of many thousands of people suffering from cardiac diseases and from those of coronary vessels have been already saved.

**4.a)** The most important ones are listening to the heart, its X-ray examination, electrocardiograms, the revealing of heart murmurs, and clinical and biochemical blood analyses

**b)** The most important ones are listening to the lungs, , cardiograms, the revealing of heart murmurs, and clinical and biochemical blood analyses

**5.a)** Such intervals of blood circulation result in the damage to some organs, for example, the brain can live without blood supply only four-five minutes; if the interval is longer the brain cells die.

**b)** Such intervals of blood circulation result in the damage to some organs, for example, the heart can live without blood supply only four-five minutes; if the interval is shorter the brain cells die.

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## **2. Work of a nurse an In-patient department**

When patients are admitted to the hospital first of all they are received by a nurse on duty at the reception ward.

Those patients who are to be hospitalized have already received the direction from the polyclinic. The nurse on duty fills in patients' case histories in which she writes down their names, age, place of work, occupation, address and the initial diagnosis made by a doctor at the polyclinic.

Then a doctor on duty examines the hospitalized patients and gives his instructions what department and wards the patients are to be admitted to.

At the in-patient departments of a hospital life begins early in the morning. The nurses on duty take the patients' temperature, give them intramuscular and intravenous injections, take stomach juice for analysis, apply cups and give all the prescribed remedies in the doses indicated by the ward doctors.

The nurses keep all the drugs in special drug cabinets. All the drugs have special labels. The names of drugs are indicated on them. Patients are not allowed to take the medicines themselves because some drugs are poisonous, the overdosage of some other drugs may cause unfavourable reactions and even death.

At about nine o'clock in the morning the doctors begin the daily rounds of the wards during which they examine all the patients. After the medical examination the doctors administer the patients different procedures: electrocardiograms are taken, laboratory analyses of blood, urine and gastric juice are made. Some patients are administered a bed regimen, others are allowed to walk; some are to follow a diet to relieve stomachache or prevent unfavourable results in case of stomach troubles. All the doctors always treat the patients with great attention and care. There is no doubt that such a hearty attitude of the doctors to the patients helps much in their recovery.

1. a) At the in-patient department the nurses give the patients intramuscular and intravenous injections,

b) At the in-patient department the ward doctors give the patients intramuscular and intravenous injections.

2. a) Some patients are to follow a diet to decrease weight,

b) Some patients are to follow a diet to relieve stomachache.

3. a) The overdosage of some drugs may cause a considerable change in the white blood cell count,

b) The overdosage of some drugs may cause unfavourable reactions.

4. a) Every morning the nurses begin the daily rounds of the wards during which they examine all the patients.

b) Every morning the doctors begin the daily rounds of the wards during which they examine all the patients.

5. a) After the medical examination the doctors administer the patients different procedures: electrocardiograms are taken, laboratory analyses of blood, urine and gastric juice are made.

b) After the medical examination the doctors administer the patients different procedures: electrocardiograms are taken, some laboratory analyses and gastric juice are made.

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### **3. Text « Brain»**

Scientists consider that our brain is the most complicated mechanism which has ever been constructed. The brain lies in the biggest cavity of the skull which is called the cranial cavity. It is divided into three parts: the medulla, the forebrain consisting mainly of the cerebrum, and the cerebellum. The medulla (or the brain stem) is a portion of the spinal cord connecting it with the brain. The forebrain and the cerebellum are divided into two hemispheres which are connected by a thick band of nerve fibers. These hemispheres have areas called “lobes” which perform specific functions.

The weight of the human brain is from one to two kg. and it consists of about 12 billion (миллиард) cells. It has been determined by the scientists that each cell is connected to the other directly or indirectly by nerve fibers.

The brain is the centre of a wide system of communication. It has been found out that a constant flow of stimuli comes into the brain through the spinal cord. The stimuli come to the brain from our eyes, ears, and other sense organs for pain, temperature, smell and other feelings. When all the received stimuli have been summarized and analyzed the brain sends orders through the nerve fibers in the spinal cord to different parts of the human body. It is due to these orders that one eats, moves, hears, sees and does many other things.

