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Методические материалы по дисциплине:

Профессиональные коммуникации стр.

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Методические материалы по дисциплине:

Профессиональный перевод стр. 2

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АНГЛИЙСКИЙ ЯЗЫК ДЛЯ МЕДИКОВ

Грамматический практикум

Под редакцией И. Ю. Марковиной

Москва "БИЛИНГВА" 2002

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Основная цель пособия — сформировать у обучающихся базовые навыки понимания и перевода оригинальных текстов по специальности на английском языке с опорой на знание грамматических структур, характерных для англоязычной научной медицинской литературы.

Рекомендуется студентам медицинских вузов, изучающим базовый курс английского языка, аспирантам и соискателям для подготовки к сдаче экзамена кандидатского минимума по английскому языку. Также рекомендуется для широкого круга профессионалов-медиков, желающих научиться грамотно работать с оригинальной научной литературой.

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Предисловие

Основная цель "Грамматического практикума" — сформировать у обучающихся навыки понимания и перевода оригинальных англоязычных текстов по специальности с опорой на знание грамматических структур, характерных для научной медицинской литературы на английском языке.

Практикум адресован, прежде всего, студентам медицинских вузов, изучающим базовый двухгодичный курс английского языка. Пособие может рассматриваться как вторая часть издания "Курс английского языка. Учебник для медиков" (М. "Высшая школа", 1992). Однако, содержание практикума и структура специальных заданий-инструкций к упражнениям позволяют использовать его в качестве самостоятельного учебного пособия.

"Грамматический практикум" также рекомендуется для использования при обучении аспирантов и соискателей в курсе подготовки к сдаче экзамена кандидатского минимума по английскому языку. Пособие может заинтересовать широкий круг специалистов-медиков, желающих свободно владеть навыками работы с англоязычной научной литературой.

Практикум состоит из четырёх частей: "Личные формы глагола", "Неличные формы глагола", "Синтаксис" и "Особенности перевода некоторых слов и конструкций". Помещённый в конце пособия "Индекс" предназначен для быстрого поиска упражнений, необходимых для отработки конкретного грамматического явления.

Каждая часть содержит несколько тематически организованных разделов, в состав которых включены группы упражнений и тексты для тренировочного и контрольного перевода. Предусмотрены также обзорные упражнения по грамматическим темам. Весь англоязычный материал носит аутентичный характер,

Упражнения снабжены заданием-инструкцией, включающим:

- краткие сведения о грамматическом явлении, характеристику его формальных признаков в сочетании с графическими иллюстрациями для обучения распознаванию данного грамматического явления в предложении;
- задание на поиск данного явления в английском предложении в качестве подготовки к переводу;
- рекомендации по переводу на русский язык с примерами;
- задание на перевод.

Как работать с "Грамматическим практикумом".

Первые три части практикума — "Личные формы глагола", "Неличные формы глагола", "Синтаксис" — посвящены основным грамматическим и лексическим явлениям, характерным для английского научного стиля, знание которых позволяет точно понимать и правильно передавать на русский язык содержание медицинского текста. В процессе работы над пособием студенты смогут расширить запас знаний в области медицинской терминологии и общенаучной лексики.

В четвёртую часть "Особенности перевода некоторых слов и конструкций" включены упражнения для отработки навыков понимания и передачи на русский язык грамматических и лексических явлений, часто встречающихся в анг-

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лийском медицинском научном тексте и, как правило, представляющих трудности при переводе.

Упражнения в каждом разделе расположены по принципу "от простого к сложному"; по аналогичному принципу расположены предложения в каждом упражнении. Упражнения повышенной трудности обозначены значком * и предназначены для студентов продвинутых групп.

Целью заданий-инструкций является научить студентов распознавать ядро английского предложения (подлежащее и сказуемое) и структуру в целом, точно понимать и правильно переводить медицинский текст. Работа над переводом предложений разбита на этапы, которые отражены в заданиях "А", "Б" или "А", "Б", "В".

Задание "А" содержит краткие сведения о том или ином грамматическом явлении и графические иллюстрации и ориентирует студентов на поиск, прежде всего, ядра предложения (подлежащего и сказуемого), а также на поиск грамматического явления, которому посвящено данное упражнение. При выполнении этого задания рекомендуется пользоваться словарём для подготовки предварительного ("чернового") варианта перевода.

Задание "Б" содержит рекомендации по способам перевода данного явления, включает наиболее часто используемые эквиваленты на русском языке и предлагает примеры, на которые следует ориентироваться при выполнении окончательного перевода, предусмотренного заданием "В".

Тексты для тренировочного перевода предназначены для самостоятельной работы с последующим обсуждением и комментариями в аудитории. Контрольный перевод выполняется в качестве итоговой работы по теме и показывает степень усвоения пройденного материала.

Практикум заканчивается разделом "Знаете ли вы?", который содержит занимательные задания, ориентированные на активное использование подъязыка медицины и знаний различных медицинских дисциплин. Все упражнения этого раздела и некоторые упражнения других разделов (задания которых предполагают знание медицинских дисциплин - например, составление дефиниций) снабжены ключами.

Условные обозначения:

NV — ядро предложения (подлежащее и сказуемое);

nv — ядро предложения (подлежащее и сказуемое) в придаточном предложении; Ns - подлежащее (существительное) во множественном числе;

V — основная форма глагола;

Vs - глагол-сказуемое в 3 лице единственном числе настоящего времени;

V — глагол-сказуемое в прошедшем времени;

V_3 — 3-ья форма глагола (причастие II);

Ving — 4-ая форма глагола (причастие I).

Практикум апробирован в Московской Медицинской академии им. И. М.Сеченова на занятиях со студентами 1-го и 2-го курсов, а также в группах аспирантов и соискателей при подготовке к сдаче экзамена кандидатского минимума по английскому языку.

Авторы

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ЧАСТЬ 1 Личные формы глагола (Finite Forms of the Verbs)

РАЗДЕЛ 1 Действительный залог (Active Voice)

Упражнение 1

Используя фрагменты предложений из трёх частей таблицы, составьте определения медицинских терминов (дефиници и), при этом форма глагола *to be* должна соответствовать числу, в котором стоит подлежащее.

Примеры:

The ancle *is* the joint where the foot joins the leg. The lungs *are* the two organs inside the chest.

I	II	III
1. The ankle 2. Bones 3. The cell 4. The elbow 5. The eye 6. The feet 7. The head 8. The heart 9. The knee	is / are	a) the part of the body which has eyes, mouth and brain in it. b) the organ in the chest that pumps the blood around the body, c) a large organ in the body which cleans the blood, d) a chemophysical system for producing heat and mechanical work, e) the hard parts inside the body which together form the skeleton, f) the space behind the lips where the teeth and tongue are. g) the soft movable part inside the mouth that is used for tasting, licking and speaking, h) the bony part of the head which encloses the brain.
10. The liver		i) the hard, white objects in the mouth that are used for biting and chewing.
11. The lungs		j) the part of the body between the hand and arm which bends when the hand is moved.
12. The mouth 13. A muscle 14. The skeleton 15. The skull		k) the part in the middle of the arm where it bends. 1) the joint where the foot joins the leg. m) the two organs inside the chest which are used for breathing, n) the place where the leg bends, o) the parts of the body that are at the ends of the legs, p) the structural and functional unit of a living organism, q) an optical instrument much like a camera, r) a strong, flexible framework that supports the body.
16. The teeth 17. The tongue 18. The wrist		

Упражнение 2

Переведите предложения, содержащие конструкцию *there be [there is/there are),* которая на русский язык обычно передаётся глаголами *имеется, существует.*

1. There are many treatments for asthma sufferers.
2. There is a lot of sickness in the winter months.
3. There are many different types and many causes of nephritis.
4. There is a considerable amount of elastic tissue in the arterial wall, especially in large arteries.
5. In a stressful situation there is an increase in the secretion of the hormones,
   noradrenalin and adrenalin.
6. Under the epithelial lining there are various amounts of lymphoid tissue.
7. There are more veins than arteries in the body, but they are less muscular than
   arteries.
8. When the ventricles contract there is a gradual increase in the pressure in these chambers.
9. When the infection spreads into the kidney substance there is suppuration and
   destruction of nephrons.
10. Normally there is a delay of about 10 seconds between the oxygenation of the
    blood in the lungs and recognition of this by cells in the brain.
11. There are several types of leucocytes which carry out their protective functions in different ways.
12. There are 11 pairs of intercostal muscles that occupy the spaces between the 12
    pairs of ribs.
13. There are a number of uncommon conditions that result from defects in the immune system.
14. There is always a small quantity of gastric juice present in the stomach, even when it contains no food.
15. There is strong evidence that heredity plays an important role in the genesis of mental illness.
16. There is direct evidence that secretions from the endocrine glands, such as thyroxin and insulin, exercise a very active influence on metabolism.
17. There are normally about 8,000 white corpuscles in every cubic millimeter of blood. There are two main varieties: polymorphs and lymphocytes. There are three different kinds of polymorphs: eosinophils, basophils and neutrophils. There are two types of lymphocytes that sometimes function independently but usually in collaboration.

Упражнение 3

А. Найдите ядро (подлежащее и сказуемое) в простых предложениях, опираясь на данные формулы:

N -> Vs

The liver regulates the concentration of glucose in the blood.

Ns-> V

The kidneys regulate the amount of water in the blood. Б.

Переведите предложения.

1. The skull articulates with upper part of the vertebral column.
2. The five lumbar vertebrae lie in the lowest part of back.
3. Blood reflects changes in the activities of organs of the body.
4. The glomeruli filter from the blood the non-protein portion of plasma.
5. The bronchi branch in the lungs into smaller and smaller bronchioles.
6. The features of the disease vary among individuals.
7. Each of the temporal bones houses the inner ear.
8. The right hemisphere of the brain processes visual information.
9. Our senses provide accurate information about the position of our body parts.
10. The body automatically maintains its water balance through the kidneys.
11. Most smooth muscles act automatically under control of the nervous system.
12. Disturbances of the acid-base balance result in acidosis or alkalosis.
13. During growth, the shape and size of bones change through a continuous process of remodeling.
14. The pulmonary function of the lungs during pneumonia changes in different stages of the disease.
15. Separation of blood from its usual environment immediately initiates biochemical processes.
16. The pulmonary valve guards the orifice between the right ventricle and the pulmonary artery.
17. Measurements of calcium and phosphorus aid in evaluating the activity of the parathyroid glands.
18. The amplitude of muscle contraction equals the amount of actual shortening.
19. A serous membrane lines the pericardium, the sac around the heart.
20. Disturbances in the function of the pancreas produce digestive disorders.
21. The action of sunlight on the skin changes certain substances in the body into vitamin D.
22. Total deprivation of the supply of oxygen to the body causes death within minutes.
23. The hepatic and cystic ducts by their union form the bile duct.
24. At each heartbeat the two atria expel their contents into the ventricles.

Упражнение 4

А. Проанализируйте предложения и определите, какое существительное заменяется союзом - *which* или *that,* и почему глагол-сказуемое, стоящий после союза, имеет или не имеет окончание *-s.*

Б. Переведите предложения.

1. The body has two main mechanisms that control fluid volume.
2. The heart is primarily a pump that pushes the blood through the blood vessels.
3. The trachea divides into right and left main bronchi which go to the lungs.
4. The cranium forms the bony cage that encloses the brain.
5. Mucous membrane lines all body passages that open to the exterior, such as digestive and urinary tracts.
6. The heart possesses a fibrous skeleton that surrounds and strengthens many of its openings.
7. Normal blood plasma has several safeguards that help to maintain the fluidity of the blood.
8. Muscles are machines that convert chemical energy into mechanical energy.
9. The white matter of the spinal cord consists of bundles of fibers that carry "messages".
10. Pancreas secretes digestive enzymes and hormones which regulate glucose levels in the blood.
11. Pancreatic juice contains enzymes which complete the breakdown of food.
12. The mucus component of saliva is a sticky substance that lubricates the food.
13. The bronchi branch out within the lungs into many smaller tubes, the bronchioles, which culminate in clusters of tiny air sacs, the alveoli.
14. Salivary glands produce saliva, a liquid that protects the delicate membranes and mixes with food in the first step of digestion of food.
15. Healthy joints contain a fluid which protects the bones within them.

Упражнение 5

А. Определите, какую функцию в предложении выполняют выделенные слова и какой частью речи они являются.

Выпишите эти слова и поставьте обозначения: n - для существительного v - для глагола.

Найдите в словаре значения этих слов, ориентируясь на их принадлежность к той или иной части

речи. Б. Переведите предложения.

1. a) The skeleton is all the bones that **make up** a body.
   b) Water can have in its chemical **make-up** some substances harmful to a man.

2. a) Many enzymes have different **forms** in different organs,
   b) Cartilage **forms** the major part of bone in the very young.
3. a) The body **changes** carbohydrates into fats and stores them in that form,
   b) These lymphocytes undergo certain **changes** in the thymus.
4. a) Leucocytosis **means** an increase in the normal number of leucocytes in the blood.
   b) The blood is the chief **means** of transport within the body.
5. a) An enzyme does not **control** the direction of the reaction.
   b) Smooth muscles in blood vessels provide **control** over the distribution of blood and help regulate blood pressure.
6. a) Growth in height occurs as a **result** of maturation of the skeleton,
   b) Hormonal deficiencies usually result in metabolic disturbances.
7. a) The announcement of the germ theory initiated the study of bacteria as **causes** of some diseases.
   b) At the beginning of systole contraction of the cardiac muscle **causes** a steep rise in pressure inside the chamber.
8. a) The cranium is the **house** where the brain resides.
   b) The 29 vertebrae **house** in their central hollows the spinal cord.
9. a) Blood vessels **course** through every layer of bone and carry nutritive elements, oxygen, and other products.
   b) The onset, **course,** and duration of a fever vary with the cause.
10. a) Adults laugh an average of only 15 **times** per day, while children laugh an average 400 **times** daily.
    b) The biological clock in human beings **times** our periods of sleep and wakefulness and many body activities.
11. a) The heart **functions** as an effective pump.
    b) The blood is a fluid tissue with many different **functions.**
12. a) A hormone travels through the bloodstream and exerts **influence** on cells, tissues, and organs.
    b) Many factors **influence** the activity with which drugs operate.

Упражнение 6

А. Пользуясь таблицей на стр.14, иллюстрирующей образование времён английского глагола в действительном залоге, найдите сказуемое в каждом предложении и дайте его полную характеристику:
1) лицо, число
2) время
3) группа

Пример: has contributed - 3 лицо, ед. число
- настоящее время (Present)
- группа Perfect

Б. Переведите предложения.

Образование времён английского глагола в действительном залоге		Время		
		Present	**Past**	**Future**
Tenses (Группы времён)	**Indefinite**	V Vs	V_2	shall, IV will
	Continuous	am is } Ving are	were }Ving	shall, will }beVmg
	Perfect	have.V_3 has	had V_3	will }have V_3
	Perfect Continuous	have }beenVinq has	had been Ving	shall }have been Vinq will

1. The X-ray has contributed greatly to our knowledge of the physiology of the digestive canal.
2. In the future people will live longer than today.
3. Several recent studies showed a connection between stress and illness.
4. Cellular responses center around the activities of T-lymphocytes.
5. Lymph is constantly moving around the body but the lymphatic system has no
central pump equivalent to the heart.
6. The internal ear houses the organs essential for hearing and equilibrium.
7. More and more men have been entering the nursing profession.
8. Lack of sufficient insulin results in diabetes.
9. Antibiotic drugs have greatly improved the treatment of abscesses.
10. People vary in their reaction to different antigens.
11. Doctors have been operating on fetuses since the early 1980s.
12. The use of X-rays equipment in hospitals began in the late 1890s.
13. Human activities are now causing damage to the ozone layer.
14. From the dawn of humanity, people have been using plants to cure their
illnesses.
15. The gums cushion the teeth, while the jawbone firmly anchors the roots.
16. The size of the thoracic cavity is constantly varying with the movement of ribs and the diaphragm.

Тексты для тренировочного перевода (к разделу 1)

1. Muscle is the most abundant tissue in the body: it accounts for some two fifths of the body weight. Even at rest a muscle is not completely flabby. Continuous activity of the nerve cells maintains a slight tension or tone, which causes no movement. Several hereditary diseases affect the growth and function of muscles.
2. The two principal layers of the skin are the dermis with a rich network of blood vessels and nerves, and the epidermis, a protective outer layer without blood vessels. The skin is more than a waterproof jacket for the body. It is an active and versatile organ of sensation and of adaptation to the environment.
3. Connective tissues create the internal framework of the body. The connective tissue system supports and connects internal organs, forms bones and the walls of blood vessels, attaches muscles to bones, and replaces tissues of other types after injury. Fasciae are connective tissue layers that support and surround organs. A layer of fascia is an effective barrier against the spread of infection through the tissues.
4. The spleen is a fibrous sponge full of blood and lymphoid tissue. The ribs and diaphragm generally protect the spleen from injury. It is an important element of the reticulo-endothelial system, a community of cells that engulf and destroy foreign matter, such as bacteria. When micro-organisms and their poisons are circulating in the blood, the spleen generally enlarges.
5. Man has two kidneys, one at each side of the backbone between the thick muscles of the back and the abdomen. The kidney has several functions. It excretes waste material and water. It also helps to regulate the acidity of the body fluids. The discovery of albumin in the urine usually indicates a faulty working of the kid neys.
6. Proteins are essential ingredients of all living matter. They make up about 12 per cent of the weight of the human body. A molecule of protein is a chain of several hundred amino-acid molecules. The biological properties of a protein depend on the exact sequence of different amino-acids in the chain (primary structure), their orientation (secondary structure) and the shape of the chain as a whole (tertiary structure). Small differences make for totally different proteins.
7. Water accounts for about 60 per cent of a man's body weight and 50 per cent of a woman's. The difference is due to the average woman's larger proportion of fat, which contains no water. The plasma of the blood contains rather more than 3 litres, and the tissue fluid about 12 litres. Together, these 15 litres make up the extracellular fluid. Although the balance between blood, tissue fluid and cells remain almost constant there is a rapid and continuous exchange of water between them.

Тексты для контрольного перевода (к разделу 1)

1. The liver is a solid organ of dark-brown colour and the largest gland in the human body. It occupies the right-hand upper position of the abdominal cavity. About four-fifths of the organ lies to the right of the middle line of the body. The liver rests upon various abdominal organs, the right kidney and suprarenal gland, the large intestine, the duodenum, and the stomach. Liver tissue consists of thousands of tiny lobules.

   The liver has many functions vital to the body. Of the liver's many digestive functions the production of bile and storage of glucose are particularly important. The bile not only performs important functions in the process of digestion, but also serves as a vehicle for the excretion of waste products from the body. The liver has a double blood supply. The portal vein brings venous blood from the stomach, the intestines, and the spleen. The hepatic artery brings arterial blood. These two bring about 40 ounces (1,200 milliliters) of blood to the liver every minute.

2. The two lungs are a pair of elastic organs of respiration. They supply the body with oxygen and eliminate carbon dioxide from the blood. The lungs extend from the collarbone to the diaphragm in the thoracic cavity. They normally lie free within the pleural cavities of the thorax except for the attachment by their roots to the trachea and the heart by the bronchi and pulmonary blood vessels respectively. The two lungs are not quite mirror images of each other. The right lung, which is the slightly larger of the two, has three lobes (upper, middle and lower) and the left lung has only two lobes (upper and lower). Air enters each lung through a large tube, or bronchus, which divides and subdivides into a network of countless tubules, bronchioles. These tiny tubules lead to alveoli. The wall of an alveolus is a single layer of a cell. Alveoli are the sites of gas exchange in the lungs. They form the respiratory surfaces and allow oxygen and carbon dioxide to move in and out of the lungs. The spongy mass of the lungs contain some 600,000,000 alveoli. We inspire more than 25,000 times a day and during this time inhale around 16 kg of air.

3. In 1928 a British microbiologist, Frederick Griffith, was trying to develop a vac cine against pneumonia. He was working with two different strains of the causative bacterium Streptococcus pneumoniae. One strain was pathogenic, the other was nonpathogenic. When Griffith injected dead cells of the pathogenic strain of S. pneumoniae into a mouse, the mouse survived, because the dead bacteria were unable to establish an infection in the mouse. However, when he injected a mouse with living cells of the nonpathogenic strain together with dead bacteria (neither of them could cause disease alone) the mouse died. Griffith reasoned that genetic material from the dead bacteria had somehow entered the living nonpathogens and transformed them into the pathogenic bacteria, Griffith had, in fact, observed the movement of hereditary material from one cell to another. The chemical that transmitted the hereditary information, which included , instructions on how to cause infection, leaked from the dead pathogens and entered the living bacteria and caused the transformation of a nonpathogen to a

pathogen. Other scientists then began to investigate the specific substance. They were looking for the molecular basis of heredity. However, it remained a puzzle until 1944.

4. Scientific pathology really began in 1761 with the publication of Morgagni's collection of case histories in which doctors related patients' symptoms to disorders of particular organs. Under the influence of scientists, such as Hunter, pathology came to rely more and more on facts and less on philosophical speculations. The flood of pathological discovery in the 19th century came largely from microscopical examination. Pathology has come to deal with smaller and smaller units from a vague concept of the whole person to the study of particular organs, then tissues, then cells, and finally, molecules. Pathologists are now beginning to study disturbances of chemical reactions which determine the processes of disease. In the past, postmortem studies were the only possible way of learning about the nature of disease, and they are still very important for both research and teaching. But they reveal disease at a state where it is beyond the help of medicine. Thus pathologists described in great deal what had gone wrong with a patients's anatomy, but it had little to say about his physiology.

РАЗДЕЛ 2 Страдательный залог (Passive Voice)

Упражнение 7

А. Пользуясь таблицей, иллюстрирующей образование страдательного залога времён английского глагола, найдите сказуемое в каждом предложении и дайте его полную характеристику:
1) лицо, число
2) время
3) группа
4) залог

Пример: is assisted
- 3 лицо, ед. число
- настоящее время (Present)
- группа Indefinite
- страдательный залог (Passive)

Б. Переведите предложения.

Образование времён английского глагола в страдательном залоге		**Время**		
		Present	**Past**	**Future**
Tenses (Группы времён)	**Indefinite**	am / is / are **}V3**	was / were **}V3**	shall / will }beV_3
	Continuous	am / is / are } being V_3	was / were **}** being V_3	—
	Perfect	have / has }been V_3	had been V_3	shall / will } have been V_3

1. The surgeon is assisted by a large staff.
2. A date for the operation has been set.
3. The results of the operation will not be known for some weeks.
4. They have been warned of the possible complications.
5. The drug is being monitored for possible side-effects.
6. The first heart sound is followed after a short pause by the second.
7. Local inflammation is followed by various reactions in other parts of the body.
8. Quinine was formerly used to treat the fever symptoms of malaria, but it is not often used now because of its side-effects.
9. Normal fibrous tissue is replaced by adipose tissue when more food is eaten than is necessary.

10. The cells on the surface of the skin are constantly being replaced by new cells.
11. Patients are sometimes given placebo tablets and begin to feel better because they believe that they had been given real drugs.
12. Over 70 works have been ascribed to Hippocrates [hi'pokrs'ti:z] (around 400 B.C.) and he is traditionally regarded as "the father of medicine".
13. Celsus ['selsas] (1st century A.D.) is particularly remembered for his account of the signs of inflammation.
14. Herophilus [hi:'ro:fal9s] (335 — 280 B.C.), the founder of anatomy was followed and his observations were extended by his pupil Erasistratus [.ere'sistratas] (310 — 250 B.C.), who was the founder of physiology.

Упражнение 8

А. Соедините две части предложений, согласуя их по смыслу и грамматически, то есть сказуемое (в правой колонке) должно соответствовать подлежащему (в левой колонке) в лице и числе.

1. The 206 bony elements	a) is dependent upon a proper supply of calcium and phosphorus to the bone tissue.
2. Bone formation	b) are arranged round the openings for eyes, nose and mouth.
3. The inner core of bones	c) is made up of bony vertebrae.
4. The cranial bones of a newborn child	d) are not completely joined.
5. The spinal column	e) are covered by a thin layer of cartilage.
6. The ends of long bones	f) is composed of hematopoietic tissue.
7. The bones of the face	g) are held in place by tough fibrous bands — ligaments.

Упражнение 9

А. Перепишите текст так, чтобы выделенные курсивом слова, которые выполняют функцию дополнения, стали в предложениях подлежащими, а сказуемое - в соответствующей форме страдательного залога.

Б. Переведите написанный вами текст с учётом того, что пассивная конструкция английского глагола может передаваться на русский язык их активными эквивалентами.

Например: Пища измельчается зубами.
Зубы измельчают пищу.

The teeth crush *the food* and the saliva moistens *it.* The muscular walls of the stomach break *it* down still further, while the gastric lining secretes *juices* to continue the process. The liver and pancreas secrete *juices* into the upper section of the smaller intestine, and these convert *the food so* that the body can assimilate *it.* In the intestine, tiny projections cover *the walls,* and these absorb *the nourishment* from the food. Here the body absorbs *most of the liquid* from the undigested food, and excretes *the remainder* as waste.

Упражнение 10

А. Определите время и залог сказуемого в каждом предложении.

Б. Переведите предложения.

1. The skeleton makes up about 18 per cent of the weight of the human body and is made up of a little more than 200 individual bones.
2. Living organisms are affected by and affect the non-living world strongly.
3. Blood has been investigated intensively from the early days of biochemistry.
4. The lymph is continually being drained away from all over the body by a large number of small lymph vessels.
5. The outlook for patients with hypertension has improved markedly in recent years with the development of antihypertensive drugs.
6. Some organs are rapidly affected if the patient lacks oxygen for even a short time.
7. An upper respiratory infection of the nose and throat is usually followed by
middle ear infections.
8. Several metabolic problems that affect many systems influence the growth and the development of the skeletal system.
9. The organic and mineral components of the bone matrix are continually being
recycled and renewed through the process of remodeling.
10. The last 50 years have witnessed remarkable achievements in cardiovascular medicine and surgery.
11. Shock occurs when the metabolic needs of cells are not being met because of inadeguate blood flow.
12. This view is now being challenged.
13. Epidemiologists are now looking for evidence that the virus is being passed from person to person.
14. Before this century, experiments with transfusion often failed, with disastrous re suits, owing to the fact that blood groups had not yet been discovered.
15. The chemistry of the brain is little understood but the evidence at least shows
that many mental disturbances are associated with and perhaps due to interference with certain chemicals.
16. Acid rain is being blamed for rapid decay of old limestone buildings.
17. In the most severe forms of acute gastritis there is ulceration of the mucosa, perforation of the stomach wall and peritonitis. Where there has been extensive
tissue damage, healing is by fibrosis, which reduces elasticity and peristalsis.
18. No good explanation of the mechanism of this phenomenon has ever been advanced.

Упражнение 11

В соответствии с содержанием предложений употребите глаголы, стоящие в скобках, в действительном или страдательном залоге.

1. Most vitamins ... (require) only in extremely small amounts, and each vitamin ... (be) present in many different foods.
2. Synthetic and natural vitamins usually ... (have) the same biological value.
3. Some vitamins ... (occur) in inactive forms that... (not influence) chemical reactions.
4. Hopkins and Funk ... (develop) the vitamin theory of deficiency diseases.
5. As each new vitamin ... (discover) it ... (give) a letter.
6. Vitamin A ... (keep) the skin healthy and ... (help) produce mucous secretions
   that ... (build) resistance to infection.
7. In vitamin A deficiency the epithelial tissues of many organs ... (affect).
8. Vitamin B deficiency ... (accompany) by poor growth, dermatitis, anemia, kidney and adrenal lesions.
9. Several coenzymes of vitamin B_{12} ... (exist).
10. There ... (be) several forms of vitamin D.
11. Little ... (know) of the metabolic role of vitamin D.
12. In vitamin D deficiency there ... (be) a failure of deposition of calcium salts in the cartilaginous matrix of the bones.
13. The body ... (require) only small amounts of vitamin D Which ... (provide) by a
    balanced diet and normal exposure to sunlight.
14. Intestinal bacteria ... (manufacture) vitamin K in the body, and so deficiencies of this vitamin rarely ... (result from) a poor diet.

Тексты для тренировочного перевода (к разделу 2)

1. The relation of microbes to disease was fully established by Robert Koch (1843 — 1910) Much of his work on bacteria was done while he was a general practitioner in Prussia. Koch showed that specific human diseases are caused by specific microorganisms. Most of the bacteria were identified by Koch or one of his many pupils.
2. The immune system was not recognized as a separate system until recently .Although evidence of immune protection was known in ancient times, the first inkling of how immunity is caused came in 1884, when macrophages were first observed. Since then, many different components of the system have been found.
3. Digestion comprises all the processes by which nutrients are liberated from food, broken down into their chemical components by the action of enzymes and

absorbed by the body. In the foregut the food is taken in by means of the lips, teeth and tongue, chewed, lubricated with saliva and swallowed in single bits.

4. From the stomach, the chyme passes into the small intestine through the pyloric sphincter. Much material is still undigested. Proteins have not been completely broken down, starches are still being converted into simple sugars, and fats remain in large globules. In the small intestine the process of digestion is completed by the action of the bile, which is secreted by the liver and released by the gall bladder, and by the action of various enzymes.
5. The body is continuously exposed to damage by viruses, bacteria, toxins and chemicals, and foreign proteins of plant origin. These insults are received by the skin, the respiratory system, and the digestive system. The skin suffers far more injuries than the rest of the body. This organ is looked upon as an important means that protects the tissues against mechanical, chemical and bacterial injuries, Where protection against mechanical injury is particularly called for, the skin
develops thickness, as on the sole of the foot, and on the palms of the hand.
6. Most of the leukocytes, but not all, are manufactured in bone marrow along with erythrocytes. They are formed in large quantities. The number of leukocytes in the blood will rise or fall in response to certain abnormal conditions. A rise is called leukocytosis and a fall is leukopenia. Before the discovery of antibiotics, severe leukopenia was usually fatal.
7. Senile erythrocytes are phagocytosed and broken down in the reticular connective tissue of the bone marrow and the spleen. Iron from the hemoglobin is temporarily stored in the phagocytes of the reticular connective tissue as hemosiderin, which in turn is broken down to ferritin, a molecular combination of six atoms of iron, Ferritin is carried through the blood stream to the bone marrow. Here it is taken* up by the reticular cells which eventually release it to the erythroblasts.
8. The thymus gland was given its name by Galen in the second century AD because of its resemblance to a bunch of thyme flowers. The thymus gland is now established as a vital part of the immunological system. Until 1960 the function of the thymus was completely unknown. Certain relationship have been found between the thymus and the transmissibility of leukemia in experimental animals. A great deal has been written about the relationship of thymus enlargement to sudden
death in infants, particularly during anesthesia.
9. Thromboplastin is widely distributed in the body and is held securely in the tissues and the platelets of the blood. It is the "trigger" mechanism which initiates the clotting process. When there is a wound thromboplastin is liberated from the tissues and the clotting process begins promptly. Excessive bleeding due to a deficiency of thromboplastin is observed in patients with hemophilia.
10. Surgery of the brain has been performed since prehistoric times. Examinations of the skulls which had been operated upon give ample evidence that some who underwent such operations survived them for considerable periods of time. In fact such early operations were apparently carried out in all parts of the world, yet much evidence of them has been found in the North and Central America.

Тексты для контрольного перевода (к разделу 2)

1. Medicine and pharmacology are two sciences which have changed a great deal in recent times. Long ago, medicine was a guessing game. Medical care was given by doctors, pharmacists, and even barbers! All of them experimented freely on their patients, who often died as a result. Early pharmacists depended on plant remedies which had been developed over the centuries. One popular remedy during the Middle Ages was poppy juice, which contains opium (a narcotic). Other remedies were animal fat and even crocodile blood, which was considered a "cure" for poor eyesight. Other common practices were dangerous and sometimes
fatal. For instance, drilling a hole in the patient's skull. Perhaps this was done to treat head wounds or to relieve pressure inside the head. People whose diseases
were "incurable" often looked for help from the spirit world, astrology, and magic. Astrology, which was valued as a method of diagnosis, was even taught in many medical schools. Medicine has become a reliable science only in recent times. Even now, however, it still involves a certain amount of experimentation.
2. Evidence shows that the heartbeat originates in the S-A node and that alterations in heart rate are governed by this node. Hence it has been named the "pacemaker" of the heart. In a normal heart, when the contraction wave has spread through the atria it stimulates the bundle of His which conveys the impulse to the ventricles. By this means the ventricles are ready to contract just when they have been
filled. Conduction in the bundle of His takes about 1/6 second. There is no other path for the impulse, because the muscle fibres of the atria and ventricles do not communicate. Degeneration of the bundle fibres impairs or prevents conduction, and some or all of the impulses fail to reach the ventricles.

РАЗДЕЛ 3 Согласование времён (Sequence of Tenses)

А. Пользуясь таблицей, определите время действия, описанного в придаточном предложении: "до", "одновременно" или "после" действия, описанного в главном предложении.

Упражнение 12

СОГЛАСОВАНИЕ ВРЕМЁН В АНГЛИЙСКОМ ЯЗЫКЕ

главное предложение	They **said** that... (сказуемое в **Past Indefinite)** (Они **сказали,** что ...)		
придаточное предложение (глагол-сказуемое выражает	they **had worked** in the laboratory the week before.	they **worked** in the laboratory.	they **would work** in the laboratory the next month.
	Past Perfect (had + V_3) предшествующее действие: они работали в лаборатории на прошлой неделе.	**Past Indefinite** (V_2) одновременное действие: они работают в лаборатории.	**Future in the Past** (would + V) будущее действие: они будут работать в лаборатории в следующем месяце.

Б. Переведите предложения.

1. Leonardo da Vinci [h:a'na:do de 'vintji:] (1452— 1519) suggested that blood left the heart by the arteries and returned by the veins.
2. Erasistratus [.era'sistratas] (3rd century B.C.) taught that nerves were hollow and acted by transmitting vital spirit.
3. Vesalius [vi'seili:as] (1514— 1564) found anatomy more or less where Galen ['geilsn] (A.D. 130-200) had left it. He told his students that they would learn anatomy only by doing their own dissections, not from books or lectures.
4. Haller [Ъa:1ə] (1708— 1777) proved that some nerve fibres carried impulses from the central nervous system which stimulated the muscles, while others carried sensory impulses to the brain.
5. Jenner ['dзener] (1749— 1823) took up a popular belief that people who had had cow-pox were safe from smallpox. He hoped that there would be no more smallpox all over the world.
6. Schwann [jwa:n] (1810— 1882) made the important discovery that animals were composed of living cells. He showed that the fundamental unit was not the tissue, but the cells that composed it.

7. Pasteur [pa:s'ta:] (1822—1895) proved that fermentation depended on living microbes. He showed that fermentation, putrefaction and infection were all due
to contamination by microbes.
8. Andral faendrel] calculated the proportions in which the major elements of blood
existed in health and in illness, and described circumstances which changed the quantitative relationship of these elements to each other.

Тексты
для тренировочного и контрольного перевода
(к разделу 3)

1. In 1876 Ross (1857 — 1932) made up his mind that he would master his medical course and qualify for an interesting job in India. He learned that millions of India's people were dying from malaria. In 1897 Ross proved that malaria was transmitted by mosquito bites. He discovered that when a mosquito bit a person
it did not only suck his blood, but also injected the fluid containing the malaria parasite. In later years Ross was known as "Malaria Ross", the man who showed how malaria was carried and how it could be prevented.
2. Banting (1891 — 1941) began to think that possibly the Islets of Langerhans had in
them something which was valuable to the human body. Doctors had long teen studying diabetes. They knew that the pancreas had some influence on the way which sugar was used in the human body. But none of them thought that the islets of Langerhans were the really important part of the pancreas. Banting went to the University of Toronto. Dr. Maclead told him about the work that had been done on this problem of pancreas and said that during the summer part of the laboratory would be unused and Banting would be allowed to have ten dogs for
his work. He would also have a student to help him. In 1922 Banting and Best
isolated insulin.

РАЗДЕЛ 4 Модальные глаголы (Modal Verbs)

Упражнеeие 13

А. Найдите ядро каждого предложения, где составное сказуемое включает модальный глагол и инфинитив в активной или пассивной форме без частицы *to.*

Б. Переведите предложения.

1. Food must undergo certain changes before it can be of any service to the cell.
2. The cell may be best pictured as a self-sufficient chemical factory.
3. Spleen is soft and cannot be felt on abdominal examination when normal in size, consistency and position.
4. Organ such as the heart must be transplanted as soon after death of donor as possible; skin, corneas, bone and some blood fractions, however, can be stored.
5. People with back trouble should not lift heavy weights.
6. The body could not cope with an excess of blood sugar.
7. The eye muscles, or the nerves which supply them, may be affected by disorders which arise later in life.
8. Any person who is taking corticosteroid drugs or who has previously had a severe reaction to the same vaccine should not be vaccinated.
9. Healthy bones cannot be built without calcium salts, and the body cannot utilize these salts in the absence of vitamin D.
10. Blood donors must meet certain requirements of age, health and weight.
11. All physicians find that there can be no end to their education — they must keep up with new developments.
12. The movement of food in the large intestine can be followed by giving a patient a meal of some opaque substance, such as barium sulphate and taking a series of X-ray photographs afterwards.
13. What characteristics must good surgeon have? Surgeons need good eye-hand coordination, manual dexterity, and the physical stamina.
14. A wide variety of other systems may be damaged by the rheumatoid process.
15. Backache can result from bad posture, a soft bed or muscle strain, but it can also be caused by rheumatism, typhoid fever and osteoarthritis.
16. The disinfectant must be diluted in four parts of water before it can be used on the skin.
17. The ointment should only be used externally.
18. Anaemia, from whatever cause, if of sufficient severity and duration may cause heart failure.

Тексты для тренировочного перевода (к разделу 4)

1. The bony structures must be regarded as active store-houses of mineral matter. When the need arises the body can draw upon bones for constituents like lime
and phosphates. Under certain conditions the bones indeed may give up so much of their mineral matter that they become soft and can no longer function as an
effective framework.
2. Each organ system of the body may be attacked by a number of diseases. These
diseases have certain things in common no matter which organ is affected. Other symptoms and signs may be particular to the individual organ. The central nervous system may be attacked by the same diseases as other organs. Because the nervous system controls the working of the body in so many ways, diseases may affect not only a part of the system but also another part of the body.
3. By itself, a virus is a lifeless particle that cannot reproduce. But inside a living cell, a virus becomes an active organism that can multiply hundreds of times. Most viruses can be seen only with electron microscope. Virologists demonstrated in the early 1900's that viruses could cause cancer in animals.
4. Pain in the abdomen may be caused by a variety of conditions. Within the abdomen
there are vital organs of the body which can be the source of pain when something goes wrong. In addition, pain may be "referred" to the abdomen from organs elsewhere in the body, for example, pneumonia may sometimes cause abdominal pain, as may a heart attack. In fact, locating the cause of pain in the abdomen may be a difficult job for the physician.
5. The muscular wall, or septum, which runs down the centre of the heart divides it into two sides: the right heart and the left heart. There is no connection between the two sides. Each side must perform different work. Thus, the heart may be called a dual pump. It must receive the venous blood and send it into the lungs for fresh oxygen. This is done by the right side of the heart. The left side must receive blood from the lungs and pump it out into the body.
6. The patient who is taking nitroglycerin should keep the medication at hand at all times. It should be kept in a tightly closed, dark, glass container, free from heat
and moisture. The drug is not addicting and there is no limit to the number that may be taken in a 24-hour period; however, no more than three tablets should be taken at 5 minute intervals during an attack. If no relief is obtained 15 minutes after the third tablet is taken, the physician should be notified immediately.

Тексты для контрольного перевода (к разделу 4)

1. Heart attack is diagnosed most readily by means of an electrocardiograph. This machine records patterns of electrical activity of the heart and can detect changes in activity that are associated specifically with heart attack.

Once they have been hospitalized, heart-attack victims can be helped in a number of ways. For example, in some cases further damage to the heart can be prevented by dissolving the clot that caused the attack. Injections of substances, such as streptokinase or tissue plasminogen activator are used for this purpose. In many hospitals heart-attack victims are routinely admitted to specialized coronary care units. In these units the electrical rhythm of the heart is monitored continuously, and arrythmias (abnormal rhythms) can be treated promptly.

If the heartbeat rate falls too low, a temporary pacemaker may help. The pacemaker is inserted into a vein and moved to the right ventricle, where its electrical impulses stimulate the heart to beat more quickly. Similarly, catheters for monitoring blood pressure may be inserted into a vein.

2. Another method of artificial respiration which has now found favour is known as "mouth-to-mouth respiration". The principle on which this method is based is that expired air from the resuscitator's lungs is breathed into the patient's lungs. It is important that there should be an air-tight seal between the two mouths and that the patient's nostrils should be closed by the resuscitator's hand. The patient's head should be held back and care should be taken to ensure that the patient's tongue does not obstruct the air-way. The resuscitator must also guard against the use of excessive force because this might propel sea water or vomit back into the patient's lungs. He should bear in mind that although he himself will have to breathe more deeply than is his custom he must not overdo this. If he does he might easily faint himself.

ЧАСТЬ 2 Неличные формы глагола (Non-Finite Forms of the Verb)

ДЕФИНИЦИИ:

Participle (причастие) — неличная форма глагола, которая обладает как признаками глагола, так и свойствами прилагательного и наречия.

Gerund (герундий) — неличная форма глагола, которая обладает как признаками глагола так и некоторыми признаками существительного.

Infinitive (инфинитив) — неопределённая форма глагола, которая отвечает на вопросы "что делать?", "что сделать?".

ФУНКЦИИ НЕЛИЧНЫХ ФОРМ ГЛАГОЛА В ПРЕДЛОЖЕНИИ

Обозначения: 0 — выполняет функцию 0 — входит в состав

	подлежащее	сказуемое	дополнение	определение	обстоятельство
1. Participle I Active				•	•
2. Participle I Passive				•	•
3. Participle I Perfect Active					•
4. Participle I Perfect Passive					•
5. Participle II				•	•
6. Gerund	•		•	•	•
7. Infinitive	•		•	•	•

РАЗДЕЛ 5 Причастие (The Participle)

5.1 Причастие I в функции определения

Упражнение 14

А. Найдите причастие I (Ving), выполняющее функцию определения, которое может стоять как до, так и после определяемого существительного.

Пример: Pulsating heart is a pump distributing to the brain and all other parts of the body important substances.

Б. Переведите предложения с причастием I в функции определения, которое в русском языке соответствует причастию действительного залога.

Например: pulsating heart - пульсирующее сердце

1. The lining membrane of the lung secretes mucus.
2. Aspirin can have an irritating effect on the lining of the stomach.
3. The working muscle needs more oxygen and gives off more carbon dioxide than the resting muscle.
4. The liver is the major detoxicating organ in the body.
5. The fluid escaping from blood soon clots.
6. Blood arriving in the lungs from the body has a high concentration of carbon dioxide in it.
7. The white blood cells include a variety of cells differing in structure, shape and functions.
8. Sodium is a major factor determining blood volume and blood pressure.
9. No evidence supporting this hypothesis has yet been described.
10. Chyme entering the duodenum is acid in reaction because it has been mixed with the acid gastric juice.
11. Certain diseases occuring in various tissues have been recognized as potentially dangerous because of the occasional development of cancer on this background.
12. The processes taking place in the large intestine are due mostly to the millions of bacteria living there.
13. Inflammation involving the mucosal and smooth muscle layers of the respiratory tract plays a major role in the development of acute asthmatic bronchospasm.
14. In addition to the digestive glands existing in the walls of the canal there are two large glandular organs lying outside it and pouring their secretion into it by their ducts; these are the liver and the pancreas.
15. As the smallest units retaining the fundamental properties of live, cells are the "atoms" of the living world.

Упражнение 15

А. Найдите в следующих дефинициях определение, выраженное придаточным предложением, и слово, к которому оно относится.

Б. Перепишите дефиниции, заменив определение, выраженное придаточным предложением, на эквивалентный ему причастный оборот.

Пример: blood that carries oxygen
= blood carrying oxygen

В. Переведите предложения.

1. An artery is a blood vessel that takes blood from the heart to the tissues of the body.
2. Blood is the red fluid that circulates via arteries and veins through the bodies of vertebrate animals.
3. Bone is a metabolically active tissue that carries out two major metabolic functions.
4. The bronchi are air passages that lead from the trachea into the lungs.
5. A hair is a long thread that grows on the body of an animal, from a small pit in the skin — a follicle.
6. The humerus is the top bone in the arm that runs from the shoulder to the elbow.
7. A kidney is one of the two bodily organs that remove waste matter from the body in the form of urine.
8. The pharynx is the muscular passage that leads from the back of the mouth to the oesophagus.
9. The pleura is one of two membranes that line the chest cavity and cover each lung.
10. The skeleton is all the bones that make up a body.
11. The skin is flexible tissue that forms the outside surface of the body.
12. The throat is the top part of the tube that goes down from the mouth to the oesophagus.
13. The tibia is the largest of the two long bones in the lower leg that runs from the knee to the ankle.
14. The liver is an internal bodily organ that secretes bile and purifies the blood.
15. The heart is a muscular organ that pumps blood to all parts of the body.
16. Bile is a fluid that leaves the liver through a network of ducts, the bile ducts.
17. Cells are the microscopic particles that build up the tissues.

Упражнение 16

А. Найдите определение, выраженное комплексом "существительное + причастие", которое всегда стоит перед определяемым словом, характеризуя выполняемое им действие.

Пример: the blood-forming tissue
= the tissue that forms blood

Б. Переведите предложения.

1. The skeleton houses bone marrow, the blood-forming tissue.
2. The haemoglobin-containing erythrocytes are produced in bone marrow and released into the circulation, where they remain for about 120 days,
3. The symptoms of bacterial pneumonia are a sputum-producing cough, fever, | chills and chest pain.
4. Lungs are the respiratory organs in air-breathing vertebrates.
5. A heat-regulating centre in the hypothalamus of the brain functions much like a thermostat.
6. Aspirin is one of the most reliable pain-relieving medications.
7. The weight-bearing joints are the most frequent site of degenerative diseases,
8. DNA is the information-storing molecule and RNA is the information-carrying molecule of the cell.
9. Blood-clotting proteins circulate in the blood plasma in an inactive proenzyme form.
10. When the coronary arteries are narrowed by atherosclerotic plagues, the flow of oxygen-bearing blood to the heart is impaired.
11. Vitamin As general immunity-boosting properties have been known for a long time.
12. Thanks to the constant work of osteoblasts (bone-building cells) and osteoclasts (bone-destroying cells) our entire skeleton is replaced every 7 years or so.
13. Transfusions of red blood cells are sometimes required for emergency treatment of severe life-threatening anemia.
14. Hemoglobin is a red iron-containing protein in the red corpuscles.
15. Fat is a necessary part of diet because of the vitamins and energy-giving calories which it contains.
16. Pollution is now studied in laboratories and evaluated medically for its cancer-causing potential.
17. Antibody-producing cells bear specific antibody molecules on their surfaces.
18. In 1628 W. Harvey ['hd:rvi:] published an epoch-making dissertation on the circulation of the blood.

Упражнение 17

Переведите предложения, содержащие определение, выраженное пассивной формой причастия I (being + V_3), которое всегда стоит после определяемого существительного и соответствует в русском языке страдательным причастиям.

Например: the acid, being secreted by the stomach, ...
кислота, секретируемая желудком, ...

1. Bile is the substance being made in the liver. , 2. Mucus is a slippery liquid being secreted by mucous membranes inside the body.
3. A typical joint is the juncture of two bones being held together by ligaments.
4. Bone is a living, dynamic organ, being continuously remodelled in response to external mechanical and chemical influences.
5. Diabetes mellitus is a disease which results from insufficient insulin being produced by the special cells in the pancreas.
6. The work being done at present in the laboratory is aimed at solving such prob lems as blood clotting and infection.
7. Life extension experiments being performed on animals have shown promising results.
8. Women being treated with this drug should avoid breastfeeding.
9. Many people being treated for HIV (human immunodeficiency virus) infection undergo a redistribution of body fat which can cause abnormal levels of fat in the blood.
10. Two fundamental procedures being used to study the genetic basis of the disease are body mass index and genotypic linkages.
11. The needles are inserted in the skin to varying depths according to the point of insertion and the condition being treated.
12. The main vaccine being used to eradicate polio consists of a live, weaked form of
the virus.
13. In the US alone, some 14,000 people are infected and die each year from drug-resistant microbes being picked up in hospitals.
14. A thorough knowledge of the apparatus being used for mechanical ventilation is vital to competent care of the patient.
15. The amount of carbon dioxide constantly being taken from the atmosphere during daylight hours by all green plants is enormous.
16. Arteries have strong, elastic walls because the blood being pumped from the heart is under pressure.

5.2 Причастие I в функции обстоятельства

Упражнение 18

А. Найдите причастие I (Ving) в функции обстоятельства, которое может стоять как до, так и после ядра предложения. Такое обстоятельство относится к глаголу-сказуемому и характеризует выраженное им действие.

Б. При переводе на русский язык причастие I в функции обстоятельства может соответствовать:

1) деепричастию несовершенного вида;
2) существительному с предлогом;
3) придаточному обстоятельственному предложению.

(В зависимости от вида обстоятельства придаточное предложение может присоединяться союзами:

а) когда; в то время, когда - обстоятельство времени,

б) так как; поскольку - обстоятельство причины.)

Например: Passing through the lungs, the blood picks up oxygen.

1) Проходя через легкие, ...
2) При прохождении через лёгкие, ...
3) Когда кровь проходит через лёгкие, ...

В. Переведите предложения.

1. (While) passing through the pulmonary capillaries, blood absorbs the oxygen which entered the body during inhalation.
2. When listening to the lungs, the physician places the stethoscope on many different areas of the front and back of the chest.
3. When observing a patient, the rate and depth, and ease or difficulty of breathing are noted.
4. Blood circulates through the blood vessels carrying oxygen and supplying nutrients to the organs and removing carbon dioxide and other waste products for excretion.
5. The mucus that accumulates in the sinus causes pressure on the sinus walls, resulting in discomfort, fever, pain, and difficult breathing.
6. Certain kinds of chemicals can affect the skin, causing some forms of dermatitis.
7. A malfunctioning spleen may increase its phagocytic activity to an abnormal degree, resulting in premature destruction of blood cells.
8. The platelets help the blood to clot, thereby preventing its loss in case of bleeding.
9. Septic shock syndrome occurs when the body attacks its own tissues while trying to fight off a bacterial infection.

10. When sweat from the sweat glands reaches the surface it evaporates, cooling the body and thus playing a major part in the maintenance of a temperature level inside the body.
11. Entering the body through the intestinal tract, the typhoid bacillus starts multiplying
in the blood stream, causing fever and diarrhea.
12. Using very thin needles, massage, or mild electrical shocks at specific locations along a sick person's body, an acupuncturist tries to restore the body's balance.
13. Beginning life as a single cell, the human organism undergoes an extraordinary
complicated process of development.
14. Being the only tissue that is in contact with all parts of the body, blood serves as a system through which food and oxygen are transported to the cells and waste products are removed.

Упражиение 19

А. Найдите перфектные формы причастия I в действи тельном или страдательном залоге (having + V_3 / having + been + V_3), которые выполняют функцию обстоятельства времени или причины и передают значение предшествования или законченности дей ствия по отношению к действию, выраженному гла голом-сказуемым.