To estimate the functions of different areas of the brain many experiments have been carried out by the investigators. It is due to such experiments that the investigators have been able to determine those areas of the brain which control vision, hearing, physical movements and even emotions. For example, it has been discovered that the part for thought, memory and feeling is found in the front of the cerebrum. The part for hearing is found at the side of the cerebrum and the part for vision is in the back of the cerebrum. The cerebellum is the centre which makes the muscles work as a team. The medulla is connected with such important acts as breathing and heartbeat.

1. a) The most complicated mechanism which has ever been constructed is the heart.

b) The most complicated mechanism which has ever been constructed is the brain.

2. a) The brain is divided into three parts: the medulla, the forebrain and the cerebellum.

b) The brain is divided into four parts: the medulla, the forebrain and the cerebellum.

3. a) A constant flow of stimuli comes into the brain through the skin.

b) A constant flow of stimuli comes into the brain through the spinal cord

4. a) The part for thought, memory and feeling is found in the back of the cerebrum.

b) The part for thought, memory and feeling is found in the front of cerebrum.

5. a) The cerebellum is the centre which makes the muscles work as a team.

b) The cerebellum is a portion of the spinal cord.

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#### **4. 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.

1. a) The heart is not a pump which circulates blood throughout the body  
b) The heart is simply a pump which circulates blood throughout the body
2. a) Vessels carrying blood away from the heart are known as arteries  
b) Vessels carrying blood away from the heart are known as veins
3. a) Vessels returning blood to the heart are known as arteries  
b) Vessels returning blood to the heart are known as veins
4. a) The heart pumps blood round the body about 70 times a minute in adults  
b) The heart pumps blood round the body less than 70 times a minute in adults
5. a) Each upper compartment is called a ventricle and each lower an atrium  
b) Each upper compartment is called an atrium and each lower a ventricle



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### **5. At the Dentist's**

**Dentist:** Hello Mr. Smithers. It is good to have you back. We haven't seen you in a while. How are the teeth? Do you have any concerns?

**Patient:** No. I am just here for a cleaning with your dental hygienist. I guess you will check out my mouth after that.

**Dentist:** That's right sir. I will take a quick glance at your teeth once she is done. This visit should go a lot better for you than last year's visit. I believe we had to pull out one of your molars and put in a few fillings. Hopefully you have been taking better care of your teeth this year.

**Patient:** Yes, I am. Last year's visit was painful, even with the Novocain you gave me. It isn't fun getting a tooth pulled. The sound of the tooth coming out still gives me nightmares.

**Dentist:** Well, at least that ordeal inspired you to take better care of your teeth. Have you been using the dental floss that my receptionist gave you.

**Patient:** Yes. I floss every night before going to bed. I do have one problem that I forgot to mention. When I wake up in the morning my teeth and jaw hurt. Do you know what that could be?

**Dentist:** Sounds to me like you are grinding your teeth at night. You will have to buy a night guard to protect your teeth.

**Patient:** Let me guess. You sell them here. How convenient... I noticed your new BMW in the parking lot. With all of the money I paid you last year I guess you can afford it.

**Dentist:** Very funny. Tooth decay is normal for people your age. It is worth it to spend the money and get your teeth cleaned and looked at.

**Patient:** OK doctor. Just don't tell me my teeth are crooked and that I will need braces. I won't fall for that one.

**Dentist:** No. I won't try that on you. I am a nice dentist!

1. a) It's Mr. Smithers's first visit.  
b) Mr. Smithers has already been at the dentist's.
2. a) Mr. Smithers wants his mouth to be checked out.  
b) Mr. Smithers doesn't want his mouth to be checked out.
3. a) This visit is painless.  
b) This visit is very painful.
4. a) Mr. Smithers never flosses every night before going to bed.  
b) Mr. Smithers flosses every night before going to bed.
5. a) The doctor is a poor man.  
b) The doctor can afford to buy a new car.

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## **6. 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. 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 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.

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.

Some people do not have enough hemoglobin in their red cells and are consequently short of oxygen. This condition is called anemia.

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.