Б. Обстоятельство, выраженное перфектными форма-ми причастия I, передаётся на русский язык одним из следующих способов:
1) деепричастием совершенного вида;
2) существительным с предлогом;
3) придаточным обстоятельственным предложе нием.

Например: Having passed through all the body
blood enters the right auricle.
1) Пройдя через весь организм, ...
2) После прохождения по всему организму ...
3) После того, как кровь прошла по всему организму, она ...

В. Переведите предложения.

1. Having invaded living cells viruses grow and multiply.
2. Having started from the left auricle as pure arterial blood, it returns to the right
auricle as impure venous blood.
3. In the infant at birth the entire gastro-intestinal canal is sterile, but remains so for
only a few hours, when a number of bacteria appear in faeces, probably having gained access to the intestines by way of the mouth.
4. Certain people are by nature liable to depression, and, having recovered from
one attack, they may have another later on.

5. Having benefited from the medical and nutritional advances of the past ninety
years, people are on the average living much longer than their ancestors.
6. Having been arrested in the capillaries some tumour cells stimulate the produc tion of fibrin.
7. Having been formed, the bones continue to grow until the body has acquired its
full structure.
8. A hormone is a chemical messenger which, having been formed in one organ or
gland, is carried in the blood to another organ or tissue, where it influences activity, growth and nutrition.
9. Having determined the proper blood groups, the blood of the donor and the recipient are directly cross-matched, that is, the red cells of the donor are placed in contact with the serum of the recipient, and vice versa.

Упражнение 20

А. Найдите в каждом предложении подлежащее и ска зуемое и так называемый "Независимый причаст ный оборот", который включает существительное (иногда с предлогом *with)* и причастие с относя щимися к нему словами; причём существительное, стоящее перед причастием, никогда не совпадает с подлежащим всего предложения.

Б. На русский язык "Независимый причастный обо-рот" передаётся придаточным обстоятельственным предложением или сочинительным предложением, присоединяемым словами *причём, и, а, но* или бессоюзно (то есть существительное становится подлежащим, а причастие - сказуемым русского предложения).

Например:

The human heart is divided by a septum into two halves - right and left - each half being further divided into two cavities, the upper of the two being termed the auricles and the lower - the ventricles.

У человека сердце разделено перегородкой на две половины - правую и левую, - причём каждая половина в свою очередь делится на две камеры; верхние камеры называются предсердиями, а нижние - желудочками.

В. Переведите предложения.

1. Veins have thinner walls than arteries, the difference in thickness being due to the smaller amount of elastic and muscular tissues.
2. The white blood cells are less numerous than the red cells, the ratio being about
one white cell to every six hundred red cells.
3. The pulse is usually examined at the radial artery at the wrist, the advantage of position being that the artery is near the surface and easily compressed against the bone.

4. The frequency of pulse varies with age and also with sex, adult female having six or eight more beats a minute than male.
5. The stomach is shaped like a pear, its broad end lying to the left under the ribs, and its narrow end at the lower level on the right side.
6. Like the stomach, the intestines are in constant movement, the movement being necessary for mixing the contents and for their propulsion through the body.
7. One end of the muscle is more fixed than the other, the rigid end being known
as the origin of the muscle.
8. The liver secretes bile more or less continuously, the amount in 24 hours varying from a pint to more than a quart.
9. Formation of the clot occurs in three stages, each involving the production of a special chemical substance.
10. The way the kidneys excrete substances changes in the first few years after birth, with different mechanisms maturing at different times.
11. In arrhythmia, the rhythm may be regular, as in the normal heartbeat, with each beat of the atria being followed by one beat of the ventricles, or it may be irregular.
12. The diagnosis having been made, it remains to be determined whether the syndrome
is caused by hyperplasia, an adenoma, or adenocarcinoma.

Упражнение 21 (обзорное)

А. Проанализируйте структуру каждого предложения
и определите его ядро.

Б. Найдите причастие I и определите его функцию в предложении.

В. Переведите предложения.

1. The skin covers the body completely forming a waterproof protective coat that constitutes the first barrier to invading organisms.
2. The heart is a very powerful muscle, contracting between 60 and 200 times a minute depending on the level of activity.
3. The diameter of the respiratory passages is altered by contraction or relaxation of the involuntary muscle in their walls, thus regulating the volume of air entering the lungs.
4. Arteries supplying contracting muscles dilate, bringing more blood to these organs.
5. Epithelium is layers of cells covering an organ, including the skin and the lining of all hollow cavities except blood vessels, lymphatics and serous cavities.
6. Endocrine glands may be destroyed by invading tumours, causing hormone deficiency.
7. Excessive bleeding may deplete the body of circulating blood, causing danger to the survivor.

8. The smooth muscle layer surrounding blood vessels becomes thicker and stiffer due to a buildup of calcium and collagen, making the vessels less able to transmit pressure waves from the heart.
9. More than 100 distinct varieties of cancer are recognized, each having a unique set of symptoms and requiring a specific course of therapy.
10. Some tumors affecting the pituitary gland result in the secretion of large amounts of melanocyte-stimulating hormone.
11. Cancer cells penetrate neighboring tissues, destroying normal cells and taking
their place.
12. Air containing oxygen and carbon dioxide is breathed into the lungs, filling the alveoli.
13. Sweat evaporates, thereby removing the heat from the skin and cooling the blood circulating beneath it.
14. Digitalis strengthens the failing heart, increasing the force of contraction and producing a more efficient emptying of the ventricles.
15. The human skeleton is composed of 206 bones, with the vertebral column forming the central supporting structure.

5.3 Причастие II в функции определения

Упражнение 22

А. Найдите причастие II (V_3), выполняющее функцию определения, которое может стоять как до, так и после определяемого существительного.

Пример: Deoxyaenated blood, carried to the heart by the vena cava, flows into the right atrium.

Б. Переведите предложения, содержащие причастие II в функции определения, с учётом того, что причастие II имеет пассивный оттенок.

Например: blood, carried ...

кровь, переносимая ...

1. Materials needed by tissue cells pass out through the walls of the blood vessels and become dissolved in lymph.
2. Substances not needed by the body generally are not reabsorbed but instead pass on through the renal tubules into the urine.
3. The body replaces the withdrawn blood within a few weeks.
4. Most malignant tumours found in bone have spread there from another organ.
5. Much of the insulin now used is prepared by genetic engineering techniques from micro-organisms \
6. The organs most intimately related to the substances carried by the blood are the kidneys, spleen and the liver.
7. Symptoms produced by the decreased blood supply depend on the particular part of the body.
8. In certain diseases associated with marked changes in the blood, such as leukaemia, the spleen becomes chronically enlarged.
9. Many symptoms of allergy are apparently due to histamine released by damaged tissue.
10. The liver is a large unpaired gland, situated in the upper part of the right-hand side of the abdominal cavity, separated from the thoracic contents by the diaphragm.
11. In the adult, most of the skeleton is made up of bone tissue, composed of cells called osteocytes, embedded within a hard substance produced by the cells.
12. Chambered hearts, as found in vertebrates, consist of a series of interconnected muscular compartments separated by valves.
13. The amount of genetic information held within a set of human chromosomes is very large.
14. The degree of relaxation produced varies with the kind of sedative, the dose, the means of administration, and the mental state of the patient.

Упражнение 23

А. Найдите в следующих дефинициях определение, выраженное причастным оборотом с причастием II.

Б. Перепишите дефиниции, заменив причастие II на эквивалентное ему придаточное определительное предложение со сказуемым в страдательном залоге.

Пример: The brain is the cranial part of the central nervous system, situated inside the skull.
= which is situated inside the skull

В. Переведите предложения.

1. The cerebrum is the largest part of the brain, formed of two sections, the cerebral hemispheres.
2. Glaucoma is the condition of the eyes, caused by abnormally high pressure of
fluid inside the eyeball.
3. Insulin is a hormone produced by the pancreas.
4. Mucus is a slippery liquid secreted by mucous membranes inside the body.
5. Teeth are a set of bones in the mouth used to chew food.
6. Palate is the roof of the mouth, divided into the hard palate in front and the soft
palate behind the back teeth.
7. The digestive system is all the organs and glands involved in the digestion of food, from the mouth to the anus.
8. The skull is the skeleton of the head, composed of many individual bones closely fitted together.
9. The spleen is an organ concerned with the formation and destruction of red blood cells.
10. Blood is the fluid pumped round the body in the circulatory system.
11. Platelets are tiny particles formed in the bone marrow.
12. The lymphatic system is a network of vessels found in all parts of the body except the central nervous system.

Упражнение 24

А. Найдите определение, выраженное комплексом "существительное + причастие II", которое всегда стоит перед определяемым словом и эквивалентно по значению придаточному предложению со сказуемым в страдательном залоге.

Пример: oxygen-enriched blood
= blood that is enriched with oxygen

Б. Переведите предложения.

1. The oxygen-enriched blood is distributed through the cardiovascular system to all tissues.

2. Pneumonia is one of the most common hospital-acquired infections.
3. Noise-induced stress may contribute to mental illness.
4. Good ventilation greatly reduces the risk of air-borne infection.
5. Breast-fed babies receive antibodies in mother's milk.
6. A cell is a membrane-bound portion of living matter, the smallest unit capable of an independent existence.
7. Oxygen-starved cells in the immediate vicinity of the clot die within a few hours.
8. The outer ear includes the skin-covered flap of cartilage and the auditory canal,
which leads to eardrum.
9. When disease-weakened lungs are not strong enough for normal respiration, a
machine must help out.
10. For centuries, the scalpel has been the foremost, time-tested instrument of the
surgeon.
11. Decades of research and clinical experiences have yielded a wide variety of
methods for diagnosing and managing the various types of cancer-related pain.
12. Most of the changes seen in the blood cells with age are related to the increased
prevalence of a number of age-related diseases.
13. In an acute attack, the pus-filled appendix may burst, causing a potentially lethal spread of infection.

Упражнение 25

А. Найдите определение, выраженное причастным оборотом с причастием II, и определяемое существительное.

Б. Переведите предложения.

1. Carried by the blood, hormones reach other cells in the body and stimulate these cells.
2. Classified as a major tissue of the human body, blood is characteristically red, mobile fluid.
3. Composed of connective tissue the dermis contains most of the accessory struc tures of the skin.
4. Composed of water, bile salts, bilirubin and cholesterol, bile is secreted by the liver and stored in gall bladder.
5. Covered by a thin membrane, which allows them to move freely during breathing, the lungs are extended and contracted by the combined movement of the
diaphragm and the rib cage.
6. Characterized by inflammation and painful swelling, abscess may occur in various parts of the body.
7. Derived from the blood, lymph bathes the cells of the body, supplying them with nutrients and absorbing their waste products.

8. Enclosed by a two-layered membrane, the nucleus contains a liquid called
nucleoplasm.
9. Formed in the bone marrow stem cells, polymorphs make up two-thirds of white cells.
10. Monitored by receptors in the main arteries blood pressure can be controlled through changes in heartbeat and the flow of blood through the heart.
11. First recognized by Chinese in the 3d century B.C., the biological clock is an intrinsic mechanism that controls the rhythm of various metabolic activities of plants and animals.
12. Originally derived from opium and now mostly synthetic, narcotic drugs are exellent painkillers, but in excessive amounts they can cause coma or death.

5.4 Причастие II в функции обстоятельства

Упражнение 26

А. Найдите обстоятельство, выраженное оборотом с причастием II (V_3) и укажите, каким союзным словом вводится этот оборот.

Б. Подберите к союзным словам соответствующие им по контексту русские эквиваленты:
1) "если", "при условии";
2) "если не";
3) "когда";
4) "до тех пор, пока не ...";
5) "как только".

В. Переведите предложения.

1. The spleen cannot normally be felt from outside unless enlarged to three times its normal size.
2. Bile is stored in the gall bladder until required by the stomach.
3. The muscle contracts when stimulated by nerve impulses.
4. Once formed, the new cells usually begin growing.
5. Once established, blockages of the coronary arteries are irreversible.
6. A cataract is a loss of transparency in the lens of the eye, which, if left untreated, may lead to blindness.
7. If left untreated, the tumor may gradually spread into the surrounding tissues.
8. If not phagocytosed, cancer cells multiply forming metastatic tumours.
9. If diseased, the walls of the aorta can weaken, bulge and eventually start to leak.
10. If detected in its early stage, a cancerous growth may be removed surgically.
11. If caught by an adult measles can be very serious.
12. When combined with other nutrients, calcium is much easier to absorb.
13. When absorbed in massive amounts fat-soluble vitamins can produce acute symptoms of vitamin toxicity.
14. When infected the tonsils become enlarged and can interfere with breathing.
15. When fully digested, proteins are changed into amino acids.
16. When fully developed, the heart is about 5 inches from top to bottom and about 3.5 inches wide.
17. When properly treated, anaemia results in no permanent heart damage.
18. When taken in small amounts, caffeine increases the circulation and it is considered harmless.
19. The physical manifestations of an illness, unless caused by mechanical trauma, cannot be divorced from a person's emotional life.
20. Once fully developed, the disease rarely yields to treatment.

21. Noradrenalin, when administered, produces the same general effects as adre nalin, but is less potent.
22. A large number of chemical substances when taken into the body or applied to the body's surface are capable of producing severe allergic symptoms.

Упражнение 27

(обзорное)

А. Проанализируйте структуру каждого предложения и определите его ядро.

Б. Найдите причастие II и определите его функцию в предложении.

В. Переведите предложения.

1. Through coordinated nerve impulses and muscular contraction, initiated in the sino-atrial node of the right atrium, the heart pumps blood throughout the body.
2. The hormones produced by the anterior lobe differ from those made up by the
pars intermedia.
3. The most common medicine in treating arthritis is aspirin taken in large doses. Taken this way, it is an antiinflammatory as well as a pain-killer.
4. Breast-fed newborns develop fewer infections than bottle-fed babies because of
antibodies and white blood cells contained in breast milk.
5. Bernard ['banad] (1813— 1878) showed that glycogen forms am energy reserve held in the liver and muscles, which is converted to the simpler sugars when needed.
6. The wear and tear of the coronary arteries, combined with their small size, provides the background for the disease atherosclerosis, which, when complicated by thrombosis, is such a menace to many young and middle-aged men.
7. Unlike most simple liquids that are not easily changed when exposed to air, the physical and biochemical properties of blood undergo marked changes when blood is taken from the body's circulatory system and, for example, placed in a test tube.
8. There are more than 400 chemical substances called carcinogens which, when
introduced into the animal by subcutaneous or intraperitoneal injection, are often followed by a reaction on the part of the animal which results in cancer formation.
9. Most chemical reactions in living organisms only proceed sufficiently fast if mediated by catalic proteins known as enzymes.
10. Skin grafting is the repair of injured skin by placing pieces of skin taken from elsewhere on the body, over the injured area.

5.5 Функции причастий

Упражнение 28 (обзорное)

А. Проанализируйте структуру каждого предложения и определите его ядро.

Б. Найдите причастие I и причастие II и определите их функции.

В. Переведите предложения.

1. The heat produced by the body is the result of the oxidation processes occuring during life.
2. Lymphatic system is a one-way system returning to the blood stream substances not taken up by the venous capillaries.
3. Paralysis caused by neuritis freguently disappears when the disorder causing it is corrected.
4. The distended thin-walled veins may be ruptured by increased venous pressure or by the food passing through the oesophagus.
5. 999 is the number used in Britain when telephoning for the emergency services.
6. The most important function of sweat secreted by glands opening to the skin is the regulation of body temperature.
7. The human brain is the most complex object in the known universe, with billions of chattering neurons connected by trillions of synapses.
8. White blood cells, produced in the bone marrow and lymphoid tissue, engulf invading bacteria and foreign bodies and aid the repair of injured tissue.
9. Deoxygenated blood leaves the right ventricle by way of the pulmonary artery, which divides, sending branches to each lung.
10. If untreated, the infection may destroy kidney tubules, resulting in a need for mechanical cleansing of the blood.
11. A defective valve fails to close completely or cannot open fully, thus disturbing
the smooth flow of blood required for normal functioning of the body.
12. When animals breathe ozone, it causes immediate inflammation in the lungs, followed by a long-term abnormal stiffening, reducing the lungs' ability to take in air.
13. The depth of sleep is very variable, ranging from deep dreamless sleep to light sleep disturbed by afferent impulses and dreams.
14. Just as we can calculate the amount of fuel required to run an engine, so can we
assess the amount of energy-providing food necessary for the vital processes of man.
15. When platelets come in contact with roughened or injured lining of a blood vessel, the platelet cells disintegrate and combine with factors present in the blood plasma causing the release of a substance called thromboplastin.

16. As the arterioles become smaller in size, the three coats become less and less definite, the smallest arterioles consisting of little more than epithelium, surrounded
by a layer of smooth muscle.
17. From the capillaries, the blood, now depleted of oxygen and burdened with waste products, moving more slowly and under low pressure, enters small vessels called veins, ultimately guiding the blood on its way back to the heart.

Тексты для тренировочного перевода (к разделу 5)

1. The kidneys are the urine-producing organs of vertebrates. In humans the symmetri cal bean-shaped kidneys are situated on the upper part of the rear abdominal wall, one on each side of the vertebral column. Each kidney consists of approximate ly 1 million nephrons and supporting tissue. The nephrons eliminate unwanted substances from the blood, but remain important body constituents, so maintaining the volume and composition of body fluids within normal limits.
2. Bile is a thick, bitter, greenish-brown fluid, secreted by the liver and stored in the gall-bladder. Consisting of water, mucus, bile pigments, and various salts, it is discharged through the bile ducts into the intestine. Bile helps in digestion and absorption of food, particularly fats, and is itself reabsorbed, passing back through the blood of the liver. In jaundice, obstruction of the bile ducts prevents dis charge, leading to a build-up of bile in the blood and deposition in the tissues.
3. The symptoms produced by the decrease in blood supply depend upon the particular part of the body affected. Atherosclerosis of the arteries supplying the heart weakens the heart muscle and is a common cause of heart diseases. Atherosclerosis of the arteries of the brain may produce, in addition to hemorrhage, many of the changes observed in senility.
4. The arterial system begins at the left ventricle of the heart with the aorta, which
gives off branches that subdivide into smaller and smaller vessels, the final divisions called arterioles, being microscopic, and ending in a network of capillaries, which perforate the tissue like the pores of a sponge, and bathe them in blood that is
collected and brought back to the heart by veins.
5. Circulated by the heart through the arteries, veins and capillaries, blood carries oxygen and a variety of chemicals to all cells, acting as a delivery agent serving the needs of all cells. Blood also takes away waste products, including carbon
dioxide, from various tissues to organs such as the kidneys and the lungs which ultimately dispose these wastes to the environment. Thus, the blood serves as a collecting agent.
6. The liver is composed of a great number of small lobules, each made up of liver cells arranged in cords. The liver secretes bile more or less continuously, the amount in 24 hours varying from a pint to more than a quart. There are many chemical tests of liver function, each measuring a single process. Usually several are done at the same time, because one function can be depressed while others remain normal.

7. When the wave of blood forced out by the contraction of the ventricles passes
through the artery, it produces a distinct beat called the pulse. The pressure exerted by the blood on the walls of the arteries is termed blood pressure. It depends not only upon the force of heartbeat but also upon the elasticity of the walls of the capillaries. The volume of blood pumped out by one ventricle at a single beat varies from 70 cc at rest to 200 cc during exertion. The left ventricle sending blood throughout the whole body must pump with more force than the right ventricle sending blood only to the lungs.
8. There is enormous variation among cells in the body. Despite detailed differences, most human cells are basically similar in structure. Each cell is an invisibly small bag containing a fluid material called cytoplasm, surrounded by an outer skin called the cell membrane. Within the cytoplasm are the nucleus and various other specialized structures, known collectively as organelles. Formed from a double layer of fatty materials and proteins, the cell membrane holds the cell together. Its other function is to regulate the passage of materials into and out of the cell, thereby enabling useful substances to enter the cell and waste materials to leave it.

Тексты для контрольного перевода (к разделу 5)

1. The digestive system can be affected by microorganisms at one or more locations, causing great discomfort and threatening life itself if nutrient losses become severe. The signs and symptoms produced by offending microorganisms can be useful in diagnosing disease. Stool consistency, presence of blood in the stool, and temporal seguence of events following infection are indicative of certain infections. Toxins produced by microorganisms can irritate the stomach and intestines, causing vomiting, diarrhea, and resulting fluid loss and can interfere with normal digestive processes along the intestinal tract, causing malnutrition.
2. A heart taken out of the body can be kept alive and beating if it is perfused with
a solution containing the proper concentrations of various ions. A mere portion of the heart will beat if properly perfused. It was found, in this way, that different parts of the heart will beat at different rates. That part beating most rapidly, however, forces its rate upon the remainder of an intact heart, for each rise and fall of electric potential moves out along the heart muscle from that most rapidly beating portion and the rest of the heart must follow, having no opportunity to
set up potential fluctuations at its own rate. The most rapidly beating part of the
heart is therefore referred to as в pacemaker.
3. Hair is a long thread growing on the body of an animal, from a small pit in the skin called a follicle. The follicles are tubes leading into the skin and lined with
sebaceous glands which secrete the oil covering the hair. Hair on the head stops
growing in many men in middle age, giving various degrees of baldness. Hair production is a complex process involving cooperation between the dermis and epidermis. The epithelial layer involved is called the hair matrix. Basal cells near the center of the hair matrix divide, producing daughter cells that are gradually

pushed towards the surface. Those cells produced closest to the center of the matrix form the medulla, or core, of the hair, whereas cells closer to the edge of the developing hair form the relatively hard cortex.

4. Basal cell carcinoma is a malignancy of the dermis or of skin cells lining the hair follicles that often results from mutations caused by overexposure to the ultraviolet radiation in sunlight. Fair-skinned persons over 50 are the most commonly affected.
   Dark-skinned people are protected by the higher amounts of the ultraviolet radiation-absorbing pigment, melanin, in their skin. Tumor starts as a small, flat nodule and grows slowly, eventually breaking down at the center to form a shallow ulcer with raised edges. Unless treated, the growth gradually invades and bites deeper into surrounding tissues. Basal cell carcinoma is highly treatable but often recurs.
5. Asthma is a chronic disease in which periodic attacks are followed by periods of remission of the symptoms. Typically an attack of asthma is characterized by a coughing stage, followed by dyspnea and wheezing. Attacks vary greatly in severity
   and duration, they may range from a slight period of wheezing to a prolonged period of coughing accompanied by severe dyspnea. A cough producing sticky mucoid sputum is symptomatic. People afflicted with asthma tend to overuse the intercostal muscles in breathing, at the expense of the diaphragm. Asthmatic attacks may be induced by exercise. The condition is frequently referred to as
   exercise-induced asthma. Asthma is the most common and troubling respiratory
   disorder for children.
6. Teeth are hard conical structures set in the alveoli of the upper and lower jaws, used in mastication and assisting in articulation. A tooth is a dermal structure composed of dentin and encased in cementum. The exposed part of a tooth is the crown, the concealed part is the root. The crown has a thick covering of enamel
   which is the hardest substance in the human body. In the center is the pulp cavity filled with a connective tissue reticulum containing a jelly-like substance (dental pulp), nerves and blood and lymph vessels. Covering the root of the teeth and holding it in place in its socket, or alveolus, in the jaw is a fibrous connective
   tissue called the periodontium. Its many strong fibers are embedded in the
   cementum and also the wall of the tooth socket. The periodontium not only helps hold the tooth in place but also acts to cushion it against the pressure caused by
   biting and chewing.
7. Born to luxury but dissatisfied with a life of leisure, Florence Nightingale was endowed with the intelligence of a scientist and the emotional drive of a reformer. Desiring to help others, she came to focus her efforts on nursing care, studying hospital reports and books on public health, inspecting hospitals in England and other parts of Europe, and receiving some degree of nursing training in Germany. Convinced of the need for reforms in nursing she opened an institution for care of the sick in London in 1854. Accompanied by 38 carefully selected nurses Florence Nightingale undertook the nursing of soldiers in the Crimea. She
   demonstrated that skilled nursing care and improvements in sanitation in the military hospital markedly reduced the mortality rates among British soldiers wounded in the Crimean War. The fame of that achievement spread throughout the civilized world.

8. Known in Europe by his Latin name Avicenna, Ibn Sina (980— 1037) wrote some of the most renowned works of medicine and philosophy in the Arab world. Born in 980 near Bukhara Avicenna began his education early. When he reached the age of 18, he had completed the study of all the sciences. Moving from patron to patron, Avicenna wrote more than 100 books. Occupied during the day with his duties at court as physician, he spent almost every night with his students composing his works and carrying out scientific discussions related to them. Avicenna composed "Book of healing", a vast philosophical and scientific encyclopaedia, and the "Cannon of Medicine", a comprehensive work summarising the medical knowledge of the day. Translated into Latin around 1150, the "Cannon" became the medical authority for several centuries.

РАЗДЕЛ 6 Герундий (The Gerund)

6.1 Функции герундия

Упражнение 29

А. Найдите в предложениях герундий, который может выполнять функции подлежащего, дополнения или обстоятельства.

Б. Переведите предложения.