1. a) There are three types of granulocytes: eosinophils, basophils, neutrophils.  
b) There are three types of leucocytes: eosinophils, basophils, neutrophils.
2. a) Agranulocytes are produced in lymph nodes and spleen.  
b) Agranulocytes are produced in the bone marrow and spleen.
3. a) The main function of red cells is to carry oxygen to the body cells.  
b) The main function of red cells is stop bleeding.
4. a) The plasma is the fluid portion before clotting has occurred.  
b) The plasma is the fluid portion of blood remaining after the coagulation process is completed.
5. a) Blood consists of three different types of cell floating in a liquid called plasma.  
b) Blood consists of three different types of cell floating in a liquid called serum

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## **7. PATHOLOGY**

Pathology is the study of disease. It covers the changes in normal anatomy and physiology brought about by disease and the body's reaction to it.

Any shallow breach of the skin or mucous membrane is called an ulcer. The raw base of an ulcer often has a painful bleeding surface. A cyst is an abnormal sac of fluid. Cysts are usually small and localized and can occur in soft tissues or bone anywhere in the body.

A tumor is a swelling caused by an abnormal and uncontrolled growth of body cells. It serves no useful purpose and may cause displacement or destruction of adjacent structures. Some types of tumor can spread throughout the body causing severe, and often fatal, destructive effects. This condition is commonly known as cancer.

Congenital defects are defects, which are present at birth, such as heart and valvular defects, cleft palate or other deformities.

The cause or nature of an ulcer or tumor cannot always be determined by physical or X – ray examination. Confirmation of the diagnosis often necessitates surgical removal of some diseased tissue for examination under a microscope. This minor operation is called a biopsy. The biopsy specimen is sent to a hospital pathology department.

The diagnosis of infections often requires bacteriological examination of a swab or smear from an infected surface. Other types of disease are commonly diagnosed by blood and urine tests.

1. a) The diagnosis of infections often requires surgical removal of some diseased tissue.  
b) The diagnosis of infections often requires bacteriological examination of a swab from an infected surface.
2. a) Pathology is the study of nervous system.  
b) Pathology is the study of disease.
3. a) Cysts are usually small and localized in soft tissues.  
b) Cysts are usually big and localized in the throat.
4. a) The cause of tumor can always be determined by physical or X – ray examination.  
b) The cause of tumor cannot always be determined by physical or X – ray examination.
5. a) Any shallow breach of the skin or mucous membrane is called an ulcer.  
b) Any shallow breach of the skin or mucous membrane is called an asthma.

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### **8. Poisoning**

Poisoning is called a painful condition of the whole body, which came as a result of getting into it poisonous substances. Food poisoning is different, although most of the symptoms are similar, but given the health, treatment should be correct and immediate. Since to recognize food poisoning and what to do in this case?

There are several types of poisoning:

1. food poisoning;
2. poisoning with acids and caustic alkalis;
3. poisoning with sleeping pills and narcotic drugs;
4. Poisoning by industrial poisons;
5. alcohol poisoning;
6. poisoning with arsenic;
7. carbon monoxide and light gas poisoning;
8. poisoning with various insecticides.

**FIRST AID AT DANGER** If poisonous substances have been swallowed, the following measures should be taken: - to study the information on the package of the substance, if it is known what the person has poisoned; - to find out the person's age, the name of the substance and the amount of poison ingested by the victim, the time when the poison was swallowed; was there vomiting. Call an ambulance immediately; while you can ask the doctor's advice on first aid. Do not induce vomiting without the advice of a physician. If a person vomits, pack some of the vomit for testing. If there is a suspicion of poisoning with poisonous gases, then ventilate the room, move the victim to another room, to fresh air. If possible, shut off the source of poison gas. Do not light matches and lighters, gas may be explosive. Check the breathing and pulse of the victim. If he does not breathe, and you have the necessary skills, do artificial respiration. If a person is conscious and breathing, cover him with a blanket and watch his condition until the ambulance arrives.

1. a) Poisoning is called a painful condition of the whole body  
b) Poisoning is called an unpainful condition of the whole body
2. a) There are not several types of poisoning  
b) There are several types of poisoning
3. a) If a person vomits, pack some of the vomit for testing.  
b) If a person vomits, pack some of the vomit for the doctor.
4. a) You can ask the doctor's advice on first aid  
b) You must ask the doctor's advice on first aid
5. a) If he does not breathe, and you have the necessary skills, do artificial respiration.  
b) If he does not breathe, and you have the necessary skills, you must do artificial respiration.