1. Studying a human skeleton can reveal important information such as race, medical history, weight, gender, body size, muscle mass, and age.
2. Listening to the heart is a simple and effective method of cardiac diagnosis.
3. Matching a donor and a recipient for a bone-marrow transplant is hard.
4. Merely having gallstones does not represent a problem as long as the stones remain small.
5. According to surveys being a doctor is the most highly respected of the professions.
6. In addition to being able to withstand stresses spongy bone is much more lighter than compact bone.
7. Besides being the largest gland in the body, the liver is perhaps the most versa tile. Scientists have identified over 500 functions of the liver.
8. Some patients need a lot of looking after.
9. Treatment of allergies depends on correctly identifying the allergen to which the patient is sensitive.
10. The doctor advised against going to bed late.
11. The patient was given drugs to prevent the graft being rejected.
12. When the damaged tubules of the kidneys fail to achieve the elimination of fluid, it, instead of being excreted, collects in the tissues and causes swelling of various parts of the body.
13. Bacteria are stained before being examined under the microscope.
14. Her illness resulted in her being away from work for several weeks.
15. The abdomen proper differs from the other great cavities in the body being bounded for the most part by muscles and fasciae.
16. By providing a calcium reserve, the skeleton plays the primary role in the homeostatic maintenance of normal calcium ion concentration in the body fluids.
17. Infectious hepatitis and serum hepatitis are caused by different viruses (called A and B) and having had one does not give immunity against an attack of the other.
18. The coccyx, so called from having been compared to a cuckoo's beak, is usually formed of four small segments of bone, and is the most rudimentary part of the vertebral column.

6.2 Функции "ing-forms"

Упражнение 30 (обзорное)

А. Проанализируйте структуру каждого предложения и определите его ядро. Определите, какие функции выполняют в предложениях так называемые "ing-forms".

Б. Переведите предложения.

1. From a chemical point of view, a cell is a special collection of molecules, that has the ability to reproduce itself from the molecules in its surroundings.
2. A cell is enclosed by the plasma membrane, which forms a selective barrier allowing nutrients to enter and waste products to leave.
3. The nucleus is one of the very greatest importance to the cell's life and the very centre of its being. It exerts its influence by regulating the amount and types of protein made in the cell.
4. The most striking characteristics of protoplasm are its vital properties of motion and nutrition.
5. Maintaining internal organization requires a continual input of energy into the cell.
6. Being small allows microorganisms high metabolic rates because the surface to volume ratio increases as the size of cell decreases.
7. When a cell is going to divide, the DNA molecules reproduce themselves by doubling and splitting lengthwise.
8. The dividing cells begin to differentiate and become muscle cells, skin cells, nerve cells and so on. Understanding differentiation is one of the most challenging problems facing scientists.
9. Following division, each cell goes through a typical series of internal changes, including growth, before it divides again.
10. The cytoplasm is divided, producing two identical daughter cells.
11. In mitosis chromosomes become shorter and the nuclear envelope breaks, releasing the chromosomes, which duplicate.
12. Embryonic cell division is characterized not only by an increasing but also by the origin of differentiated cells.
13. Staining a cell kills it, and in examining a stained cell we are examining a corpse in which all activity has come to an end.
14. Our DNA contains more than 80,000 genes that control all the working of our bodies.
15. Enzymes are chemicals produced by living cells which have the power of altering the rate of chemical reactions occuring in the body.
16. Donated cells can attack the patient's body, causing life-threatening graft-versus-host disease.

17. Our understanding of genetic structure is opening the possibility of diagnosing and correcting some of those problems.
18. Identifying the individual cell components which carry the hereditary "deter miners" and discovering the laws underlying their transmission from generation
to generation was one of the major tasks in cytology.

РАЗДЕЛ 7 Инфинитив (The Infinitive)

7.1 Инфинитив в функции подлежащего, именной части сказуемого и дополнения.

Упражнение 31

А. Найдите в предложениях инфинитив, который может выполнять функции подлежащего, дополнения или именной части сказуемого.

Б. Переведите предложения.

1. Many viruses begin to invade cells and multiply near their site of entry.
2. Cartilage is a tough yet flexible tissue which has to resist stresses and strains.
3. The primary function of the central nervous system is to regulate the functi oning of the organism.
4. To describe the action of nerve as integrative is, although true, hardly sufficient
for a definition.
5. Another way in which a catalyst may work is to supply a surface on which a certain reaction can take place very easily.
6. Scientists have been trying to perfect drugs capable of repairing the damage due to the disease.
7. Shortage of water in the body begins to cause obvious changes when the water is reduced by about 10 per cent.
8. The aim of the publication is to present up-to-date views on the fundamental concepts which dominate modern biology.
9. Lung tissue is elastic and in life is in a stretched state, so its normal tendency is
to contract.
10. New solutions to this problem are beginning to appear.
11. The specific function of the nephron is to remove from the blood plasma certain end products of metabolism.
12. Preventive medicine aims to educate people about how diet, exercise, smoking, or drugs can affect their health.

7.2 Сложное подлежащее

Упражнение 32

А. Найдите в предложениях конструкцию "Сложное подлежащее". Она состоит из двух частей:
1) существительного в общем падеже или местоимения в именительном падеже,
2) инфинитива в активной или пассивной форме.

Между двумя частями сложного подлежащего находится сказуемое предложения, которое может быть выражено, например, глаголами физического и умственного восприятия в страдательном залоге.

Пример: Viruses *are knownto* cause certain diseases.	
(1-ая часть (сказуем.) сложного подлежащего)	(2-ая часть сложного подлежащего)

Б. На русский язык такие предложения переводятся, начиная со сказуемого, неопределённо-личными предложениями или вводными словами, при этом 1-я часть сложного подлежащего становится подлежащим, а инфинитив (2-я часть) - сказуемым русского предложения.

Например:

Viruses are known to cause certain diseases.

Известно, что вирусы вызывают определённые заболевания.

или

Вирусы, как известно, вызывают определённые заболевания.

В. Переведите предложения.

1. Diabetes is known to have existed from very ancient times, it is found to have
affected the Egyptians some 3000 years ago.
2. Many degenerative disorders of aging, e.g. arthritis, are thought to be disorders of the immune system.
3. The high levels of sugar in the blood are thought to cause the eye and kidney damage.
4. The stomach is believed to be independent of the central nervous system.
5. The pituitary has been called the "master gland" because it is believed to be the
endocrinological center of the body.

6. Calcitonin is the hormone produced by the thyroid gland, which is believed to
regulate the level of calcium in the blood.
7. Vitamin D is not considered to affect parathyroid activity.
8. Formerly, blood platelets were not considered to be real cells but were believed
to be dead fragments of cytoplasm derived from certain cells of bone marrow.
9. Essentially, hemostasis can be considered to involve three mechanisms: agglutination of platelets, constriction of blood vessels and formation of the blood clot.
10. Children without spleens are said to develop less immunity to infection than they should.
11. Erythrocytes, when examined under the microscope, are seen to be circular disks, biconcave in profile.
12. More and more diseases are being found to be caused by smoking.
13. Many diseases have been shown to be caused by microorganisms.
14. Among the 21 mineral elements which have been reported to have been found in the human body there are at least 14 which are now recognized as doubtless
essential.

Упражнение 33

А. Найдите конструкцию "Причастие II + инфинитив" в функции определения и определяемое слово. Такая конструкция представляет собой сокращённый вариант придаточного определительного предложения со "Сложным подлежащим" и сказуемым в страдательном залоге, полный вариант которого выглядит следующим образом:

Пример:

Among the drugs known to trigger intestinal bleeding are aspirin and other salicylates. = Among the drugs which are known to trigger intestinal bleeding are aspirin and other salicylates.

Переводить такие конструкции следует как придаточные определительные предложения, содержащие "Сложное подлежащее".

Б. Переведите предложения, применяя правила перевода конструкции "Сложное подлежащее" (см. упр. 32).

1. Among the illnesses known to trigger internal bleeding are peptic ulcers, colon cancer, inflammatory bowel disease and intestinal parasites such as hook-worm.
2. In the 1960's Dr. Goldstein [,gDl(d)'stam] discovered and isolated a humoral factor, believed to be a hormone from the thymus, which he named thymosin.

3. The advent of antibiotics and the resultant development of resistant strains of
bacteria have introduced new types of pathogens little known or not previously thought to be significantly dangerous to man.
4. Once thought to be a rare disease, Reye's syndrome is now listed among the ten
major causes of death in children over one year of age.
5. Once thought to be a rare disorder, primary hyperparathyroidism now ranks with diabetes mellitus and thyroid disease as one of the most common endocrine disorders.
6. Once thought to be a rare form of localized bone disease, this disorder is now
diagnozed more frequently because of newer diagnostic techniques, such as bone scanning, and routine testing of plasma alkaline phosphatase.
7. It was discovered that certain vitamins thought to be simple were made up of many different components, for example, the vitamin-B complex.
8. The first fluid found to be effective for perfusion of a heart was devised by an
English physician, S. Ringer fringa], and is still known as "Ringer's solution".
9. Cholesterol is a fatty substance thought to be part of the cause of heart disease if there is too much of it.
10. The second of Bright's diseases is a hemorrhagic disease, believed to be caused by substances created by infections found elsewhere in the body.

Упражнение 34

А. Найдите конструкцию "Сложное подлежащее". Об ратите внимание, что сказуемые в предложениях выражены либо глаголом *to be* + прилагательное *(likely, sure, certain),* либо рядом глаголов в дей ствительном залоге: *seem, appear, prove, happen, turn out.*

Б. На русский язык такие предложения переводятся согласно правилу: т. е. сказуемое передаётся не-определённо-личным предложением или вводными словами, существительное становится подле-жащим, а инфинитив - сказуемым русского пред-ложения.

Например:

In molecular biology much is likely to become clear within the next decade.

Весьма вероятно, что многое в молекулярной био-логии станет ясным в следующем десятилетии.

The appendix seems to have no function in humans.

По-видимому, аппендикс у человека не выполняет никакой функции.

В. Переведите предложения.

1. The response to a given dose of a drug is likely to vary when it is given to different persons.
2. Some twenty different amino acids occur in proteins and each protein molecule is likely to contain all of them arranged in a variety of sequences.
3. Persons with 0-blood are sometimes called universal donors since their red cells are unlikely to be agglutinated by the blood of any other groups.
4. Joints that move freely and easily are less likely to become injured than joints
that cannot move through a full range of motion.
5. Because most mutations occur during DNA replication, they are most likely to involve cells that are undergoing cell division.
6. The amoeba appears to be the simplest possible living animal, an independent
cell with nucleus and cytoplasm but no permanent organelles.
7. In plants there does not appear to be antibody production, however, there is native immunity to disease.
8. Ancient writers such as Galen ['geilan] (A.D. 130 — 200) recognized three principal organs — the heart, the brain, and the liver — and often the liver seemed to be the most important.
9. Children who for one reason or another happen to endure a shortage of vitamin D have bones that do not properly ossify.
10. Vitamin D was formerly thought to stimulate the actual formation of bone, but it now appears to act only indirectly, by increasing the absorption of calcium from the food into the blood.

7.3 Сложное дополнение

Упражнение 35

А. Найдите в предложениях конструкцию "Сложное дополнение", которая состоит из существительного в общем падеже (или местоимения в объектном падеже) и инфинитива с частицей *to* или без неё.

Пример:

Some scientists consider bacteria to be plants.

подлежащее сказуемое сложное дополнение

Б. На русский язык такая конструкция переводится придаточным дополнительным предложением с союзами: *"что", "чтобы", "как".*

Например:

Some scientists consider bacteria to be plants.

Некоторые учёные считают, что бактерии являются растениями.

В. Переведите предложения.

1. Many investigators have considered the allergic response to be brought about by an acquired sensitivity only to proteins.
2. We know hypofunction of the adrenals to cause a severe disease.
3. Close examination of the compact tissue shows it to be extremely porous.
4. Studies have shown massage to have positive effects on conditions from colic to hyperactivity to diabetes to migraines.
5. A lack of insulin caused by diabetes mellitus makes the level of glucose in the blood rise.
6. Most people have experienced how feeling nervous can make the hands and legs tremble and the hearts beat faster.
7. The primary separation of blood cells using a centrifuge allows red blood cells,
   blood platelets and granulocytes to be separated from each other.
8. Toxicity tests indicate the product to be completely harmless.
9. An insufficient supply of vitamin D in the body causes a person's bones to soften.
10. Insulin causes the glucose to be used for energy release or stored as glycogen in the liver.
11. Enzymes are produced by living cells and cause particular chemical reactions to happen while not being changed themselves.
12. The presence of food, especially fats, in the duodenum and hormonal influences cause the gallbladder to contract, releasing bile to the common duct.

13. The abscess breaks through the skin, allowing the pus to drain.
14. In response to an increase in the hydrogen ion concentration in body fluids, the respiratory rate increases, causing more dioxide to be released from the lungs.
15. The French philosopher Descartes [deikd:t] (1596—1650) believed the pineal
gland to be "the seat of the soul" but we now know it to be an endocrine gland that has extensive influences on the body.
16. A nerve impulse travels as a wave of excitation down the nerve fiber and is transmitted to the muscle, spreading over the fibers and causing them to con tract.
17. Periodontitis is the inflammatory condition, which affects 10 per cent of the world's population, destroys bone and connective tissue in the jaw, causing teeth to fall out.
18. Sunlight can cause more melanin (the main pigment of the skin) to be produced, which results in the skin changing color.
19. Remote controls used during robotic coronary bypass surgery require the surgeon to sit a few feet from the patient. A monitor allows the other members of the surgical team to watch how the operation is proceeding.
20. A chemical imbalance in a heart muscle can cause the heart to cease pumping
blood, which in turn will cause other tissues and organs to cease functioning.
21. Enzymes work by binding molecules so that they are held in a particular geometric configuration that allows the reaction to occur.
22. In the past, to bleed someone was to make them lose blood, as a cure for an illness.

7.4 Инфинитив-обстоятельство цели

Упражнение 36

А. Найдите в предложениях инфинитив в функции обстоятельства цели. Такое обстоятельство может стоять до или после ядра предложения (иногда перед инфинитивом может использоваться выражение *in order to).*

Примеры:

1. Cells need oxygen to survive.
2. The heart needs oxygen in order to function.
3. To live and to do its work a cell needs oxygen.
4. In order to carry on their metabolic activities all body cells need oxygen.

Б. Независимо от наличия или отсутствия словосочетания *in order to* в английском предложении, на русский язык инфинитив в функции обстоятельства цели всегда переводится словами: *"для", "для того, чтобы", "чтобы".*

В. Переведите предложения.

1. The muscles transform chemical energy into mechanical energy to support and move the body.
2. From very early times surgeons have used drugs to lessen pain during operations.
3. To perform its vital functions, blood must be kept in motion.
4. To conserve heat the blood vessels of the skin contract, to lose heat they dilate.
5. In order to contract, skeletal muscle must be stimulated.
6. In order to grow, harden, and repair bones must have an adequate supply of minerals, especially calcium and phosphorus.
7. To keep the heart beating the sino-atrial node in the right atrium sends im pulses through the two atria, causing atrial systole.
8. In order to keep blood moving back towards the heart, veins have valves which prevent the back flow of blood and keep the blood moving in one direction.
9. The capillaries exchange the oxygen for waste matter, such as carbon dioxide, which is taken back to the lungs to be expelled.
10. A large volume of blood is carried by the portal vein from the stomach, intestine and spleen to the liver to be chemically processed before returning to the heart.
11. The oxygenated blood leaves the alveolar capillaries and returns to the heart to be discharged into the systemic circuit.
12. To be accepted by scientists, the results of any experiments designed to test the hypothesis must be repeatable and capable of being duplicated by others.

13. The end products of protein digestion, amino acids, pass into the blood, some to be used as structural proteins for the building of body tissue, others to be used as enzymes, and the rest to be carried to various parts of the body as a reserve.
14. In order to minimize rejection and improve the chances of survival of a trans planted organ, efforts are made to match as closely as possible the blood types and tissue types of the donor and recipient.
15. To stop food from going into the trachea and lungs, a flap of tissue called the epiglottis moves over the opening (the glottis) during swallowing.

Упражнение 37

А. Найдите инфинитив. Определите, в какой из двух функций он используется: как подлежащее или как обстоятельство цели. Для этого надо найти сказуемое и установить, с чем оно согласуется, то есть что является в предложении подлежащим.

Пример:

To produce a hormone rich in iodine is the chief function of the thyroid gland.

To produce an effect a drug must reach its target in adequate amounts.

Б. Переведите предложения.

1. To maintain the pH within normal range there are substances present in blood
that act as buffers.
2. To maintain normal acid-base balance is the main task of the kidneys.
3. To prevent backflow of blood, the heart is equipped with valves that permit the blood to flow in only one direction.
4. To develop a vaccine against any parasite is a long-term effort that can take 20 to 30 years.
5. To suture the wound properly is essential for healing the wound.
6. To stay alive all the cells in the body need continuing supplies of oxygen, energy and nutrient.
7. To make a diagnosis one must know the symptoms of the disease.
8. To determine the proportions of various chemical elements present in the hu man body is comparatively simple.
9. The Scanner examines the body in slices, 13 mm thick. To take a picture of a complete slice takes only 20 seconds.
10. To prevent infection Lister ['hsta] (1827 — 1912) invented methods of using anticeptics during surgical operations.

7.5 Инфинитив-определение

Упражнение 38

А. Найдите инфинитив в функции определения, кото рое всегда стоит после определяемого существи тельного.

Б. На русский язык такое определение переводится либо причастным оборотом, либо придаточным определительным предложением.

Например: The salts to form stones are always present in the urine.

Соли, образующие камни. ...

или

Соли, которые образуют камни. ...

В. Переведите предложения.

1. The heart is the first organ to develop in the embryo.
2. The clavicle is the first bone of the skeleton to begin ossifying.
3. The first brain cells to die are those in the cerebral cortex.
4. The easiest tissue to transplant is blood.
5. Insulin is the only hormone to lower blood glucose level directly.
6. Scientists have developed many vaccines to use in the prevention of serious diseases.
7. Bacteria are thought to represent the first organisms to have arisen on earth from which all other organisms are descended.
8. Artificial respiration is a technique to provide air to an individual whose respiratory muscles are no longer functioning.
9. There is evidence to suggest that some foods can relieve or worsen the symptoms of existing arthritis for some people.
10. Ageing is another factor to consider in the development of a malignancy.
11. In diabetes an improper supply of insulin to act upon carbohydrates permits an excessive accumulation of sugar in the blood.

Упражнение 39

А. Найдите инфинитив в пассивной форме *(to be* + V_3), выполняющий в предложении функцию опре деления.

Б. На русский язык пассивный инфинитив, как правило, передаётся придаточным определительным предложением с оттенком долженствования или отнесённости к будущему.

Например:

the solution to be used
раствор, который должен быть использован или
раствор, который будет использован

В. Переведите предложения.

1. The method of treatment to be selected defends on the disease.
2. The liver absorbs the substances to be removed from the blood, alters their chemical structure, makes them soluble, and excretes them in the bile.
3. The person to be immunized is usually inoculated with vaccine by intradermal subcutaneous or intramuscular injections at regular specified intervals.
4. Though chest pain is commonly taken as a sign of heart disease, there are many
other causes to be considered.
5. The amount of carbon dioxide to be removed increases as cell activity increases, e.g. during hard physical exercise.
6. An important anatomical fact to be noted in connection with the liver is its double blood supply in which the organ is unique.
7. The special characteristics of renal blood flow to be kept in mind when conside ring vascular diseases are that the renal arterial system is made up of end arteries.
8. The size of the heart is determined by the amount of work to be performed by it
and it is at least as big as the clenched fist of its possessor.
9. The major problem to be overcome in transplantation therapy is the immune rejection phenomenon.
10. Another difficulty to be expected with these drugs is postural hypotension.
11. The selection of one or more antibiotics to be given as aerosol therapy is determined
by the patient's specific condition and the preference of the attending physician.
12. The amount of time and degree of temperature necessary for sterilization depend on the articles to be sterilized.
13. Dangerous, powerful, or habit-forming medicines to be used under a physician's supervision can be sold only by prescription.
14. At the beginning of the 20th century the first problem to be tackled was shock, which was found to be due to a decrease in the effective volume of the circulation.
15. There are probably many useful medicinal plants still to be found. This one good reason for the conservation of plants, particularly in tropical forests.

Упражнение 40

А. Используя фрагменты из трёх частей таблицы (I - подлежащее, II - сказуемое, III - инфинитивный оборот в функции определения), составьте предложения о роли известных учёных в истории медицины.

Б. Переведите предложения.

I	II	III
1. Aristotle ['aeras,tɔtl] (384-322 B.C.)	was the first	a) to lay foundation of microbiology.
2. Auenbrugger ['aua'bruga] (1722-1809)		b) to describe the signs of inflammation,
3. Harvey ['ha:vi:] (1578—1657)		c) to discover X-rays.
4. Fleming ['flemin] (1881-1955)		d) to discover blood circulation.
5. Freud [froid] (1856-1939)		e) to discover penicillin.
6. Celsus ['seises] (1st century A.D.)		f) to invent the scientific method.
7. Jenner ['djena] (1749-1823)		g) to invent vaccination.
8. Pasteur [pa:s'ta:] (1822-1895)		h) to use antiseptics.
9. Lister [lista] (1827-1912)		i) to found the analytical school of psychiatry.
10. Roentgen ['rentgan] (1845-1923)		j) to use percussion of the chest as a method of diagnosis.

7.6 Функции инфинитива

Упражнение 41

А. Проанализируйте структуру каждого предложения и определите его ядро.

Б. Найдите инфинитив и определите его функцию в предложении.

В. Переведите предложения.

1. To avoid unpleasant reactions some vaccines have to be given in two or three doses.
2. Gelatin is used to make capsules in which to put medicine.
3. Mechanisms to prevent bleeding are essential to maintain the closed blood circulatory system.
4. The volume of blood to be pumped from a ventricle with each beat may vary greatly.
5. To work out the cause of a given case of anaemia is often a difficult problem.
6. Many attempts have been made to dissolve gall stones by medical treatment to avoid an operation.
7. Food is broken down by physical and chemical means into forms in which it can pass through the walls of the alimentary canal into the blood to be transported around the body.
8. The early Greeks were the first Western men to speculate on the origin of the universe and of the earth and its inhabitants.
9. Insulin injections are regularly used to treat diabetes mellitus, but care has to be taken not to exceed the dose as this will cause hyperinsulinism.
10. To guard against rapid depletion of the short-lived neutrophils, the bone marrow holds a large number of them in reserve to be mobilized in response to inflammation or infection.
11. The recognition of Rh factor and its importance in haemolytic anaemia of the newborn was an important development, chiefly because to be forewarned is to be forearmed.
12. The anesthesiologist selects the drugs to be used, decides how they are to be administered and constantly monitors the patient condition during the operation.
13. Vitamin B_{12} deficiency is nearly always due to failure to absorb the vitamin. To be absorbed it has first to be combined with intrinsic factor, a protein formed in the stomach.
14. Paracelsus [ˌpaera'selsas] (1493 — 1591) seems to have been the first physician to recognize a trade as the cause of a disease.
15. Lack of sufficient calcium causes the nervous system to become more and more excitable, and the nerve fibers begin to fire spontaneously.
16. Although hundreds of chemicals have been reported to produce cancers in experi mental animals, only about two dozen have been verified as causes of cancer in man.

17. In order to contract when it is stimulated, a muscle fibre must have an adequate
supply of blood to provide sufficient oxygen and nutritional materials and to remove waste products.
18. Fluorine does not seem to be a necessary element for metabolism, but the presence of a small quantity of fluorine in the body during the period of life when the teeth
are being formed subsequently protects against carious teeth.

Тексты для тренировочного перевода (к разделу 7)

1. The early physicians who used remedies taken from plants to treat their patients
were probably the first people to study plants with care and keep a record of their observations. These physicians had to tell poisonous, medicinal, and useless plants from each other in order to treat their patients.
2. Early records indicate that illness was generally thought to be caused by unseen
demons or evil spirits that entered the body where it was most vulnerable. Today, in much the same fashion, disease is said to be caused by creatures invisible to the naked eye that enter the body.
3. In ancient Greece surgeons were recognized as subordinate medical practitioners. Physicians were believed to be men of learning, employing their intellect to
diagnose the causes of diseases. Surgeons by contrast used their hands, not their heads, and the fact that their work involved the shedding of blood allowed them
to be linkened disdainfully to butchers.
4. To remove the disease germs and the undesired sediments water which comes
from lakes or rivers or even from some wells must be purified for human use. Enough chlorine is put into the water to kill any disease germs present but not
enough to injure people or animals. Sometimes both filtration and chlorination are used to assure a supply of pure water.
5. Strong emotions like anger cause physical changes to take place in the body. The heart beats faster, the stomach tightens, and a person may perspire. If you do not do something to deal with the emotions, the body does not relax. It stays in this state of tension. Over a period of time fatigue can set in and physical illness may even develop. It is unhealthy to keep feelings inside, for you put an additional strain on your body.
6. Cigarette smoke has been shown to contain numerous compounds that are known to cause cancer in experimental animals and that appear to be strongly linked to
human cancer. Cigarette smoke also has been shown to contain a number of cocarcinogens, substances that appear to enhance the effect of carcinogens when they are administered concomitantly. Smoking has been proven by scientific research to be detrimental, or harmful, to health.

7. To survive, an organism must be capable of responding to changes in the environ ment. To respond quickly and appropriately, its parts must be in communication with the outside world and with one another. This is true of small unicellular organisms and of large multicellular ones. A large multicellular organism, with its low ratio of surface area to volume, requires a special system to transmit information inward and to effect coordinated responses to the information. The nervous system fills this need.
8. A patient about to undergo surgery is instructed not to eat or drink anything for several hours prior to the operation in order to make it easier for the surgeon to operate and to avoid complications from the anesthetic. A patient is often given an enema just before the operation to void the colon of waste material. Sometimes a urinary catheter is used to drain the bladder. The area to be operated on is shaved and scrubbed with soap, and an antiseptic is applied to avoid infection.
9. Efforts to understand the metabolic and dietary factors that lead to osteoporosis, or loss of skeletal mass with aging, emphasize the importance of calcium bioavailability. Calcium in food exists mainly as complexes with other factors
from which the calcium must be released to be absorbed. Plant constituents of
the diet, in particular, may reduce calcium bioavailability so that people who do not use dairy products are less likely to obtain adequate amounts of calcium.
10. There are hundreds of different alternative therapies used by millions of people worldwide to treat every ill imaginable. People are turning to alternative therapies because virtually every drug has been shown to have some side effects and many patients have become dissatisfied with the inability of conven tional treatments to cure certain conditions — particularly chronic diseases such as arthritis. The common feature that seems to run through every one of the alternative treatments is the importance placed on the whole person, not just on specific symptoms — this is known as the holistic approach.
11. Each day, about 0.8 per cent of the body's red blood cells wears out and is
destroyed. If the body fails to replace these cells at the same rate, anaemia results. It is considered to exist if hemoglobin levels are below 13 grams per 100 ml in males and below 12 grams per 100 ml in adult nonpregnant woman. If the blood is examined under a microscope the red cells are seen to be paler and smaller than normal. Anaemia is not a disease itself, but a condition caused by a variety of diseases and disorders. In many cases the anaemia is found to be due to a combination of two or more causes.
12. Lavoisier was a brilliant chemist and the first to show the significance of the respiratory process in relation to food. He made the first quantitative measurements of the metabolism of man and his studies were the first to show that respira tion was a process of the slow combustion of carbon and hydrogen within the body — oxygen being consumed to support the combustion and carbon dioxide being produced as a result. It took over a hundred years with further advances in the sciences of chemistry, physics, and physiology before nutrition as such was recognized as a new science.

Тексты для контрольного перевода (к разделу 7)

1. The movement of molecules or ions from a region of higher concentration to a region of lower concentration is called diffusion. Molecules that are moving from
a region of higher concentration to a region of lower concentration are said to be moving along a diffusion gradient, while molecules going in the opposite direction are said to be going against a diffusion gradient. When the molecules, through their random movement in all directions, have become distributed throughout the space available, they are considered to be in a state of equilibrium. The rate of diffusion depends on several factors, including temperature and the density of the medium through which it is taking place.
2. A muscular fibre may be said to consist of a soft contractile substance enclosed in
a tubular sheath, named sarcolemma. Upon examination of a voluntary muscular fibre by transmitted light, it is found to be apparently marked by alternate light and dark bands, which are nearly of equal breadth. If the surface is carefully focussed, rows of granules will be detected at the point of junction of the dark
and light bands. By treating the specimen with certain reagents fine lines may be seen running transversely between the granules uniting them together. This appearance is believed to be due to a reticulum or network of interstitial substance lying between the contractile portions of the muscle.
3. Emphysema is a condition in which the lining of the air sacs in the lung loses its elasticity and is unable to expand, which means that the lungs cannot provide enough oxygen to the body. The person most likely to develop emphysema is a man older than 45 who is a heavy smoker, but this gender difference is likely to
disappear as more women continue to smoke for longer periods of time. In experiments with laboratory animals, ozone and nitrous oxide — chemicals that
occur in the grey-blue exhaust from motor vehicles and are present in polluted air — have been shown to cause changes in lung tissue similar to those seen in people with emphysema. Not surprisingly, emphysema is more common in large cities and highly industrialized areas.
4. When scientists first examined the human brain, they found it to be divided into
two halves, or hemispheres, which are nearly identical in appearance, mirroring
each other just as the two sides of the body do. It was found that the two sides of the brain have different functions. Many investigators have studied the differences between the functions of the two hemispheres and found their relationship to be
quite complex. The left brain is supposed to be logical, rational, analytical, whereas the right brain is supposed to be creative and emotional. Interestingly, the fibres which join the two halves of the brain have been found to be larger in women than in men. Nerve cells in the brain use electrical signals, but in addition they communicate chemically with neurotransmitters. No one knows how many neurotransmitters there are, but extensive efforts to identify the chemicals and map the neurons producing them are currently under way. The first agents to be
identified as neurotransmitters were all small molecules, single amino acids or their derivations or such simple compounds as acetylcholine.

ЧАСТЬ 3 Синтаксис (Syntax)

ВИДЫ СЛОЖНЫХ ПРЕДЛОЖЕНИЙ

Виды предложений			**Способ присоединения**
А. Сложно-сочинённые			а) союзы: and, but, or б) бессоюзно
Б. Сложно-подчинённые	1)придаточные предложения подлежащие		а) союзы: that, if, whether б) союзные слова: how, what, why
	2) придаточные предложения сказуемые		а) союзы: that, if, whether б) союзные слова: how, what, why
	3) придаточные предложения дополнения		а) союзы: that, if, whether б) союзные слова: how, what, why в) бессоюзно
	4) придаточные предложения определения		а) союзы: that, which б) союзные слова: who, whose в) бессоюзно
	5) придаточные предложения обстоятель-ства	а) времени б) причины в) условия г) уступительные д) соотносительные (двойное сравнение)	союзы: after, as, before, once, until, when, while союзы: as, because, for, since союзы: if, unless союзы: although, though, while конструкция the ... the

РАЗДЕЛ 8 Сложно-сочинённые предложения

Упражнение 42

А. Проанализируйте предложения, укажите в них количество ядер и способ соединения простых предложений в сложно-сочинённые (сочинительный союз или бессоюзно).

Б. Переведите предложения.

1. The matrix of elastic cartilage contains a dense network of fine elastic fibers; this
makes it more flexible than the hyaline type.
2. After absorption, glucose can be used immediately by the cells for energy or it may be stored in the liver as glycogen.
3. Some skin wounds, such as burns, involve large areas of the body surface, and the normal self-healing properties of the skin are unable to repair such extensive damage.
4. Normally, the volume, pressure, and composition of the cerebrospinal fluid remain constant, but in many diseases of the nervous system some of these factors are altered.
5. The organ of hearing is the spiral organ of Corti, and it is contained within the cochlea.
6. Mast cells are present in large numbers throughout the connective tissue in the body, and they secrete heparin into the body fluids.
7. All body cells must be constantly supplied with oxygen and nutrients, and the
circulatory system is responsible for performing this task.
8. The heart is supplied by the autonomic nervous system, but these nerves serve to alter the heart rate and are not responsible for the heartbeat itself.
9. Stimulation of the expiratory center causes inhibition of the inspiratory center
and passive expiration occurs.
10. In general, starches and sugars must be broken down to simple compounds called monosaccharides; proteins must be broken down to their simplest elements, amino acids; and fats must be broken down to fatty acids and glycerol.
11. Chronic nephritis may follow a case of acute nephritis immediately or it may develop after a long interval.
12. Most of the body's metabolic processes produce acids as their end products, but
a somewhat alkaline body fluid is required as a medium for vital cellular activities.

РАЗДЕЛ 9 Сложно-подчинённые предложения

9.1 Придаточные предложения подлежащие

Упражнение 43

А. Проанализируйте структуру сложно-подчинённых предложений с придаточными подлежащими. Опираясь на схему, приведённую ниже, найдите ядро в главном и придаточном предложениях, Сказуемое в главном предложении согласуется с подлежащим, выраженным придаточным предложением. Иногда подлежащим придаточного предложения может являться союзное слово.

Сложно-подчинённое предложение

Б. Переведите предложения.

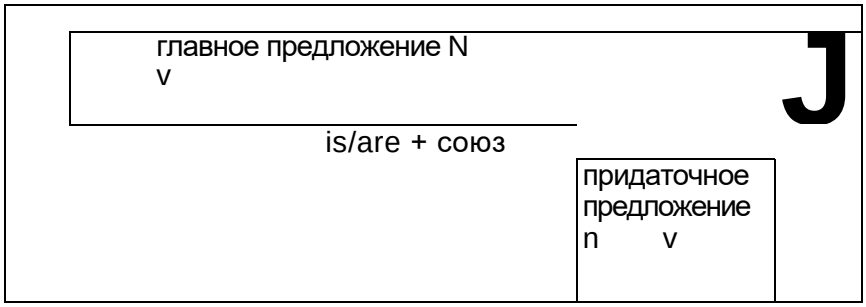
1. What causes the cells to stick together is the puzzle in the theory of thrombosis.
2. What cannot be absorbed into the blood is passed out through the large intestine as feces.
3. How cancer develops is no longer a mystery. Investigators have made astonishing progress in identifying the deepest bases of the process — those at the molecular level.
4. Exactly how pain is perceived is still a puzzle.
5. How long animals sleep is very variable.
6. Despite the extensive research that has been carried out into diabetes, exactly why the body fails to produce enough insulin remains a mystery.
7. To what extent continuous treatment with anticoagulant prevents further attacks
in people who have recovered from a thrombosis is still in doubt.
8. That the human nose projects does not mean that it is important but that the upper jaw has receded in the course of evolution.
9. That the parathyroid glands are endocrine organs has been shown by the work of Hanson and Collip, who have isolated the parathyroid hormone from the gland.
10. Whether hepatitis C is sexually transmitted is controversial.
11. That increase of normal skin activity may follow on exposure to suitable temperatures is shown by the redness and sweating experienced on a summer day.

9.2 Придаточные предложения сказуемые

Упражнение 44

А. Проанализируйте структуру сложно-подчинённых предложений с придаточными сказуемыми. Опираясь на схему, приведённую ниже, найдите ядро в главном и придаточном предложениях: сказуемое главного предложения состоит из глагола-связки *to be* и придаточного предложения.

Сложно-подчинённое предложение



Б. Переведите предложения.

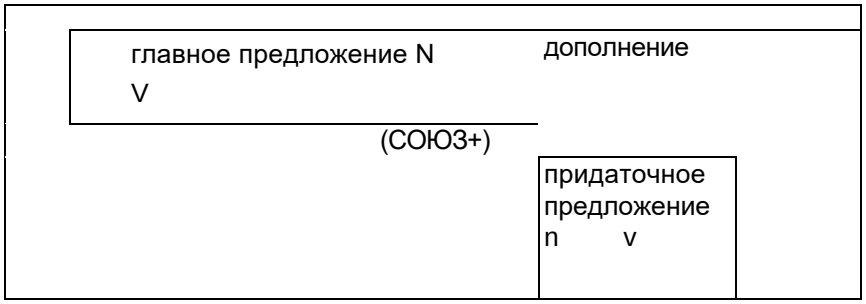
1. The most plausible explanation of this phenomenon is that there is continuous
very high activity in the brain.
2. The strengths of the book are that it is well written, very readable, and with clear tables and pictures.
3. The trouble with many of the drugs used to fight viruses and cancer is that they are extremely toxic and so can damage healthy tissue.
4. The reason for wide contact of cancer research with fundamental science is that cancer and its related conditions are actually results of the process of growth of living tissues.
5. The real value of the white blood cells is that most of them are transported to areas of serious inflammation, thereby providing a rapid and potent defence against any infectious agent.
6. The chief factor in the stability of the foot is how well the bones involved fit into each other.
7. The main problem with transplants is that the body of the patient who receives the organ tries to reject it.
8. The really puzzling question in immunology is how the immune system can distinguish "self" from "non-self".

9.3 Придаточные дополнительные предложения

Упражнение 45

А. Проанализируйте структуру сложно-подчинённых предложений с придаточными дополнительными. Опираясь на схему, приведённую ниже, найдите ядро в главном и придаточном предложениях.

Сложно-подчинённое предложение



Б. Переведите предложения.

1. Many experts agree that sleeping pills do not help and may add dependence and addiction to the problems of insomnia.
2. Doctors say that women are far more likely than man to experience sleep dis turbances of all kinds.
3. Experts can't decide if caffeine is truly addictive or not.
4. Many studies indicate that excessive cholesterol levels in the blood can clog arteries and predispose to heart attacks and strokes.
5. Bright [brait] (1789— 1858), a distinguished English physician, demonstrated that the presence of albumin in the urine indicated kidney disease.
6. In 1885, Pasteur [pa:s'te:] announced to the French Academy of Sciences that he had developed a vaccine for prevention of rabies.
7. The consistency of food in the mouth determines whether the glands secrete a
copious watery saliva for dry material or a scanty saliva for moist food.
8. Evidence shows that the activities of the various tissues of the body are controlled not merely by the action of the nervous system but also by certain chemical substances elaborated by endocrine glands.
9. Medical research has shown that a diet low in saturated fats and high in fibre contributes to good health and can reduce the risk of certain serious illnesses,
such as cardiovascular disease.
10. The pumping action of the heart refers to how hard the heart pumps the blood, how much blood it pumps, how efficiently it does the job.
11. Allergic symptoms depend entirely on where in the body the immune system is provoked.

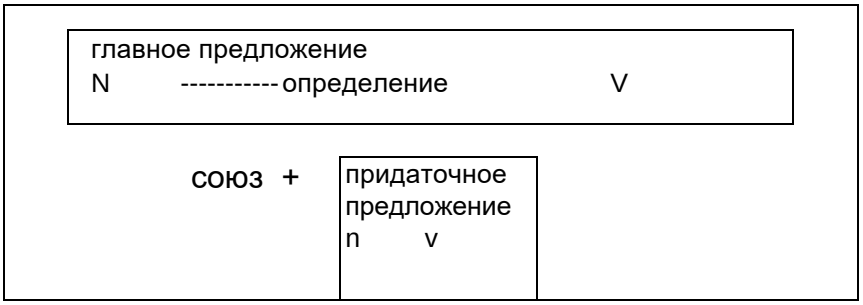
12. Since the discovery of the structure of DNA (1953) work on nucleic acids has
explained how genes determine all life processes by directing the synthesis of all cell proteins.
13. Oncologists recognize that environmental, hereditary, and biological factors play an important role in the development of cancer.
14. Darwin's theory describes how different species of animals and plants have changed
over hundreds of thousands of years.
15. The pumping action of the heart refers to how hard the heart pumps the blood, how much blood it pumps, how efficiently it does the job.

9.4 Придаточные определительные предложения

Упражнение 46

А. Проанализируйте структуру сложно-подчинённых предложений с придаточными определительными. Опираясь на схему, приведённую ниже, найдите ядро в главном и придаточном предложениях и укажите определяемое слово, к которому относится придаточное предложение (определяемое слово в главном предложении может употребляться в функции: подлежащего, именной части сказуемого, дополнения, обстоятельства).

Сложно-подчинённое предложение



Б. Переведите предложения.

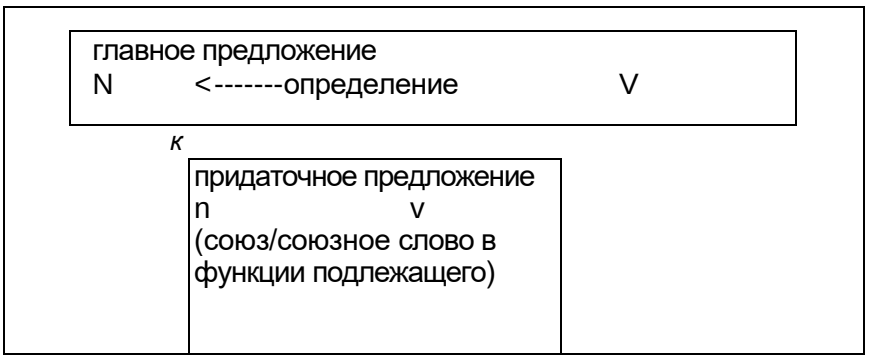
1. Bones form the framework upon which the rest of the body is built up.
2. A lung is one of a pair of organs in the chest of vertebrate animals by which they breathe.
3. Erythrocytes have a life span of 3-4 weeks after which they are broken down in the spleen and bone marrow.
4. The velocity at which the blood flows varies in different parts of its course.
5. Alimentary canal is the passage along which the food passes, in which it is digested, and from which it is absorbed by lymphatics and blood vessels into the circulation.

6. Many cases of severe acidosis can be prevented by careful monitoring of patients whose primary illness predisposes them to respiratory problems or metabolic derangements.
7. The central nervous system is the means by which our various bodily activities are co-ordinated and by which we respond to changes in our environment.
8. Vegetarian diet is one in which no meat is eaten.
9. The vertebrae support the body and provide the protective bony corridor through which the spinal cord passes.
10. The rate at which many glands produce hormones is influenced by other hormones especially those secreted by the pituitary gland and hypothalamus.
11. The most interesting features of Japanese medicine are the extent to which it was derivative and the rapidity with which it became westernized and scientific.
12. Jaundice may be caused by the production of bile pigment in excess of the amount which the liver can excrete, or may result from liver damage.

Упражнение 47

А. Проанализируйте структуру сложно-подчинённых предложений с придаточными определительными. Опираясь на схему, приведённую ниже, найдите ядро в главном и придаточном предложениях и укажите определяемое слово. Особенностью таких предложений является то, что союз, присоединяющий придаточное предложение к главному, является подлежащим придаточного предложения.

Сложно-подчинённое предложение



Б. Переведите предложения.

1. Any particle that enters the eye may carry germs that can produce an infection leading to blindness.
2. Practically all of the numerous and complex biochemical reactions that take place in animals, plants, and microorganisms are regulated by enzyme.
3. The human body is made up of millions of cells that require nutrients and energy, and which grow, multiply, and die.

4. Plasma is often used to give transfusions to persons who have lost a large quantity of blood from severe hemorrhage in order to restore blood volume quickly.
5. On its way through the nasal passages, the cold air from outside is preheated by
a large supply of blood, which gives off warmth through the thin mucous membranes that line the respiratory tract.
6. Platelets are disklike structures that develop from cells produced in the marrow. They release substances that start the process of blood clotting.
7. Bile's digestive properties result from bile salts, which are manufactured by the liver from a fatty substance called cholesterol. Bile salts break up globes of fat into tiny particles that digestive enzymes in the small intestine can attack.
8. Nutrition may be defined as a science which deals with the food materials which the living organisms take in and the processes through which these materials maintain life and sustain all the activities of the organism.
9. The factors that are of the greatest importance in determining the amount of
sweat which is produced are the level of the external temperature and the amount of muscular activity that is taking place in the body.
10. The many important discoveries in human anatomy and physiology, infectious and other diseases, drugs, and the therapeutic procedures that took place during the 19th and 20th centuries have had a direct bearing on the important developments that occured in the field of public health.

Упражнение 48

А. Проанализируйте структуру сложно-подчинённых предложений. Найдите ядро в главном и придаточном предложениях, а также определяемое слово в главном предложении, к которому придаточное определительное присоединяется бессоюзно.

Б. Переведите предложения.

1. The tar in cigarette smoke can produce cancer in any tissues it comes in contact
with, such as the mouth, the throat and the lungs.
2. Changes in the amount of a hormone secreted result in stimulation or depression of activity in the organs and tissues they affect.
3. A fetus obtains the water, organic nutrients, and electrolytes it needs from the
maternal circulation.
4. Many muscles are attached to the bones they move by a narrow strip of dense connective tissue called a tendon.
5. Blood returning to the heart is pumped by the right side of the heart into the lungs, where the carbon dioxide it has collected in the body is exchanged for oxygen.
6. The pituitary gland is the most important gland in the body because the hormones
it secretes control the functioning of the other glands.
7. The size of the stomach varies with the amount of food it contains.

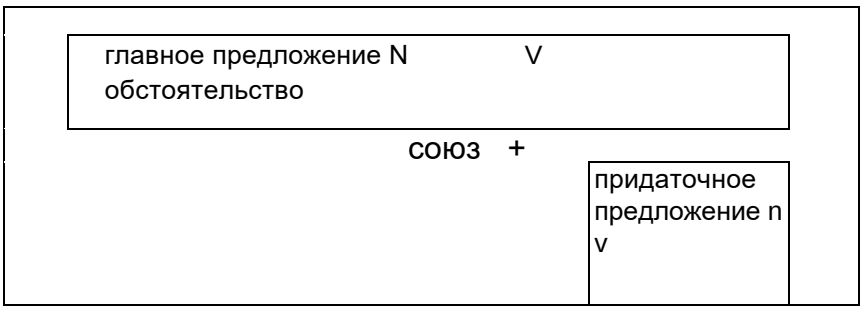
8. When an artery is completely blocked, the tissues it supplies rapidly undergo degeneration and die.
9. One of the most important tools scientists use to study cells is the microscope.
10. The kinds of proteins a cell makes largely determine the nature of the cell.
11. Mitochondria produce almost all the energy the cell needs to live and do its work.
12. One nerve fiber may supply from one to 200 muscle fibers, depending upon the type of work the muscle is called upon to perform.
13. Like any other muscle, the heart needs a supply of oxygen in proportion to the work it is doing, and the supply depends on the rate of flow in the arteries.
14. The proteins the cell needs in order to grow, repair itself, and perform hundreds
of chemical operations are made on the ribosomes.
15. The time it takes for blood to complete a single circulatory cycle is highly variable among species but tends to be much longer in invertebrates than in vertebrates.
16. The anatomical atlas by Galen ['geilan] (130 — 200 A.D.) was used by medical students during the Middle Ages mostly to memorise the astrological signs they
believed ruled each body part.
17. The organs and systems of the body vary greatly in quantity of blood they require at different times.
18. The seriousness of rheumatic fever lies primarily in the permanent damage it can do to the heart.

9.5 Придаточные предложения времени

Упражнение 49

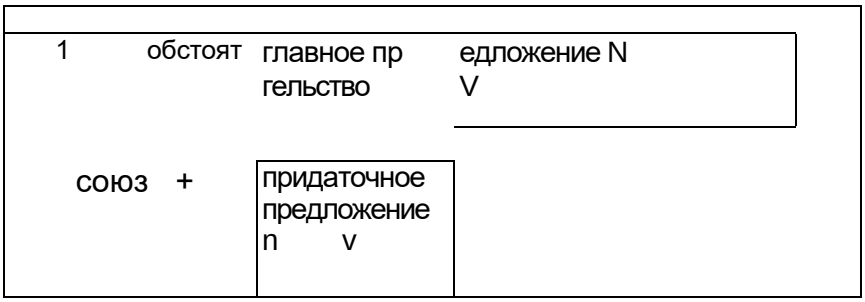
A. Проанализируйте структуру сложно-подчинённых предложений с придаточными обстоятельства времени, которые могут находиться как до, так и после главного предложения. Опираясь на схемы, приведённые ниже, найдите ядро в главном и придаточном предложениях и укажите союз, которым придаточное предложение присоединяется к главному.

Сложно-подчинённое предложение



или

Сложно-подчинённое предложение



Б. Переведите предложения.

1. The nasal passages filter the air as it passes through them.
2. The large intestine absorbs water from the food after it has passed through the
small intestine.
3. When the walls of the ventricles contract, the blood is sent out under pressure
into the aorta and pulmonary artery.
4. Once the food is chewed and moistened and reduced to a semi-liquid state, the tongue rolls it into a ball and pushes it backward into the pharynx.
5. The complex of digestive processes gradually simplifies the foods eaten until they are in a form suitable for absorption.
6. Except in emergency situations every effort is made to have the patient in a state of optimal health before surgery is performed.
7. As the baby takes its first breath the lungs fill and expand pressing against the rib
cage.
8. After food has been chewed and swallowed, it must be moved through the gastro intestinal tract for further preparation and final disposition.
9. Even when an individual muscle is voluntarily relaxed, some of its fibers are in contraction.
10. Once vitamin B_{12} has been absorbed from the gastro-intestinal tract it is stored in large quantities in the liver.
11. Pancreatic cancer is a silent disease that develops without apparent symptoms
until it is far advanced.
12. Immediately after a blood vessel is traumatized, its wall contacts in the region of the injury.
13. Patients with typhoid fever are placed under enteric precautions until the urine and feces are free of bacilli.
14. Blood transfusions became practicable and safe in 1900, after Landsteiner
discovered blood groups.
15. Today patients may be fitted with a prosthesis immediately after the limb is
removed and before they leave the operating room.

9.6 Придаточные предложения причины

Упражнение 50

А. Проанализируйте структуру сложно-подчинённых предложений с придаточными обстоятельства причины, которые могут находиться как до, так и после главного предложения. Опираясь на схемы, приведённые на стр. 76-77 в упр. 49, найдите ядро в главном и придаточном предложениях и укажите союз, которым придаточное предложение присоединяется к главному.

Б. Переведите предложения.

1. The pelvis is much stronger than the shoulder girdle as it has to support the full weight of the body.
2. The joints are prone to injury because they are in the less protected places of the body and are subject to great stresses.
3. An outstanding feature of the heart as a machine is its capacity to perform
continuous work, for it beats continuously during the life of the body.
4. The spleen is thought to be only a helper of other glands and organs for it may be removed from the body without any noticeable ill effects.
5. The systemic blood flow can take different routes since the systemic circulation
consists of numerous parallel subcircuits.
6. Even benign tumours can be harmful because their size or position may distort or damage nerves, blood vessels or organs.
7. The liver is also part of the circulatory system, since it cleans poisons out of the blood and regulates blood's composition in various other ways.
8. As the cells of the body reguire a constant supply of oxygen, the process of diffusion of oxygen from the blood across the capillary wall to the tissue fluid
and then into the cells is continuous.
9. Because mobile joints have to be able to withstand the friction of movement they are complex.
10. Normally, the human body lives in symbiosis with many bacteria, for all the mucous membranes of the body are constantly exposed to large numbers of bacteria.
11. Since the body is formed of about 50% water, a normal adult needs to drink about 2.5 litres of fluid each day.
12. Because their walls are thinner and contain a lower proportion of smooth muscle, veins are much more distensible than arteries.
13. Since the liver also secretes bile directly into the duodenum, the gall bladder is not an essential organ and can be removed by surgery.
14. As research in antineoplastic therapy continues it is expected that newer, less hazardous, and more precisely targeted chemical agents will be developed.
15. Any person suffering from bad vision or discomfort of the eyes, should see a physician immediately, for he may have a serious eye disease, e.g. glaucoma.