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### **9. The Nursing Profession**

Nurses are the ones who spend the most time with the patients. They are taking care of them in the physical and moral way. Sick people are very fragile which means they need someone to look after them, inject and bandage them and bring them medicine. A doctor can be called the brain of the hospital but a nurse is more like the soul of the hospital. Nurses often have to listen to complains and comfort patients. Sometimes it can be very hard but their care can help people to recover even better than medicine. A nurse works from 9 to 5 and has four weeks' holiday a year. She works shifts, at nights. Sometimes she has to work at weekends if a patient needs her help and care. But she works not only with her hands, she also must be educated, because errors in the injection of the drug are not allowed. Usually, she works indoors, but she goes to the patient's home if he cannot get to the hospital.

A nurse has to wear a uniform and sometimes work late.

Of course, you have to study in a special medical college or university if you would like to become a nurse. It is also very important for the nurse to know how to do first-aid, make injections and collect blood. Many people think that a nurse cannot build a career but it is not true. When you are still a student you can start working as a nurse's aide, then you can become a nursing assistant and when you have enough experience you can be the charge nurse. If you have higher education you can be the head nurse that controls all the staff in the hospital. That's why being a nurse is not only important but also has benefits.

1. a) They are taking care of them in the physical way  
b) They are taking care of them in the physical and moral way
2. a) Nurses often have to listen to complains and comfort patients.  
b) Nurses seldom have to listen to complains and comfort patients.
3. a) A nurse has not to wear a uniform.  
b) A nurse has to wear a uniform
4. a) It is very important for the nurse to know how to do first-aid, make injections and collect blood.  
b) It is not very important for the nurse to know how to do first-aid, make injections and collect blood.
5. a) If you have higher education you can not be the head nurse that controls all the staff in the hospital.  
b) If you have higher education you can be the head nurse that controls all the staff in the hospital.

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### **10. Microorganisms**

All the existing microorganisms can be divided into two main groups — aerobic and anaerobic. Aerobic microorganisms must have atmospheric free oxygen for their life and growth. However one knows that free oxygen is not favourable for the development of anaerobic microorganisms.

Bacteria vary in shape and according to this feature they are divided into some groups. Spherical bacteria have been called cocci. They are also subdivided into several groups. Rod-shaped (палочковидные) bacteria are called bacilli.

When bacteria multiply they divide. The growing organism increases in size up to a certain limit and in due time divides. The process of division depends on the conditions of the environment.

Any minute (мельчайший) virulent microorganisms may invade the human body. But due to the local protective agents of the human organism they are destroyed. In this case no disease occurs.

However the local protective agents of the human organism are not always able to destroy completely the invading microorganisms. It is known that in such a case a local or general infection may occur.

Most of the microorganisms produce diseases when they enter the tissue and destroy it. If one examines under the microscope the alveoli of the lung of the man with lobar pneumonia a great number of pneumococci can be revealed. While the disease persists the lung may be considerably impaired because of the consolidations which may develop in it.

But the human organism can fight against the microorganisms which have passed its first protective barriers, i.e. skin and mucous membranes.

The prominent Russian scientist I.I. Mechnikov had made many investigations before he was able to come to the conclusion that leucocytes could catch and destroy certain microbes. I.I. Mechnikov called them phagocytes or microbe cell destroyers.

1. a) All the existing microorganisms can not be divided into two main groups- aerobic and anaerobic.  
b) All the existing microorganisms can be divided into two main groups- aerobic and anaerobic.
2. a) Spherical bacteria have been called bacilli.  
b) Spherical bacteria have been called cocci.
3. a) When bacteria multiply they divide .  
b) When bacteria multiply they don't divide.
4. a) The local protective agents of the human organism are not always able to destroy completely the invading microorganism  
b) The local protective agents of the human organism are able to destroy completely the invading microorganism.
5. a) Rod-shaped bacteria are called cocci.  
b) Rod-shaped bacteria are called bacilli.