9.7 Придаточные предложения условия

ТИПЫ УСЛОВНЫХ ПРЕДЛОЖЕНИЙ

Тип	Примеры	Формы сказуемых		Значение
		главное предложение	придаточное предложение	
I тип	The smoke cloud **will go away if** the wind **blows** (tomorrow).	will+V	(V	выражают **реальное** условие, относящееся к **настоящему** или **ближайшему будущему,** и соответствуют в русском языке условным предложениям с глаголом в **изъявительном** наклонении: ***Пример:*** Дымовое облако **развеется,** если **подует** ветер.
II тип	The smoke cloud **would go away if** the **wind blew** (now).	would+V	**v2**	выражают **нереальное практически неосуществимое** условие, относящееся к **настоящему** или **будущему,** и соответствуют в русском языке условным предложениям с глаголом в **сослагательном** наклонении: ***Пример:*** Дымовое облако **развеялось бы,** если **бы подул** ветер.
III тип	The smoke cloud **would have gone away if** the **wind had blown** vesterdav.	would + have + V_3	had+V_3	выражают **нереальное несуществлённое** условие, относящееся к **прошедшему,** и соответствуют в русском языке условным предложениям с глаголом в **сослагательном** наклонении: ***Пример:*** Дымовое облако **развеялось бы,** если **бы** вчера **дул** ветер.

Упражнение 51

А. Проанализируйте сложно-подчинённые предложения с придаточными условия. Используя таблицу на стр. 79, определите форму глагола-сказуемого в главном и придаточном предложениях и укажите, какое условие (реальное или нереальное) описано в предложениях.

Б. Переведите предложения.

1. If blood flow is cut off from any organ, that organ cannot obtain oxygen, it has no nutrient and the cells of the organ die.
2. Many cancers can be cured by surgical removal if they are detected early, before there has been spread of significant numbers of tumour cells to distant sites.
3. If a person eats an adequate, varied diet of meats, fish, vegetables, and dairy products he will receive enough vitamins to meet his usual requirements.
4. If the body absorbs enough potassium but the element is not distributed properly, various disorders may develop.
5. If the central nervous system is damaged, paralysis frequently affects the move ment of a limb as a whole, not the individual muscle.
6. If the normal pacemaker(the sinoatrial node) fails to function, its regulating task may be taken over by another small mass of special muscular tissue, the atrioventricular node.
7. Benign tumours do not endanger life unless they interfere with normal functions of other organs or affect a vital organ.
8. In most cases polyps cause no symptoms unless they become large enough to obstruct the intestine or become ulcerated so that they bleed.
9. If cancer is suspected, a small piece of tissue may be cut from the diseased part and examined in the laboratory to see if cancerous cells are present.
10. Unless the salts are present in proper amount and in proper proportion, metabolism is impossible.
11. If both kidneys are affected, death will occur within a few days unless medical assistance is provided.
12. Unless growth of bacteria is prevented or stopped, serious infection can take place.
13. If too much water has been lost from the blood, the hypothalamus stops the kidneys from excreting water.
14. If the tumour is near the surface this may result in skin ulceration and infection.
15. If acute gout is recognized at an early stage and treated correctly, the develop ment of the chronic form can generally be prevented.
16. If the liver is diseased, or if the flow of bile is obstructed, or if destruction of erythrocytes is excessive, the bilirubin accumulates in the blood and eventually will produce jaundice.

Упражнение 52

А. Проанализируйте сложно-подчинённые предложения с придаточными условия. Используя таблицу на стр. 79, определите форму глагола-сказуемого в главном и придаточном предложениях и укажите, какое условие (реальное или нереальное) описано в предложениях.

Б. Переведите предложения.

1. The skeletons of animals would be too stiff to move if they were not carefully
fitted with joints.
2. If the arteries had rigid walls, the heart would have to pump all the blood without their assistance and would work harder than it does.
3. If the small intestine were removed from the body it would be 6.7 m long. In the body, however, it is shortened like a concertina to a mere 2.4 m.
4. If the kidney were not able to concentrate the filtrate produced by glomerular filtration, fluid losses would lead to fatal dehydration in a matter of hours.
5. If there were no way for excess interstitial fluid to return to the blood, the tissues would become swollen.
6. If the cell membrane were freely permeable to sodium ions, more of these positively charged ions would move into the cell and the transmembrane potential would move close to zero.
7. Inflamed surfaces of peritoneum tend to adhere and so to restrict the spread of peritonitis. If this were not so, untreated peritonitis would almost always be fatal within a day or two.
8. Even if 80 to 90 per cent of the small intestine were removed, the remaining part would still provide for sufficient absorption.
9. If the spinal column were indeed a single bone, the back would be rigid and unbending.
10. Skin is the largest organ of the body. If the skin of an adult were spread out flat, it would cover about 1.7 square meter.
11. It is not true that hypnotized persons will do absolutely anything they are asked. Most subjects, for instance, will not respond to any suggestions they would consider immoral or illegal if they were awake.
12. If the sensory nerves were evenly distributed over the whole body, each square inch of skin would have about 50 heat receptors, 8 for cold, 100 for touch and 800 for pain.
13. Large quantities of caffeine are deadly: tea or coffee could kill you, if you managed
to drink between 50 and 100 cups in one go.
14. A person would bleed to death from even a small cut if blood did not clot.

Упражнение 53

А. Проанализируйте структуру предложений и определите форму глагола-сказуемого. Условие в данных предложениях выражено не придаточным предложением, а оборотом с предлогом *without.* Укажите, какому типу условия соответствует форма глагола-сказуемого.

Б. Переведите предложения.

1. Without anesthesia, doctors could not perform most of the surgical operations.
2. Many discoveries and advances would not have been made without microscope.
3. Without protective antibodies, we could die of the first disease that struck us.
4. Without cholesterol we would surely die — every cell in the body depends on
the waxy substance to provide strength and resilience to its outer membrane.
5. Without oxygen the food that all living things take in would be useless to them and they would die.
6. Without the protection provided by the body's natural defences, we might bleed
to death from even minor cuts.
7. Without plants, the atmosphere would soon fill up with carbon dioxide, and
human beings and the other animals would suffocate.
8. Enzymes speed up chemical reactions in the cell. Without enzymes, these reactions would occur very slowly, and the cell could not function normally.
9. The human body contains more than 1,000 types of enzymes. Each kind of enzyme performs one specific job. Without enzymes, a person could not breathe, see, digest food, nor move any part of his body.
10. The brain requires a constant, unvarying supply of blood. Without the presence of a special control system consisting of the action of two nerves, one located in the aorta and the other in the carotid artery, this would be impossible to maintain, since every time a person moved or shifted position the quantity of blood flowing to the brain would change.

Упражнение 54

А. Проанализируйте сложно-подчинённые предложения с придаточными условия. Используя таблицу на стр. 79, определите форму глагола-сказуемого в главном и придаточном предложениях и укажите, какое условие (реальное или нереальное) описано в предложениях.

Б. Переведите предложения.

1. Galen's mistakes in describing human anatomy would not have mattered if they had not been enshrined for the next twelve centuries and more.
2. Galen's work would have been lost if it had not nurtured by Moslem scholars.
   Galen's experiments and his priceless accounts of earlier doctors returned to Western Europe at the end of the Middle Ages in Latin translations from the Arabic.
3. The tragedy of Galen ['geilsn] (A.D. 130 — 200) was that he needed a successor, and there was none. If someone more self-critical had been there to continue Galen's experiments, scientific medicine might have begun in earnest in the 2nd instead of the 16th century.
4. People who were cured by crude medical practices in the past would probably
   have recovered more comfortably if they had not been treated at all.
5. If the people of the world hadn't been so careless of their environment in the past, there would still be many large areas of rainforest left today, and so much of the planet's resources wouldn't have disappeared.
6. Had ecological principles, which stress the delicate balance of nature, won general acceptance earlier, many present-day environmental problems might have been avoided.
7. Bernard ['ba:ngrd] (1813 — 1878) was the greatest of all physiologists. He discovered several functions of the liver; the digestive action of the pancreas; the control of blood vessels by nerves; the carriage of oxygen by red blood cells and the abolition of this function by carbon monoxide; the nature of curare poisoning and its implications as regard the control of muscles by nerves; new facts about the brain and the spinal cord and the behaviour of secreting glands and of the kidneys. If Nobel Prozes had existed, Bernard could hardly have won fewer than four.

9.8 Придаточные соотносительные предложения (конструкция *the ... the)*

Упражнение 55

А. Опираясь на схему, приведённую ниже, проанализируйте структуру сложно-подчинённых предложений с придаточными соотносительными и найдите ядро в главном и придаточном предложениях.

Нередко сказуемые в таких предложениях отсутствуют.

Пример: The higher the blood pressure,
the greater the risk of strokes.

Сложно-подчинённое предложение

Придаточное предложение		Главное предложение
The ...-er n v прилагательное или наречие *в сравнительной* *степени*	,	the ...-er N V прилагательное или наречие *в сравнительной* *степени*

Б. На русский язык такие предложения переводятся с помощью сравнительной конструкции *"чем..., тем*

Например:

The earlier the diagnosis is made,
the more successful the results of treatment are.

Чем раньше поставлен диагноз, тем успешнее результаты лечения.

В. Переведите предложения.

1. The more we learn about the relationships between physiologic change and diet, the more we are provided with opportunities to use dietary means to slow some of these degenerative processes.
2. In general, the more times the heart beats per minute, the more blood it can pump, but there are important limitations to this effect.
3. Just like other muscles, the more exercise the heart gets, the stronger it becomes.
4. The higher the blood pressure, the greater the risk of strokes, coronary artery disease, renal failure and left ventricular failure.
5. The longer you are exposed to the noise and the louder it is, the greater the hearing loss is likely to be.

6. The larger a meal (especially in terms of protein), the more stomach acid is secreted.
7. The heart pumps in proportion to the amount of blood that enters: the less blood that enters, the less the heart can pump.
8. The rate of heartbeat depends in part on the size of the organism. The smaller the size, in general, the faster the heartbeat.
9. If the condition is cancer, then the sooner it is operated on, the better the results.
10. The more cholesterol in your blood, the more likely your arteries will become
clogged over time.
11. The more rapid the destruction of red blood cells, the greater the amount of
bilirubin in the body fluids.
12. The greater the concentration of dissolved molecules in the solution, the greater
is its osmotic pressure.

9.9 Виды придаточных предложений

Упражнение 56 (обзорное)

А. Проанализируйте структуру сложно-подчинённых предложений и укажите количество ядер. Определите вид придаточного предложения и способ его присоединения к главному.

Б. Переведите предложения.

1. Oxygen is essential for human life because most of the chemical activities which take place in the cells can only occur in its presence.
2. Since the blood performs many services for all parts of the body, it will reflect disturbances that occur as the result of many widely divergent diseases.
3. Epiglottis is the cartilage at the root of the tongue which moves to block the windpipe when food is swallowed, so that the food does not go down the trachea.
4. Although enzymatic action begins in the mouth, the major processes of digestion do not occur until the food passes down through the oesophagus into the stomach.
5. The heart develops electric charges as it beats because, like all muscles, it is electrically negative in its contracting portion and electrically positive in its relaxed
portion.
6. The pulse becomes less and less intense as it passes through the small arteries
until it becomes almost absent in the capillaries.
7. Once oxygen has diffused from the alveoli into the pulmonary blood, it is transpor ted to the tissue capillaries where it is released for use by the cells.
8. As vitamins are concerned with metabolism, it follows that absence or deficiency of certain vitamins can result in malnutrition and specific deficiency diseases.

9. Hydrochloric acid is a natural element in the stomach, and excess levels of it, together with the enzyme pepsin, quickly produce ulceration unless the stomach wall is protected.
10. Little is known about the physiological activity of vitamin E, but animal experiments suggest that it is concerned with the reproductive cycle and fertility.
11. Many studies indicate that excessive cholesterol levels in the blood can clog arteries and predispose to heart attacks and strokes, but whether the level of cholesterol can be controlled by avoiding saturated fats in the diet is still in dispute.
12. The brain is protected from harmful substances in the bloodstream by a barrier that keeps some of the substances out of the brain entirely and delays the entry of others for hours or even days after they have penetrated the rest of the body.
13. The problem of drug resistance in chemotherapy is particularly serious because tumors can develop a resistance to multiple drugs after only one drug has been administered to the patient.
14. The veins frequently anastomose with each other so that the blood flow can alter direction if there is any constriction or pressure from movement of muscles or ligaments.
15. Provided that there is no infection, or that infection is overcome, abdominal injures and operations heal remarkably well.
16. Advanced kidney disease causes anaemia, perhaps because the hormone erythropoetin, which promotes red-cell formation, is secreted by the kidneys, and diseased kidneys fail to secrete it.
17. Since a muscle can shorten to only 57 per cent of its resting length, the longer the muscle fibers composing the muscle the greater its range of movement.
18. If the disease manifests itself late in life, patients may not know they have diabetes until it is discovered during a routine examination, or when the symptoms of chronic vascular disease, insidious renal failure, or impaired vision cause them to seek medical help.
19. Although the right and left sides of the heart serve two separate branches of the circulation, each with its distinct function, they are coordinated so that the heart efficiently serves both sides with a single pumping action.
20. Preventive care is extremely important, especially when rheumatic fever has once occured, since it tends to return unless precautionary steps are taken.
21. How a person responds to drug is determined, in part, by tiny variations in the DNA. By analizing a patient's genetic profile, doctors may be able to determine in advance whether a drug will cause dangerous side effects.
22. While there is no doubt that the thymus plays a major role in the complex immunologic systems of humans, the precise mechanisms by which this takes place and the ways in which these mechanisms can be manipulated to the benefit of humans have yet to be determined.

Упражнение 57

А. Объедините отдельные предложения в текст, используя различные виды связи, такие как союзы, соединительные слова, например: *because, therefore, although,* so и др.

Б. Переведите составленный Вами текст.

The brain like other essential organs, depend on a steady oxygen supply.
A steady oxygen supply ensures the brain's continuous function.
The brain's main nutritional substance is glucose.
The brain is very sensitive to changes in the blood glucose level.
If a diabetic receives an overdose of insulin there is a fall in the blood sugar.
If there is a fall in the blood sugar the brain's activity is disturbed.
There is loss of consciousness.
It is important to understand the functions of the different parts of the brain.
It is important in many fields of human activity.
Recent studies of the brain have shown that it divides into two hemispheres.
There are other parts of the brain involved in its overall function.
The right and left hemispheres are most important.

Тексты
для тренировочного и контрольного перевода
(к части 3)

1. Scientists do not understand why dreaming is important, but they think the brain is either cataloging the information it picked up during the day and throwing out data it does not want, or is creating scenarios to work through situations causing emotional stress. Regardless of the reasons, most people who are deprived of sleep or dreams become disoriented, unable to concentrate, and may even have hallucinations.
2. Dr. Marian Annet thinks that a long time ago people used both hands equally;
what changed things was that human beings learned to speak. Speech became connected to the left hemisphere of the brain, and as speech became more important, so the left hemisphere became more and more powerful. As the left hemisphere became more important, so the right-hand side of the body was used more; right-handedness became more common, and the functions of the right hemisphere became weaker.
3. Our bodies need calcium for controlling muscle contraction and blood clotting as well as bone formation. But 99% of it is stored in bone, leaving only a tiny bit to circulate in the blood and carry out its other tasks. If the blood calcium level falls too much, the body starts to rob the mineral from the bones. Once that process begins, the loss of bone density can be dramatic and it can happen at any age. Women who go on unbalanced or starvation diets are particularly vulnerable. The best way to take calcium is in food because, when combined with other nutrients, it is much easier to absorb.
4. Why does blood remain in a fluid state when in the vascular system and why does clot within a few minutes when it is shed? It is obvious that the clotting in the blood vessels would produce serious symptoms which might be fatal in some instances, for arteries and veins would be obstructed, thereby preventing the proper flow of blood to the various tissues of the body. On the other hand, if the blood did not clot promptly, as in persons with hemophilia, death might result
from an extensive hemorrhage.
5. When blood passes through the capillaries, it loses some of its plasma, which becomes part of a liquid that is between the cells. This liquid is known as lymph. Lymph needs to be returned to the circulatory system to keep the blood volume fairly constant, so a system of tubes called the lymphatic system drains the lymph back into the blood. Along the way, lymph passes through lymph nodes that
filter out any debris, including bacteria, from the lymph. Lymph nodes are made from lymphoid tissue, but they are not the only organs where lymphoid tissue is
found; it is found everywhere that bacteria or other germs can easily invade the body, specifically in the linings of the parts of the body that are exposed to the outside.
6. About the year 1900 Dr. Mackenzie in England observed that the prevailing
system of diagnosis of heart disease failed too often to give an accurate estimate as to the future life of the patient. From his studies there developed a new
attitude towardthe study of the heart. The interest in heart disease was broadened

to include not only organic changes but also the functional conditions of the valves and the heart muscle. Dr. Mackenzie first demonstrated that certain irregularities such as respiratory arrhythmia and extrasystoles, are of practically no significance while others such as auricular fibrillation and paroxysmal tachycardia, may be much more serious. So we now speak of both structural or organic pathology and of functional pathology. Both are important. More recently doctors came to realize that a third factor is equally important, namely the etiology or the thing which caused the heart trouble.

7. In the 19th century physicians usually had to wait until an autopsy had been performed on a patient before they could determine whether or not their diagnosis had been correct. In the past, diagnosis has been static and qualitative. The present trend is towards dynamic and quantitative diagnosis: how far has the trouble advanced, and what progress is it likely to make? The current emphasis on early recognition of diseases that cause few symptoms until they reach a dangerous stage is bringing various "special" investigations into routine practice. But as a rule patients are subjected to X-rays, blood tests and the rest only when the possible diagnoses have been reduced to two or three suspects, or when a provisional diagnosis needs elaboration.

8. It has long been believed that the cyclic changes observed in plants and animals
were totally in response to environmental changes and, as such, were exogenous or of external origin. This hypothesis is now being rejected by some chronobiologists who hold that the biological rhythms are intrinsic to the organisms
and that the organisms possess their own physiological mechanism for keeping time. The mechanism has been called the "biological clock". An example of
adjustment of the biological clock in humans is recovery from "jet lag". This phenomenon occurs when humans are transported by jet plane across time zones. It is characterized by fatigue and lowered efficiency, which persist until the
"biological clock" adjusts to the new environmental cycle.

ЧАСТЬ 4 Особенности перевода некоторых слов и конструкций (Problem words and phrases)

РАЗДЕЛ 10 Формальная и усилительная функции местоимения *it*

Упражнение 58

А. Местоимение *it* может выполнять функцию формального подлежащего со сказуемым в страдательном залоге: *it is + V,*

Проанализируйте сложно-подчинённые предложения и найдите ядро в главном предложении с формальным подлежащим *it* и ядро придаточного предложения.

Б. На русский язык формальное подлежащее *it* не переводится, а вся конструкция передаётся безличным предложением. Например: It is known that ... Известно, что ...

В. Переведите предложения.

1. It is estimated that erythrocytes are the most numerous cellular elements.
2. It is postulated by a number of authorities that viruses may be only one of several fundamental causes of diabetes and in fact may be a minor cause.
3. It is thought that many birth defects result from extremely complex interactions of genes and environment.
4. It was found that different parts of the heart beat at different rates.
5. In addition to hemoglobin, it has been found that there are at least two other alternative oxygen carries — hemerythin and hemocyanin.
6. It has been estimated that there are between one and two million islets in the pancreas.
7. It has long been known that smooth muscle is more susceptible to chemical excitation than is skeletal muscle.
8. For many years it has been recognized that cells need calcium to function because their growth and development is related with changes in their intracellular calcium content.
9. It can be realized that formation of bile is controlled by certain hormone.
10. It must be realized that reflexes may occur at different levels of the central nervous system.
11. It should be realized that even when the muscle is at rest it remains slightly contracted.

12. It should be pointed out that heredity and evolution are important in the development of the structure of an organ.
13. It must be kept in mind that oxygen is considered a drug and should be prescribed and administered as such.
14. It is now recognised that practically every chemical reaction that occurs within the body reguires its specific enzyme to catalyse it.
15. It is believed that hypothalamus has a regulatory function for both the sympa thetic and parasympathetic divisions of the nervous system.
16. In the early 1940s, it was suspected that ribonucleic acid (RNA) was involved in protein synthesis because it had been found that cells producing large amounts of protein contained large amounts of RNA and vice versa.

Упражнение 59

А. Местоимение *it* носит формальный характер в кон струкции: *it is + существительное + that/which/who* (которая может придавать усилительный оттенок любому члену предложения, кроме сказуемого).

Найдите в предложениях усилительную конструкцию с формальным // и определите, какой член предложения подчёркивается ею.

Б. На русский язык усилительный оттенок чаще всего передаётся словами *именно, только,* подчёркивая значение существительного, причём формальное *it* и союз не переводятся.

Например: It is the formed elements which give blood its viscosity. Именно форменные элементы придают вязкость крови.

It is in the capillaries that exchange of gases takes place. Именно в капиллярах происходит обмен газов.

В. Переведите предложения.

1. It is the red marrow that makes the red cells of blood.
2. It is the S-A node (sinoatrial) that is the pacemaker of human heart.
3. It is DNA in the nucleus that stores the vital information.
4. It is the extracellular fluid that supplies the cells with nutrients and other substances
needed for cellular function.
5. It is only in certain organs such as the liver and the lungs that every cell is in direct contact with a capillary.
6. It is largely in the liver that toxic substances which might damage the cells are rendered harmless.

7. It is mainly the neutrophils and the monocytes that attack and destroy invading bacteria, viruses and other injurious agents.
8. It is in the gallbladder that stones form, because it is here that the bile is concentrated and cholesterol is precipitated.
9. Bile salts inhibit the growth of some microorganisms in the upper part of the intestine. It is only in the large intestine that bacteria multiply freely.
10. Capillaries are functionally the most important part of the circulatory system because it is through their walls that all the oxygen, nutrients, and waste products
pass between the blood and the body cells.
11. Before the 16th century individual doctors had frequently doubted Galen's authority
on specific points, but it was only after the invention of printing that such doubts could become widely known.
12. It was Pasteur [pcr.s'ta:] (1822 — 1895) who, by a brilliant series of experiments, proved that the fermentation of wine and the souring of milk are caused by living microorganisms.

Упражнение 60

А. Местоимение *it* носит формальный характер в усилительной конструкции:

It was not until + дата/событие + that...

Найдите в предложениях усилительную конструкцию и определите, какая дата или событие подчёркивается ею.

Б. На русский язык эта усилительная конструкция обычно передаётся словом *только,* а местоимение *it* и союз *that* не переводятся.

Например: It was not until the 1960's that relationships among nutrition, immunity and health were established. Только в шестидесятых годах (XX века) была установлена взаимосвязь между питанием, иммунитетом и здоровьем человека.

В. Переведите предложения.

1. It was not until the Renaissance that Europeans began to seek a scientific basis for medical knowledge.
2. It was not until the Middle ages that the details of circulation were discovered.
3. It was not until 1616 that W. Harvey ['ha:rvi:] announced his revolutionary disco very of the heart's function in circulation.
4. It was not until late in the Middle Ages that a belief that nerves were hollow and acted by transmitting vital spirit was seriously challenged.
5. Hooke [huk] (1635— 1703)recognized the cellular structure of plants in 1665, but it was not until 1839 that Schwann [Twain] (1810-1882) showed that the structure of plants and animals were fundamentally the same.

6. It was not until the 20th century that aspirin was first synthetically duplicated.
7. It was not until 1893 that a Japanese scientist Kitasato ['kita:'sa:tD:] showed that bubonic plague was a bacterial disease.
8. Bartholin [ba:'toulm] (1616 — 1680) found an association of diabetes with pancreatic
disease, but it was not until 1921 that hormone, insulin was isolated by Banting
['basntin] and Best [best].
9. It was not until 1939 that Cannon ['кэепэп], an eminent American physiologist,
introduced the term "homeostasis".
10. It was not until after the Second World War that cardiovascular surgery emerged as a valuable method of treating heart disease.
11. Heart transplantation was first achieved in animals in 1959, but it was not until 1967 that Barnard ['ba:nad] carried out the first human transplant.
12. It was not until 1980 that WHO (World Health Organization) declared that smallpox was eradicated, after the final recorded case in Somalia in 1977.

Упражнение 61

А. Местоимение *it* также носит формальный харак тер в конструкции:

it takes (сущ.)+период времени+(for сущ.) to do...,

а вся фраза указывает на период времени, требующийся для выполнения какого-либо действия.

Найдите усилительную конструкцию в каждом предложении и определите, для выполнения какого действия требуется указанный период времени.

Б. На русский язык формальное *it* не переводится, а смысл фразы с данной конструкцией передаётся с помощью слов *требуется, необходимо затратить.* Перевод нередко начинают с указания действия или процесса, в связи с которым упомянут соответствующий период времени.

Например: It usually takes about 6 weeks
for a broken bone to knit together. Для того, чтобы сломанная кость срослась, обычно требуется около шести недель.

В. Переведите предложения.

1. It takes cancer 15 to 30 years to develop from asbestos.
2. It takes from 30 to 40 hours for food to travel the length of the alimentary canal.
3. When food is swallowed it takes about 12 seconds for it to reach the stomach.
4. The amount of time it takes for blood to travel through the digestive system varies, depending on how easy it is to digest.
5. Depending on body weight and other factors, it takes the average adult nearly
one hour for his or her liver to metabolize 8 grams of alcohol.

6. In spite of the comparatively small size of the insulin molecule, it took a long
   time to unravel its tertiary (tridimensional) structure.
7. It takes longer for hormones to produce changes in body processes that it does for nerve impulses, but the effects last longer.
8. It takes only nine hours for food to reach the large intestine, but it may take one to three days to pass through that organ.
9. Although these neurological effects usually are reversible, especially if caught in the early stages, it may take months for the nerve cells to recover and resume normal function.
10. The first report of spinal cord stimulation was published 30 years age, but it has taken years for the pharmaceutical industry to refine the technigue to be suitable for clinical needs and for clinicians to appreciate its full potential in selected cases.

РАЗДЕЛ 11 Служебное слово *as*

Упражнение 62

А. Служебное слово *as* может иметь значения разных частей речи. В значении предлога или наречия *as* переводится на русский язык *"как", "в качестве".*

Б. Переведите предложения с предлогом *as.*

1. Lymph acts as a "middle-man" between the tissues of the body and the blood.
2. The spleen acts as filter against foreign organisms that infect the bloodstream.
3. The membrane of a red blood cell acts as an envelope.
4. The skin through its sensory innervation acts also as sense organ for the perception of pressure, temperature and pain.
5. Enzymes are special proteins which act as biological catalysts in cells.
6. As a metabolic organ, the kidney is responsible for the constancy of acid-base balance of the body.
7. As an exocrine organ, the pancreas has an important digestive function.
8. The cell is regarded as the smallest unit of living matter that can live independently and reproduce itself.
9. Although a part of the immune system, skin is often viewed as simply a barrier between the body and the outside world.
10. Blood is carried throughout the body in a closed system of tubes known collectively as blood vessels.
11. Water is excreted in expired air, as a constituent of the faeces, through the skin as sweat and as the main constituent of urine.
12. Increase in the white cells in infection is known as leucocytosis.
13. The larynx and trachea are subject to the same viral and bacterial infections as the nose and pharynx.
14. Lung cancer has now surpassed breast cancer as the primary cause of death.
15. All the structures and organs are held together by the connective tissue, made up of cells that act as a kind of packing to protect and support the internal mechanisms.
16. Substances in the body are regarded as waste materials if they cannot be used by cells and if their accumulation will upset the fine balance which must be maintained between chemical substances in the internal environment.

Упражнение 63

А. Служебное слово *as,* выступая в роли союза, вводит придаточные предложения обстоятельства времени и причины. В зависимости от содержания предложений *as* может переводится на русский язык:

а) *"когда", "во время", "в процессе", "по мере того, как";*

б) *"так как", "поскольку".*

Б. Переведите предложения с союзом *as.*

1. Fibrin is a substance formed in the blood as it clots.
2. The lungs remove waste material (carbon dioxide) from the blood and expel it as we breathe out.
3. Calcium is essential for normal functioning of all body cells as it is mediator for many cell functions.
4. Bone cells replace cartilage as a person grows.
5. Measles can be a serious disease as it weakens the body resistance to other diseases especially bronchitis and ear infection.
6. The epidermis is constantly being renewed as dead cells are shed from its surface.
7. Accumulation of subcutaneous fluid must be watched carefully as they can contribute to infection and tissue necrosis.
8. Close scrutiny of the skin is an important aspect of any physical examinations as skin condition can provide the examiner with valuable information concerning general health.
9. As the aorta reaches each organ, it branches to form arteries.
10. As the arteries get further from the heart, they branch into smaller and smaller arteries.
11. As the filtered blood passes through the nephron glucose, amino acids, mineral salts and most of the water are reabsorbed into the bloodstream.
12. As the blood travels from the arteries to the narrower vessels, its pressure falls as the energy imparted to it by the heart contraction is gradually lost.

Упражнение 64

А. Служебное слово *as* может входить в состав сложных союзов:
as long as - "пока"; "в то время, как"; "по мере" и *as soon as - "как только".*

Б. Переведите предложения с придаточными обстоятельственными, которые вводятся этими союзами.

1. The body commences its work of digestion as soon as food enters the mouth.
2. As soon as the baby is born its lungs inflate.
3. Normal kidney function can continue only as long as the processes of filtration,
reabsorption and secretion function within relatively narrow limits.
4. Persons without spleens are vaccinated against pneumococcus and advised to take antibiotics as soon as an infection begins to develop.
5. As soon as a blood vessel is cut, its lumen automatically constricts to reduce the flow of blood.
6. Many cholesterol gallstones can be dissolved without surgery as long as the gallbladder has retained its ability to concentrate bile.
7. The antigen-antibody reaction begins as soon as substances interpreted as foreign
invaders gain entrance into the body.
8. As long as the heart pumps the blood, the body gets the oxygen it needs.
9. Malignant hypertension is treated as a medical emergency as soon as it is diagnosed
because it can be fatal if not treated immediately.
10. As soon as Pasteur [pa:s'ta:] in France and Koch [ko:kh] in Germany had shown how microbes cause disease bacteriologists began to study immunity.
11. According to the experts, there is nothing unhealthy about eating chocolate, as long as it is part of a balanced diet.
12. As new viruses are produced, they are released from the cell to infect other cells. The new viruses become lifeless as soon as they are released.
13. A number of studies have suggested that taking large amounts of vitamin C as
soon as you get a cold may shorten the time you are sick by day or so.
14. The adaptive mechanisms for maintaining normal volume and distribution of fluids inside and outside the cells function only as long as there is adequate and
equal intake and output of water and electrolytes.

Упражнение 65

А. Служебное слово *as* входит в состав сложного союза *as well as,* который присоединяет однородные члены предложения (в значении *"также", "также как и")* и зависимый причастный оборот (в значении *"кроме", "помимо").*

Б. Переведите предложения с союзом *as well as.*

1. Drugs produce harmful as well as beneficial effects, and decisions about when and how to use them therapeutically always involve the balancing of benefits and risks.
2. The amount of water lost by the lungs depends on the minute volume of respiration as well as on the temperature and moisture of the atmospheric air.
3. Plasma transports nutrients, metabolic waste products and chemicals, as well as
hormones and drugs.
4. Most salts and minerals, as well as water, are readily absorbed from all portions of the small intestine.
5. The lymph vessels from the lower limbs, as well as \hose from the abdominal organs, unite to form the largest lymph vessel in the body, called the thoracic duct.
6. The red bone marrow contains mainly the cells responsible for the formation of leucocytes and erythrocytes as well as the giant cells of the bone marrow — megakaryocytes — which are responsible for production of platelets.
7. Excesses of parathyroid hormone caused by tumour or other pathological processes can lead to softening or weakening of bones, fractures and deformity, as well as formation of calcium stones in the urinary tract.
8. The marrow present in some bones is responsible for the formation of red blood cells as well as the formation of certain kinds of white blood cells.
9. Bile as well as being an aid to digestion provides a means for the excretion of
certain waste products.
10. As well as being a storehouse for food, fatty tissue provides an excellent packing for delicate organs.
11. As well as proving an external secretion, the pancreas also forms an internal secretion which is of the very greatest importance to carbohydrate metabolism of the body.
12. As well as their diagnostic uses, X-rays can also be used in the treatment of
cancerous tissue.
13. Bone lesions commonly occur in the vertebral column, ribs and pelvis, as well as in the long bones of the arms and legs.
14. A simple cystitis that does not involve the rest of the urinary tract is not as serious as the descending type in which the kidneys and ureters as well as the
bladder are involved.

Упражнение 66

А. Сравнительная конструкция

as + прилагательное/наречие + as

на русский язык передаётся следующими эквивалентами:

"столь же", "такой же", "сопоставимый по размеру с...".

Б. Переведите предложения.

1. Bones are as strong as steel but much lighter and more flexible.
2. Scapula, or shoulder-blade, is a flat bone, about as large as the flat hand and fingers.
3. From head to toe, the adult human skeleton consists of 206 bones, as large as the thighbone, and as small as the bones of the ear.
4. Older people do not learn new things as quickly as younger people, but once something has been learned, they remember it better and more accurately.
5. The brain contains as many nerve cells as there are stars in the universe.
6. Mitosis is a continuous process, which may take as little as 5 minutes or as long as several hours from start to finish.
7. A person with severe renal disease may lose as much as 20 to 30 g of plasma proteins in the urine in one day.
8. Places where medical operations are carried out should be kept as germ-free as possible.
9. If the heart fails to pump as well as it should, the body retains fluid.
10. China is still the only country in the world where the traditional doctor, using herbal medicine and acupuncture, is as respected as the Western-trained doctor.
11. In order that the food may be retained as long as necessary in the stomach, and not regurgitate into the oesophagus, or else be passed too quickly into the intestine, it is provided with two sphincters.

Упражнение 67

А. Служебное слово *as* входит в состав сравнительной конструкции

times as ... as,
(числительное) (прилагательное)

которая имеет значение

"в (...) раз больше/чаще/дольше, чем ..."

Например: ten times as many as
в десять раз больше, чем

Б. Переведите предложения со сравнительной конструкцией.

1. Skin cancers are twice as common among men as they are among women.
2. Statistics show that men qet into car accidents twice as many as women.

3. Bile leaving the gallbladder is six to ten times as concentrated as that which comes to it from the liver.
4. The average baby sleeps for twice as long as the average adult. Babies also dream twice as much as older human.
5. There is almost twice as much calcium in the body as phosphorus and 500 times as much calcium as iron.
6. Fats supply more than twice as many calories as proteins or carbohydrates; for this reason they are particularly useful as foods when a large amount of energy is required.
7. The brain needs ten times as much blood as other organs of the body, as it can't store glucose for later use.
8. The disease affects men and women about equally in number, but three times as many women as men develop symptoms severe enough to require medical attention.
9. Anger-prone people are three times as likely to have heart attacks as more passive folks.

РАЗДЕЛ 12 Составные предлоги

Упражнение 68

А. Ознакомьтесь со списком составных предлогов и объедините их в синонимичные группы.

according to	согласно, в соответствии
along with	наряду
as regards	что касается, в отношении
as to	относительно, что касается
because of	из-за, вследствие, благодаря
by means of	при помощи, посредством
by virtue of	благодаря, в силу, посредством
by way of	посредством, при помощи
depending on	в зависимости от
despite	несмотря на
due to	из-за, вследствие, благодаря
in addition	в дополнение, кроме
in regard to	относительно, что касается
in spite of	несмотря на
in view of	ввиду
owing to	из-за, благодаря
regardless of	невзирая на
with regard	в отношении, относительно

Б. Переведите предложения, содержащие составные предлоги.

1. Antibodies can be classified according to their mode of action.
2. Artificial respiration is also administered along with other procedures in case of cardiac arrest.
3. There is no general agreement as to the normal and therapeutic daily require ments of vitamin C.
4. There has been a reduction in incidence of secondary amyloidosis (the deposition of amyloid) in recent years because of the development of drugs that are successful in controlling infection and suppuration.
5. The only treatment available for this condition is dialysis by means of what is
sometimes called an artificial kidney.
6. Phagocytosis is the property possessed by many animal cells of engulfing particles by virtue of their power of ameboid movement.
7. Cystitis may result from an ascending infection coming from the exterior of the body by way of the urethra.

8. There is a variety of medications that may be prescribed for patients with rheumatoid arthritis depending on the needs and tolerance of the individual patient.
9. Despite their minute size, the capillaries have a vast total area.
10. Cyanosis can indicate hypoxia due to inadequate numbers of oxygen-bearing erythrocytes.
11. In addition to the physical effects of general anesthesia, the emotional and psychological aspects must also be considered.
12. The pH concentration is extremely important in evaluating a patient's status in regard to states of acidosis and alkalosis.
13. In view of the many functions of the liver, it is essential to identify specific problems.
14. If untreated, and sometimes in spite of treatment, the joint pathology in rheumatoid arthritis goes through four stages.
15. The treatment of chronic renal failure is highly complex owing to its impact on systems throughout the body.
16. Like the cells of other tissues, the white cells occasionally multiply regardless of the body's needs.
17. With regard to the wandering cells some are certainly non-phagocytic, for instance, the lymphocytes.
18. As regards the different varieties of phagocytes, a number of cells possess ameboid properties.

РАЗДЕЛ 13 Многозначность английского глагола и других частей речи

Упражнение 69

А. Выпишите из словаря значения глагола *take* с различными предлогами, которые могут придавать глаголу новые значения.

Б. Переведите предложения.

1. The human body takes in and absorbs oxygen through the respiratory system.
2. The task of the kidneys is to take out of blood stream waste substances like urea and uric acid, which are dissolved in water.
3. Alimentary canal is a long tube through which food is taken into the body and
digested.
4. Once surgery is completed, the patient is taken to an intensive care unit, where the vital signs are carefully monitored. Once out of danger, the patient is taken to a ward.
5. His leg had to be taken off above the knee.
6. After the plaster is taken off the damaged limb, the muscles need special exercises to become strong again.
7. The donor heart takes on the pumping function for the recipient.
8. As the fetus grows and develops, the metabolic functions of the placenta are gradually taken on by the fetal liver.
9. Red blood cells produced in the bone marrow contain the pigment haemoglobin, which takes up oxygen in the lungs and releases it in the tissues.
10. To stay healthy, people ought to take up exercise.
11. Galen ['geilan] (130 — 200 A.D.) took up his real profession in Alexandria, then the leading medical school.
12. It is often necessary to use an artificial organ to temporarily take over the functions of an organ undergoing transplantation surgery.
13. If the spleen has to be surgically removed its functions are taken over by other organs, such as the liver.
14. When a virus infects a cell, its nucleic acid takes over the cell's metabolism.
15. If the normal pacemaker fails to function, its regulating task may be taken over by another small mass of special muscular tissue, the atrioventricular node.

Упражнение 70

А. Выпишите из предложений глагол *take* + *существительное.*

Б. Найдите в словаре перевод этих словосочетаний. Обратите внимание, что в некоторых случаях в зависимости от существительного значение глагола *take* может меняться.

В. Переведите предложения.

1. The systemic blood flow can take different routes since the systemic circulation consists of numerous parallel subcircuits.
2. By its content of immunologically active cells the skin takes part in the defence mechanisms of the body.
3. Liver transplant involves taking a part of the liver from a close relative of the patient and implanting it in the patient.
4. The process of mastication and the beginning of swallowing takes place in the mouth.
5. Since carbon monoxide combines more readily with hemoglobin than does oxygen, it takes the place of oxygen in the erythrocytes and the tissues are thus deprived of their normal oxygen supply.
6. When bone cells take the place of all of the cartilage in the growth plate, the bone stops growing longer.
7. If breathing and circulation are not restored within four to six minutes irrever sible brain damage occurs and "biological death" takes place.
8. The physician takes blood samples to determine such things as the sugar content, the urea content, or the inorganic-ion composition of blood since these show characteristic changes in disease.
9. When changes in mental ability occur they may take the form of lapses of memory, mental sluggishness, or loss of initiative.
10. Some doctors take the view that middle-aged sportsmen should be warned of the health risks they are running, so that they might moderate their sporting activities.
11. As in any biological system, structure and function of the vessels are so closely related that one cannot be discussed without the other's being taken into account.
12. A comprehensive diagnosis of heart trouble must take into consideration the factors which produce the disease, the amount of organic or structural damage, and the functional reserve left in the heart muscle.
13. Infection, foreign bodies and local blood flow may each take its toll on the healing process.
14. The aging process also takes its toll on the skin as well as other organs.
15. The body's joints are amazing contraptions. When they work well, we take them for granted.

16. Like Descartes [dei'ka:t] (1596-1650) before him, Bernard [ba:nard] (1813 — 1878) took nothing for granted, but trusted logical conclusions drawn from proven facts.
17. Since silicosis is a serious disease, those who must work near silica should take
precautions to breathe as little of it as possible.
18. Residency training in the US takes from 3 to 7 years, depending upon the field of specialization. This training takes place in a hospital where a resident takes care for patients under the supervision of specialists. After completing the training
physicians take an examination.

Упражнение 71

А. Найдите ядро каждого предложения и выпишите сказуемое, выраженное глаголом с предлогом в страдательном залоге.

Б. Пользуясь словарём, найдите перевод этих глаголов в сочетании с предлогами. Например: is brought about - в предложении
bring about - в словаре
(в словаре приводится глагол в форме инфинитива в действительном залоге).

В. Переведите предложения.

1. Haemophilia is passed on by a woman to her son.
2. The neutralization of acid chyme is brought about by the carbonates in the bile.
3. After the food leaves the stomach it is acted on by several digestive enzymes.
4. The work and structure of all cells are mainly carried out by a group of highly
variable complex chemicals, proteins.
5. Most patients with a myocardial infarction are cared for in a coronary care units during the acute stage.
6. When there is an outbreak of plague, strict quarantine measures are called for.
7. During heavy exercise the lungs are frequently called upon to absorb up to 20
times as much oxygen into the blood as they normally do.
8. A cell that has been infected by a virus begins to produce the proteins that are
called for by the nucleic acid of the virus.
9. As the fetus grows and develops, the metabolic functions of the placenta are gradually taken on by the fetal liver.
10. If the spleen has to be surgically removed its functions are taken over by other organs, such as the liver.
11. As a result of recent progress in the methods of brain surgery, many cases of brain tumor can now be operated on successfully.
12. Hypertension is a chronic health problem that must be dealt with for the rest of the patient's life.

13. An acute abscess can be dealt with by opening and draining when it has reached the stage where sufficient pus has been formed.
14. Aphasic patients should be spoken to slowly, distinctly, and in a normal tone.
15. Any increase in distortion or blurred vision should be immediately reported and
followed up by an urgent outpatient exam.
16. If even a minor respiratory infection develops, the patient is subject to a rapidly
developing state of acute acidosis because the lungs cannot be depended upon
to remove more than a minimal amount of CO_2.
17. The study was carried out according to a randomized, double-blinded, placebo-controlled, parallel-group design.

Упражнение 72

А. Слово *one* может:
1) иметь значение *"один"*;
2) выполнять функцию формального подлежащего (иногда формального дополнения);
3) использоваться в роли слова-заменителя во избежание повторения существительного (см. упр. 75).

Определите, какое значение имеет слово *one* в предложениях.

Б. На русский язык *one* в функции формального подлежащего либо не переводится, либо переводится с использованием обобщающих слов: *"человек", "каждый", "все".*

Например: One must know ...
Необходимо знать ...

If one is hungry ...
Если человек голоден, ...

В. Переведите предложения.

1. One should take care of one's health.
2. One should control the diet by limiting foods high in cholesterol.
3. A varicose vein is one which is so dilated that the valves do not close to prevent backward flow of blood.
4. In the case of gastritis, one usually experiences a painful burning sensation in the digestive tract.
5. The knee is a complex hinge joint, one of the largest joints of the body, and one that sustains great pressure.
6. Direct transfusions in which blood from one person is directly transferred to another person is now rarely used.
7. Pneumonia once was a common cause of death and killed one out of four victims.

8. The bones of the am are connected to the axial skeleton by way of two pairs of bones in the upper torso, one in front and one in back.
9. If one is hungry, the rate of salivary flow increases quickly at the sight, smell, or even thought of food.
10. Exercise stimulates the production of endorphins, which increase one's sense of well-being, improve circulation, and help prevent osteoporosis.
11. Most adenomas affect only one of the pair of adrenal glands and therefore can be removed surgically without depriving the patient of a sufficient supply of adrenal cortical hormones.
12. It is possible to prevent pneumonia in many susceptible persons by being aware of factors that predispose one to the disease and by taking precautions.
13. When one swallows, the rear of the soft palate swings up against the back of the pharynx and blocks the passage of food and air to the nose.
14. When one sniffs, air currents carrying molecules of odorous chemicals enter special compartments called olfactory chambers, where the chemicals are dissolved in mucus.

Упражнение 73

А. Слово *that* может:
1) быть указательным местоимением *"тот", "та", "то";*
2) вводить придаточные предложения:
а) определительные - в значении *"который",*
б) дополнительные - в значении *"что",*
в) подлежащие - в значении *"то, что",*
г) сказуемые - в значении *"то, что";*
3) использоваться в роли слова-заменителя во избежание повторения существительного (см. упр. 76).

Б. Определите, какое значение имеет слово *that* в следующих предложениях.

В. Переведите предложения.

1. Exchange of gases between the blood and the lungs is called external respiration and that between the blood and the cells internal respiration.
2. In neutropenia (an abnormal reduction in the number of circulating granulocytes) severe infection develops that leads to tissue necrosis.
3. Doctors say that women are far more likely than men to experience sleep diffi culties of all kinds.
4. Biochemical reactions produce heat, and that heat is retained in the water that
accounts for nearly 66% of the body weight.
5. The quantity of blood flowing through the lungs is essentially equal to that flowing through the systemic circulation.

6. The total volume of water alone that enters the alimentary canal during an average day is about seven liters, compared with an average consumption of perhaps two liters.
7. The respiratory muscles may be used in various combinations depending on the volume of air that must be moved into or out of the system.
8. Each lung is surrounded by the pleura. That part of the membrane which is adherent to the lung is known as the visceral pleura, and that part which lines the inner surface of the chest wall as the parietal pleura.
9. Unlike that of the small intestine, the mucosa of the large intestine does not have villi.
10. Unlike that of an animal cell, the cell membrane of a typical plant cell is covered with a protective wall of cellulose.
11. The fact that a person suffering from shock has large amounts of histamine in the blood suggests that histamine also plays a role in this condition, but its presence may be an incidental side effect.
12. That advanced age is not decisive in the development of atherosclerosis emerges from the fact that myocardial infarction and other atherosclerotic manifestations often develop in man in early middle age.

Упражнение 74

А. Слово *both* может употребляться самостоятельно в значении "оба"или в конструкции с союзом *and:*

"both ... and..." со значением *"как, так и ...".*

Б. Найдите, в каком предложении слово *both* имеет самостоятельное значение, а в каком оно используется в сочетании с союзом *and.*

В. Переведите предложения.

1. The red corpuscles are shaped like disks, both sides of which are concave.
2. Bacteria are both useful and harmful to humans.
3. Both very high blood pressure and very low blood pressure can be dangerous to health.
4. Some of the cranial nerves are both sensory and motor; i.e. they control motion as well as conduct sensory impulses.
5. The heart is well supplied with both sympathetic and parasympathetic nerves.
6. All drugs can cause both wanted and unwanted effects on the body.
7. Nucleus and cytoplasm are both essential to the life of the cell.
8. The nucleus controls both the chemical reactions that occur in the cell and reproduction of the cell.
9. Rheumatoid arthritis commonly appears simultaneously in several joints, usually on both sides of the body — that is, both wrists, shoulders, ankles or knees.
10. The nose is the specialized structure of the face that serves both as the organ of smell and as a means of bringing air into the lungs.

11. The spleen is an organ of dual nature, belonging to both the blood-vascular and
lymphatic system.
12. Spinal column forms an important part of the skeleton, acting both as the rigid pillar which supports the upper parts of the body and as protection to the spinal
cord and nerves arising from it.
13. Harvey ['ha:vi:] (1869 — 1939), a pioneer of brain surgery, was both a distinguished scientist and one of the most skilful of surgical technicians — a rare combination
but essential to his chosen speciality.
14. The muscles help to regulate the physico-chemical state of the internal environment
both directly as in a case of cardiac muscle which pumps the blood round the body and also indirectly as in case of the muscles of movement which help to
defend the body against the external environment and bring it food.

РАЗДЕЛ 14 Слова-заменители

Упражнение 75

А. Проанализируйте предложения и найдите, какие существительные заменены словами *one* и *ones.*

Слова-заменители употребляются в английском предложении, чтобы избежать повторения существительного, упомянутого дважды.

Б. На русский язык слова *one* и *ones либо* не переводятся, либо используется повтор заменяемого существительного.

Например:

Cardiovascular system is a dynamic one. Сердечно-сосудистая система - это динамичная система.

As the body changes from a state of rest to one of activity, its requirements alter. По мере того, как организм переходит от пассивного состояния к активному, его потребности меняются.

В. Переведите предложения.

1. Cancer cells differ from healthy ones in various ways.
2. Epidermic cells divide forming new ones.
3. An acute abscess is one which develops rapidly within the course of a few days or hours.
4. There are many causes of pancreatitis, but the most prominent ones are alcohol abuse and gall stones.
5. The left coronary artery is generally larger than the right one.
6. The auricles are receiving chambers of the heart and the ventricles distributing ones.
7. A tumor is initiated by the transformation of a normal cell into one that escapes
the host's usual control on growth and differentiation.
8. Since the role of minerals is a regulatory one, only relatively small amounts of them are needed by the body.
9. Tooth decay can be reduced by limiting the intake of certain forms of sugar, especially highly concentrated ones such as candy or rich desserts.
10. The neuron can be converted from a resting, or inactive, cell to one that conducts an electrical impulse in just a few thousandths of a second.
11. An embolus from the clot in the right side of the heart becomes lodged in the lung, while one from the left side may lodge in any other organ, most commonly in the brain.
12. As water forms about 60% of the body weight of man it is very obvious that the
part it plays in metabolism must be an important one.

13. The remarkable fact that the blood is able to maintain a reaction which is alkaline and one which varies only within narrow limits is due to the buffers of the blood.
14. Simple microscopes — ones with only one lens — are really no more than the magnifying glasses.

Упражнение 76

А. Проанализируйте предложения и найдите, какие существительные заменяются словами *that* и *those.*

Слова-заменители используются в английском языке для того, чтобы избежать повторения в одном предложении существительного или группы слов, упоминаемых дважды.

Б. В русском предложении вместо слов *that* и *those,* как правило, используется повтор упомянутого существительного, либо оно не переводится.

Например:

The digestive action of the stomach secretion is much more powerful than that of the saliva.
Пищеварительное действие желудочного секрета значительно сильнее, чем действие слюны.

Old people's bones are more fragile than those of adolescents.
Кости у пожилых людей более хрупкие, чем у молодых.

В. Переведите предложения.

1. In humans, the sense of smell is relatively underdeveloped when compared to
that of the dog, for example, which depends on it to a far greater extent.
2. People living in tropical climates have lower metabolic rates than those living in cold regions.
3. The walls of the veins are thinner than those of corresponding arteries.
4. Stones in the gall bladder vary from the site of a small seed to that of a lemon.
5. Lymphatic glands vary much in size, from that of microscopic masses to that of
large beans.
6. The medullary hormones increase the activity of all body cells including those not supplied with sympathetic nerve fibres.
7. A continuous supply of oxygen is reguired by living cells, in particular those of
the brain since deprivation is followed in minutes by unconsciousness and death.
8. Structurally lymph vessels are similar to veins and blood capillaries but the pores
in the walls of the lymph capillaries are larger than those of the blood capillaries.

9. There is growing evidence for exercise as an important part of the prevention and treatment of back problems for those suffering from either chronic or acute back pain.
10. Blood flowing in the hepatic portal system is guite different from that in other systemic veins, because the hepatic portal vessels contain substances absorbed by the stomach and intestines.
11. In recent years there has been extensive research into the body's ability to
differentiate between cells, organisms, and other substances that are self, and therefore not alien to the body, and those that are not self and therefore must be
eliminated.
12. Unlike that of other animals, the skull of humans is balanced above the vertebral column, allowing an upright posture.

Упражнение 77

А. Проанализируйте предложения и найдите, какие существительные заменены словами *the former - "первый из выше упомянутых"* и *the latter - "последний из выше упомянутых".*

Б. Слова *the former* и *the latter* либо переводятся как указано выше, либо используется повтор существительного, которое они заменяют.

Например:

Muscular tissue is divided, according to its function, into two main groups, voluntary muscles and involuntary muscles, of which the former is under control of will, whilst the latter discharges its functions independently.
По своей функции мышечная ткань делится на две основные группы: произвольные мышцы и непроизвольные мышцы: причём первая группа подчиняется волевому контролю, а вторая группа мышц выполняет свои функции независимо от него.

The skin consists of two main parts: an outer layer, the epidermis, and an inner layer, the dermis. On the surface of the latter are sensitive papillae.
Кожа состоит из двух основных частей: наружного слоя, эпидермиса, и внутреннего слоя, дермы. На поверхности дермы расположены чувствительные сосочки.

В. Переведите предложения.

1. The main difference between the veins and the arteries is in the comparative weakness of the middle coat of the former.
2. The work of the left side of the heart is greater than that of the right, since the
former has to drive the blood all over the body, while the latter has only to force it to the lungs, which are near by.

3. As the bones of a child are composed to the extent of about two-thirds of fibrous tissue, whilst those of the aged contain one-third, the toughness of the former and brittleness of the latter are evident.
4. Water is lost through the skin by two processes differentiated as "insensible" and "sensible" perspiration, the former referring to evaporation of invisible water and the latter to removal of an accumulated film of visible water.
5. The brain is often compared to a computer. One of the major differences between brains and computers is the reliance of the latter on but one kind of signal
(electrical impulses) for communicating among their components.
6. There are two main types of cell division, mitosis and meiosis. The former gives rise to daughter cells that are identical to the parent cell. The latter gives rise to
egg and sperm cells, which differ from their parent cells.
7. The mineral of teeth differs from the mineral of bones in that the former contains a small but significant quantity of fluoride ions in place of some of the hydroxyl ions.

РАЗДЕЛ 15 Устойчивые словосочетания

А. Конструкция *no longer* представляет собой устойчивое сочетание и обычно переводится на русский язык словами *"больше не".*

Упражнение 78

Б. Переведите предложения с данной конструкцией.

1. Diabetes mellitus is a disease in which the body no longer uses sugar properly.
2. Artificial respiration is a technique to provide air to an individual whose respiratory muscles are no longer functioning.
3. Many scientists no longer see cancer as caused by a single agent but by a combination of factors.
4. Scarlet fever is no longer considered to be a very serious illness.
5. A skeletal muscle fiber is said to be fatigued when it can no longer contract despite continued neural stimulation.
6. A person can be vaccinated by injecting dead organisms that are no longer capable of causing disease but which still have their chemical antigens.
7. When calcium is deposited in the ground substance of cartilage it is no longer cartilage but bone.
8. A group of substances which decrease blood capillary fragility, called the vitamin P group, are no longer considered to be vitamins.
9. Though the skin is normally impregnable to infectious agents, this no longer holds true when the skin is broken.
10. Because boric acid is highly poisonous when taken internally, and since other antiseptics are more effective, boric acid is no longer recommended.
11. Those persons who no longer have a functioning spleen, either as a result of splenectomy or because of a destructive disease process, are at very high risk for the development of life-threatening infections.
12. When a number of valves no longer function efficiently, the blood collects in the veins, which gradually become swollen and more distended.

Упражнение 79

А. Конструкция *rather than* представляет собой устойчивое сочетание и обычно переводится на русский язык словами *"а не".*

Б. Переведите предложения с данной конструкцией.

1. Diagnosis, rather than treatment, is usually the main focus of the activities of pathologists.
2. A diagnosis of hypertension should be based on a series of readings rather than a single measurements that could be influenced by emotional state or physical activity.

3. To homeopaths, illness is seen as a sign of disharmony or imbalance in the body's normal working, so they try to resolve underlying problem rather than simply dealing with symptoms.
4. Hippocrates [hi'pokra'ti:z] (a. 400 B.C.) believed that patients should be treated using scientific methods rather than trusting in magic or religious beliefs.
5. It is from the lymph rather than from the blood that tissues receive their nourishment and into it they excrete their waste products.

Упражнение

80

А. В конструкции *used to + V,* выполняющей функцию сказуемого, *used* означает, что действие, выраженное инфинитивом, носило обычный или регулярный характер в прошлом. На русский язык *used* переводится вводными словами *"раньше", "обычно", "бывало".*

Б. Переведите предложения с данной конструкцией.

1. People used to tell time by the sun.
2. People are living longer today than they used to.
3. Malaria used to be a more common disease than it is today, and many people died from it.
4. Nowadays there are far fewer deaths from typhoid than there used to be.
5. Many people who used to eat meat regularly are now avoiding it.
6. Vegetarians used to be regarded as very strange but vegetarianism is now becoming much more popular in Britain.
7. The hospital records used to be kept on a card index, but have been transferred to the computer.
8. There are several kinds of sensation. The old classification used to be that there were five senses.
9. A severe form of this type of anaemia, known as chlorosis, used to be common, but it is seldom seen nowadays.
10. Biologists used to think that the immune system was a separate, independent part of the body.
11. Women are much more knowledgeable than they used to be about pregnancy and the birth process.
12. Surgical removal of the tonsils and adenoids is done much less than it used to be, but it still has a place in the treatment of recurrent sore throat in childhood when the tonsils are obviously unhealthy.
13. Scientists used to believe that adult brains did not grow any new neurons, but it has emerged that new neurons can sprout in the brain of adult rats, birds and even humans.

14. Addiction used to be defined in terms of the severity of the withdrawal. Then the idea of the three Cs was coined: Compulsion, less of Control and Continued use.
15. Many people used to take natural resources for granted. We have wasted many of those resources and caused thousands of hectares of land to become useless.
16. A hundred years ago people used to eat on average a kilo of sugar each year. Now we eat a kilo a week.
17. The cooperation of industry, labor, and government in developing various protective measures has made silicosis a much less common disease today than it used to be.
18. Scientists used to think that adult illnesses like diabetes, obesity, cardiovascular disease and breast cancer were the result of either unhealthy living or bad genes. No longer. New research suggests that these conditions may have their roots before birth.
19. Infectious diseases used to be the most serious health problem, but work by Pasteur [pa:s'ta:] and Lister ['hsta] in the 19th century helped to reduce them.
20. People used to believe that medical help was necessary only when they became ill. It is now widely recognised that preventive medicine has an important role to play in maintaining the health of the population at large.

РАЗДЕЛ 16 Перевод сложных определений

Упражнение 81

А. Найдите в предложениях существительные, к которым относятся выделенные сложные определения. В случае если определение не имеет параллели в русском языке, оно переводится либо развёрнутым определением, либо придаточным предложением.

Б. Переведите предложения.

1. Some physicians also prescribe a **high-protein** diet to compensate for the protein
lost in the urine.
2. This **two-way** exchange takes place across the placental membrane, which is semi-permeable.
3. Rubella is a mild systemic disease caused by a virus which is also called **three-**
day measles.
4. The retina is composed of **light-sensitive** neurons arranged in three layers.
5. Hypoglycemia is a **lower-than normal** level of glucose in the blood.
6. **Low-birth-weight** and **very-low-birth-weight** infants are particularly susceptible to infections because their immunologic system is deficient.
7. Placebo is an inactive substance or **less-than-effective** dose of a harmless substance
prescribed and administered as if it were an effective dose of a needed drug.
8. Untreated, the pain that accompanies **all-too-common** ailments such as arthritis, cancer and neurological disorders can slow recovery and severely impair a person's quality of life.
9. Through the **one-cell-layer-thick** walls of capillaries oxygen and nutrients are passed from arterioles to body tissue.
10. At a biochemical level, caffeine increases levels of catecholamines, the neurotransmitters involved in the **fight-or-flight** response.
11. Medicines are divided into two main classes: prescription medicines and **over-the-counter** medicines.
12. Microorganisms provide **easy-to-work-with** material for studying the complex processes of life, e.g. metabolism.
13. Face is the **most-looked-at** part of anybody's body.
14. An **as-yet-undefined** relationship exists between asthma and the emotions.
15. There is no **as-yet-successful** treatment for curing this disorder.
16. Various **not-yet-fully-understood** factors may result in acute pancreatitis.
17. Skin care is important, especially for infants and **not-yet-toilet-trained** toddlers.
18. Doctors recommend the **early-to-bed-early-to-rise** routine.

Упражнение 82

А. Найдите в предложениях определения, выраженные особой формой прилагательного, второй частью которого является слово *-shaped,* означающее *"имеющий форму"* (на форму указывает первая часть сложного определения).

Например: V-shaped

имеющий форму буквы V (V-образный)

Б. Переведите предложения.

1. Animal cells may be round, egg-shaped, or rectangular.
2. Blood platelets are small coin-shaped particles, much smaller than the red cells.
3. Chromosomes are V-shaped pieces seen in the nuclei of cells during cell division, but not seen in resting cells.
4. The pancreas lies within the abdomino-pelvic cavity in the J-shaped loop between the stomach and small intestine.
5. Men has two bean-shaped kidneys located in the posterior part of the abdomen.
6. A tonsil is an almond-shaped mass of lymphoid tissue at either side of the back of the mouth.
7. A snail-shaped bony canal, the cochlea, winds two and a half times around a pillar of bone and opens into the wall of vestibule.
8. The L-shaped palatine bones form the posterior portion of the hard palate.
9. The clavicles are S-shaped bones that originate at the superior and lateral border of the manubrium of the sternum.
10. The hyoid is a small U-shaped bone at the base of the tongue supporting the tongue and its muscles.
11. The horseshoe-shaped large intestine begins at the end of the ileum and ends at the anus.
12. Mitochondria are sausage-shaped bodies with a highly folded interior.
13. Smooth muscle consists of spindle-shaped cells 40-200 mm long and 4-20 mm thick with a central nucleus.
14. The scapula is a flat triangular-shaped bone, that has certain prominent processes.
15. Each tracheal cartilage is C-shaped. The closed portion of the C protects the anterior and lateral surfaces of the trachea. The open portion of the C faces posteriously, toward the esophagus.'

РАЗДЕЛ 17 Значения некоторых приставок

Упражнение 83

А. Найдите в предложениях слова с отрицательным значением, выраженным различными приставками: *ab-, dis-, поп-, ип-, il-, im-, in-, ir-.*

Определите, какой частью речи являются эти слова.

Б. Отбросив приставки, составьте антонимические пары слов и дайте их перевод.

Например: complete - incomplete
полный - неполный

В. Переведите предложения.

1. Connective tissue consists mainly of long fibers embedded in noncellular matter, the ground matter.
2. In surgical patients suffering from the condition there is frequently sudden and uncontrollable hemorrhage.
3. Many drugs produce some very useful action but have in addition some highly undesirable side action.
4. Crohn's disease is believed to be a genetic disorder, and is related in some way to an abnormal tissue response to an unidentified etiologic agent.
5. When a wound is extensive, with uneven edges, the repair cells are unable to pull the edges together.
6. The symptoms of chronic nephritis are often unpredictable, with great variations in different cases.
7. The goal of psychoanalysis is to uncover unconscious psychological patterns and enable the patient to discover the influence of these patterns in daily life.
8. Unfortunately there are no immediate solutions for preventing or reversing this form of progressive deafness.
9. A potential disadvantage of combined therapy is the possibility that antibiotics, when administered together, may actually interfere with each other's action.
10. The medication should never be discontinued abruptly for any reason.
11. The body in its normal processes regulates cell growth in an orderly manner. In
cancer, there is no regulation and cell reproduction and growth is disorderly.
12. When platelets encounter a leak in a blood vessel, they disintegrate and adhere to the edges of the injured tissue.
13. To homeopaths illness is seen as a sign of disharmony or imbalance in the body's normal working.
14. Congenital heart defects result from improper development of the heart and blood vessels during the prenatal period.
15. Some joints are immovable, such as certain fixed joints where segments of bone are fused together in the skull.

16. The amplitude of a pulse can range from totally impalpable to bounding and full.
17. If total adrenalectomy is necessary, the removal of both glands creates a serious and potentially fatal insufficiency of the hormones these glands produce.
18. The formation of the bladder stones results from incomplete emptying of bladder, with pooling of urine and inadequate elimination of wastes.
19. For centuries medicine and pharmacy were not independent.
20. Edema of the ankle is not infrequently observed in the severe anemias but its cause is not always apparent.
21. Galen ['geuan] (A.D. 130 — 200) made many valuable anatomic and physiologic observations on animals and applied many of them inaccurately to man.
22. Indigestible parts of the food pass into the large intestine.
23. Glucose intolerance due to insulin lack resulting from degeneration of the islets
of Langerhans is a late manifestation of chronic pancreatitis.
24. The connection between rheumatic fever and a previous streptococcal infection has been proved only indirectly.
25. Irregular slow waves, called delta waves, are normally found in deep sleep.
26. Amnesia victims usually have a good chance of recovery if there is no irreparable brain damage.
27. If the bone marrow is not irreparably damaged, the prognosis is good with proper treatment.
28. The complex network of innumerable and microscopically small capillaries distributed throughout the tissues supplies blood to all cells in the body.

Упражнение 84

А. Выпишите выделенные слова и найдите их перевод. Определите в них корень и приставку. Отбросив приставку, составьте пары однокоренных слов. Возле каждой пары напишите значение приставки.

Например: malnutrition - недостаточное питание
nutrition - питание (mal- - плохой, неправильный)

Б. Переведите предложения.

1. The presence of albumin in the urine indicates **malfunction** of the kidney.
2. The endocrine glands and enzymes are vital to the proper use of food by the body, and defects in their functioning may cause forms of **malnutrition.**
3. In medical and nursing practice, malpractice means bad, wrong, or injudicious treatment of a patient professionally.
4. A lack of vitamin D can cause rickets, which results in **malformed** limbs in infants because the bones fail to harden properly.

5. 90% of people infected with TB never show signs of the disease unless they become malnourished or immunosuppressed.
6. Anyone can become **undernourished** if he seriously neglects his diet.
7. **Overnutrition** disturbs metabolism in many ways. It often begins in infancy with the use of **overconcentrated** milk formulae laced with sugar.
8. **Overweight** children usually become **overweight** adults.
9. **Overindulgence** in alcohol does not alleviate anxiety but only makes it worse.
10. The major benefits obtained in treating diseases such as lymphoma, breast cancer
and multiple myeloma far **outweigh** the risks of developing a second malignancy.
11. Lay persons often are **misinformed** about the cause and effects of acne.
12. The primary aim in the treatment of metabolic alkalosis is to **reestablish** fluid and electrolyte balance.
13. To **reroute** the flow of blood around blockages in coronary arteries, surgeons
must graft other vessels (taken from the patient's chest and leg) onto the diseased vessel, past the obstructions.
14. Certain cells can **resynthesize** glucose.
15. A **premature** baby has little fat of any kind, and unless it is artificially kept warm its temperature quickly falls to a dangerous level.

РАЗДЕЛ 18 Внешне похожие слова, которые часто путают

Упражнение 85

А. Выпишите пары и группы внешне похожих слов и определите, в чём их различие в написании и по значению.

Б. Переведите предложения.

1. It is believed that prehistoric man suffered from **some** of the **same** dental diseases that afflict modern man.
2. Every human **being begins** life as a single cell no bigger that the dot above the letter "i".
3. In many **cases** the **cause** of pneumonia is bacterial.
4. The kidneys remove waste matter **from** the body in the **form** of urine.
5. The force **with which** blood pushes against the blood vessel wall is called the blood pressure.
6. a) The symptoms of brain tumor **vary.**
   b) The number of accessory glands and organs that empty secretions into the alimentary canal is **very** great.
7. a) This **effect** is sometimes boosted by ultraviolet light treatment,
   b) Many factors **affect** heartbeat and circulation.
8. a) Lack of vitamin A **affects** the body's growth and resistance to disease,
   b) Most **effects** on the circulation are indirect and complex.
9. a) Arterial pressure is also **affected** by the chemical composition of the blood,
   b) The movements of the eye-ball are **effected** by six small muscles.
10. a) It has long been **thought** that gastric ulcers are related to the production of acid.
    b) The human body has a **thorough** digestive system which performs chemical rearrangement of food.
    c) After food has been chewed, it passes **through** the esophagus into the stomach.
    d) Deep fascia is the **tough** fibrous tissue covering muscles, blood vessels, and nerves.
    e) **Though** the human body is composed of a vast number of individual units, these units must function together as a whole.

Тексты для тренировочного и контрольного перевода (к части 4)

1. Although there js no clear evidence that hypertension can be prevented by staying thin, keeping one's salt intake low, and eating a lot of green vegetables, and fruit

with high potassium content, it seems reasonable to pursue such a course especially if one is slightly obese and has a family history of hypertension.

2. As far as transplant surgery is concerned, man's best friend is the pig. Pig heart valves, for instance, can be used as replacements for human ones, while, in emergencies, pig skin has been grafted to deal with severe burns. Because pig
tissues are the nearest in chemical composition to those of man, they are not so readily rejected by the defence systems of the recipients' bodies as tissues from other animals.
3. When a muscle contracts many changes occur in it besides shortening. One change that is not obvious, but which can be demonstrated by suitable apparatus, is that it develops what is known as a "current of action". That part of a muscle which is contracting becomes negative to that part which is quiescent, and a current that can be measured by a galvanometer flows from one part to the other.
4. It is well to remember that all drugs can cause both wanted and unwanted effects on the body. The unwanted ones are called side effects, and these must be
balanced against the effects desired in determining if a particular drug will do
more harm than good. It is a fact that all drugs have the potential to be both
beneficial and harmful.
5. There are two types of bone: those that develop by replacing cartilage and those that form directly from connective tissue. The latter, which include the bones of
the cranium, are usually platelike in shape and form in the skin of the developing embryo. The cranium is moulded to the contours of the brain; it is the growth of the brain that determines the shape of the bones and not vice versa.
6. The most obviously unusual thing about blood is that it is a liquid, whereas other tissues of the body are solid or semisolid. The blood is divided into two parts: a
watery portion, the plasma, and the formed elements. It is the formed elements which give blood its viscosity. It is because the formed elements do not adhere to each other but float individually in the blood that blood remains fluid.
7. Since the number of red corpuscles in the blood stream remains fairly constant though they are being continually destroyed, it is obvious that they must be replenished from time to time. It is clear that it is not concentration of red blood cells in the blood that controls the rate of red cell production, but instead it is the functional ability of cells to transport oxygen to the tissues in relation to tissue demand for oxygen.
8. In bronchial asthma there is widespread narrowing of airways, varying over short periods of time either spontaneously or as a result of treatment, due in varying degree to contraction (spasm) of smooth muscle, edema of the mucosa, chronic or recurrent local inflammation of the submucosa with eventual fibrosis, and excessive mucus in the lumen of the bronchi and bronchioles; these changes are caused by the local release of spasmagens and vasoactive substances (e.g. histamine
or prostaglandins) in the course of an allergic process.

РАЗДЕЛ 19 Знаете ли Вы?

Упражнение 86

А. Вставьте следующие определения, характеризующие различные кости скелета:

flat	rectangular
long	small
narrow	triangular
quadrangular	wide

Б. Переведите предложения.

1. The calcaneus is the irregular ... bone at the back of the tarsus.
2. The coccyx is a small ... bone projecting beyond the sacrum.
3. The femur is the ..., strongest and heaviest bone of the body.
4. The lachrymal bones are the ... and most fragile bones of the face.
5. The patella is a small irregularly ... bone over the anterior aspect of the knee.
6. The ribs are 12 pairs of thin ... curved long bones, forming the posterior and lateral walls of the chest.
7. The scapula is a ... thin triangular bone in the upper part of the back.
8. The sternum is the elongated ... bone extending down the midline of the chest.

Упражнение 87

А. Вставьте следующие предлоги, чтобы точно описать расположение различных органов и частей тела человека:

above	between
around	in front of
behind	near
below	within

Б. Переведите предложения.

1. The abdomen is the space ... the body ... the diaphragm and ... the pelvis.
2. Adenoids are the lymph glands located in the throat ... the nose.
3. The ankle joint is formed where the top of the talus fits in ... the lower ends of tibia and fibula.
4. From its origin at the left ventricle, the aorta passes upward, curves ... the he art, and runs downward.
5. The brain is contained ... the cranium and constitutes the upper part of the
cerebro-spinal axis.
6. The duodenum forms a loop ... the head of the pancreas.
7. The forehead is the part of the face ... the eyes and ... the hair.

8. The gall-bladder is a hollow, pear-shaped organ located ... the liver in the right upper portion of the abdomen.
9. The hand is the section of the upper limb ... the wrist.
10. The heart is situated slightly to the left of the central part of the chest ... the lungs.
11. The lungs lie free ... the pleural cavities of the thorax except where they are attached at their roots.
12. The parathyroid glands are situated ... the thyroid.
13. The pancreas lies ... the stomach, except for its head, which lies ... the curve of the duodenum.
14. The spinal cord is the lower portion of the central nervous system which is situated ... the spinal column.
15. The spleen is the organ in the top part of the abdominal cavity ... the stomach.
16. The sublingual gland lies ... the tongue.
17. The kneecap is a small bone ... the knee joint.

Упражнение 88

А. Вставьте количественные характеристики размеров и функционирования различных органов, используя числительные, приведённые в скобках после каждого текста.

Б. Переведите на русский язык.

1. The phalanges are the bones of the digits: they are ... in number, ... for each
finger and ... for the thumb.

   (2; 3; 14)
2. The lungs inflate and deflate ... times per minute in adults, ... times per minute in teenagers, ... times per minute in ... year old and ... times per minute in newborns.

   (2-12; 12-20; 15-17; 20-30; 30-50)
3. Feet contain ... bones, ... muscles, ... ligaments, about ... sweat glands each and about ... nerve endings coming from all areas of the body.

   (19; 29; 115; 72,000; 250,000)
4. The skeleton makes up ... of total body weight, contains ... of the total calcium in the body, ... of the phosphate, ... of carbonate, ... of the citrate, ... of the magnesium,
... of the sodium, and ... of the water.

   (9%; 16%; 35%; 50%; 70%; 80%; 88%; 99%)
5. An average man contains about... litres of water (... per cent of body weight). The
cells contain ... litres. ... litres are in the plasma of the blood. The remaining ... fill the spaces between groups of cells. The ... litres of blood in the body can hold at

the most... litre of oxygen, which is enough to keep a man alive for ... minutes at rest or less than a minute during exercise.

(1; 3; 4; 5; 12; 30; 45; 70)

6. The body has over ... organs, ... joints, ... bones, ... nerves, ... arteries, ... muscles, as well as ... meters of gut and ... square meters of lung. Every cell carries ... genes on ... meters of DNA in ... chromosomes. There are ... inherited diseases and another ... acquired diseases. More than ... drugs are available to treat these
diseases.

(2; 8; 46; 50; 100; 105; 206; 400; 500; 600; 3,000; 10,000; 20,000; 50,000)

7. The human subject is provided, with ... sets of teeth, which make their appearance at different periods of life. The first set to erupt are the deciduous, or milk teeth. They are ... in number: ... incisors, ... canines and ... molars, in each jaw. They usually begin to appear about the age of ... months. The permanent teeth are ... in number: ... incisors (... central and ... lateral), ... canines, ... bicuspids, and ...
molars, in each jaw. They erupt between the ages of ... and ... years. In some cases, however, the last... permanent teeth, or wisdom teeth, may fail to erupt at
all.

(2 (5 раз); 4 (5 раз); 6 (3 раза); 18; 20; 32)

Ключи к некоторым упражнениям

Упр. 1

1-l	7-a	13-d
2-e	8-b	14-r
3-p	9-n	15-h
4-k	10-c	16-i
5-q	11-m	17-g
6-o	12-f	18-j

Упр. 8

1-g	*5-c*
2-a	6-e
3-f	7-b
4-d	

Упр. 11

1. are required, is present
2. have
3. occur, do not influence
4. developed
5. was discovered, was given
6. keeps, helps, build
7. are affected
8. is accompanied
9. exist
10. there are
11. is known
12. there is
13. requires, is provided
14. manufacture, result from

Упр. 40

1-f	6-b
2-j	7-g
3-d	8-a
4-e	9-h
5-i	10-c

Упр. 86

1. quadrangular
2. triangular
3. longest
4. smallest
5. rectangular
6. narrow
7. wide
8. flat

Упр. 87

1. in front of, below, above
2. behind
3. between
4. behind
5. within
6. around
7. above, below
8. below
9. below
10. between
11. within
12. near
13. behind, within
14. within
15. behind
16. below
17. in front of

Упр. 88

1) 14; 3; 2
2) 15-17; 12-20; 20-30; 2-12; 30-50
3) 29; 19; 115; 250,000; 72,000
4) 16; 99; 88; 80; 70; 50; 35; 9
5) 45; 70; 30; 3; 12; 5; 1; 4
6) 50; 100; 206; 400; 500; 600; 8; 105; 10,000; 2; 46; 3,000; 50,000; 20,000
7) 2; 20; 4; 2; 4; 6; 32; 4; 2; 2; 2; 4; 6; 6; 18; 4

Индекс

(приведены номера упражнений)