

Английский язык. Грамматический практикум для медиков. Ч. 1. Употребление личных форм глагола в научном тексте. Рабочая тетрадь

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Оглавление

| | |
|---|-----|
| ПРЕДИСЛОВИЕ | 3 |
| УСЛОВНЫЕ СОКРАЩЕНИЯ И ОБОЗНАЧЕНИЯ..... | 7 |
| РАЗДЕЛ 1 ГЛАГОЛ В АКТИВНОМ (ДЕЙСТВИТЕЛЬНОМ) ЗАЛОГЕ | 8 |
| РАЗДЕЛ 2 ГЛАГОЛ В ПАССИВНОМ (СТРАДАТЕЛЬНОМ) ЗАЛОГЕ | 87 |
| РАЗДЕЛ 3 МОДАЛЬНЫЕ ГЛАГОЛЫ..... | 106 |
| РАЗДЕЛ 4 ГЛАГОЛ В ПОВЕЛИТЕЛЬНОМ НАКЛОНЕНИИ (ПРЕДЛОЖЕНИЯ БЕЗ ПОДЛЕЖАЩЕГО) | 120 |
| ТЕКСТЫ ДЛЯ КОНТРОЛЬНОГО ПЕРЕВОДА К РАЗДЕЛУ 1 | 123 |
| ТЕКСТЫ ДЛЯ КОНТРОЛЬНОГО ПЕРЕВОДА К РАЗДЕЛУ 2 | 126 |
| ТЕКСТЫ ДЛЯ КОНТРОЛЬНОГО ПЕРЕВОДА К РАЗДЕЛУ 3 | 128 |
| КЛЮЧИ К НЕКОТОРЫМ УПРАЖНЕНИЯМ..... | 130 |

ПРЕДИСЛОВИЕ

Основная цель Грамматического практикума - сформировать у обучающихся умение понимать и переводить оригинальные англоязычные тексты по специальности с опорой на знание грамматических структур, характерных для медицинской научной литературы на английском языке.

Издание адресовано прежде всего студентам медицинских вузов, изучающим базовый двухгодичный курс английского языка. Пособие является частью учебнометодического комплекса, включающего: 1) базовый учебник для медицинских вузов «Английский язык» (М.: ГЭОТАР-Медиа, 2005; 2009), 2) Грамматический практикум для медиков (М.: ГЭОТАР-Медиа, 2009), 3) Практикум по устному профессиональному общению для медиков «International Scientific & Medical Conference» (Книга для студента, Книга для преподавателя, CD. - М.: Билингва, 2005), 4) Англо-русский медицинский словарь (М.: МИА, 2008). Учебно-методический комплекс создан под руководством И.Ю. Марковиной коллективом кафедры иностранных языков Московской медицинской академии им. И.М. Сеченова.

Грамматический практикум может использоваться при обучении аспирантов и соискателей в курсе подготовки к сдаче кандидатского экзамена по английскому языку. Пособие заинтересует также широкий круг специалистов-медиков, желающих свободно владеть навыками работы с англоязычной научной литературой, так как грамматический комментарий и специальные задания-инструкции к упражнениям позволяют использовать его и для самостоятельных занятий.

Пособие состоит из трех книг: «Употребление личных форм глагола в научном тексте», «Употребление неличных форм глагола в научном тексте», «Синтаксические особенности научного текста. Трудности перевода некоторых слов и конструкций». Каждая книга содержит несколько тематически организованных разделов, включающих упражнения (в том числе обзорного характера) и тексты для тренировочного и контрольного перевода.

Все грамматические темы представлены в практикуме так, чтобы обучающиеся смогли усвоить принципиальный «алгоритм» работы с иноязычным текстом, обеспечивающий правильное понимание и грамотный перевод оригинального материала на русский язык. С этой целью комментарий к темам приближен по форме к инструкции, в которой содержатся, во-первых, краткие сведения о грамматическом явлении, во-вторых, характеристика его формальных признаков в сочетании с иллюстрациями для обучения распознаванию данной конструкции в предложении (рубрика «Пример»); в-третьих, рекомендации по переводу на русский язык (рубрика «Например»). По аналогичному принципу построены задания-инструкции к упражнениям:

- краткие сведения о грамматическом явлении (если это необходимо);

- задание на поиск данного явления в английском предложении по формальным признакам (в качестве подготовки к переводу);
- сведения об англо-русских соответствиях применительно к изучаемой конструкции и рекомендации по ее переводу;
- задание на перевод.

Каждый раздел имеет одинаковую структуру: грамматический комментарий, упражнения (на перевод отдельных предложений), мини-тексты для тренировоч-

ного перевода, тексты для контрольного перевода (расположены в конце книги). Помещенный также в конце пособия «Индекс грамматических тем» предназначен для быстрого поиска упражнений, необходимых для отработки конкретного грамматического явления.

Аутентичные материалы, использованные в практикуме, отобраны таким образом, чтобы тематически представить широкий спектр научных областей, которые могут оказаться в сфере профессиональных интересов специалиста-медика: анатомия, биология, физиология, терапия, хирургия и др. В пособии сохранены особенности правописания и пунктуации оригинальных источников, что также способствует формированию представления о реально функционирующих в сфере письменного профессионального общения текстах.

Как работать с Грамматическим практикумом

Первая книга практикума включает четыре раздела: «Глагол в активном (действительном) залоге», «Глагол в пассивном (страдательном) залоге», «Модальные глаголы», «Глагол в повелительном наклонении (предложения без подлежащего)».

По форме пособие представляет собой рабочую тетрадь, которая предназначена как для изучения грамматических тем, так и для выполнения заданий по письменному переводу с английского языка на русский. Для этого после каждого предложения или мини-текста оставлено свободное место. Предполагается, что перевод может выполняться студентами и самостоятельно в качестве домашнего задания, и в аудитории. Варианты перевода обсуждаются и редактируются в аудитории с участием преподавателя. На каждой странице отведено также специально обозначенное место для заметок, где рекомендуем записывать термины, перевод отдельных словосочетаний, служебные и другие частотные слова, которые целесообразно запомнить. Упражнения в каждом разделе расположены по принципу от простого к сложному; по аналогичному принципу расположены предложения в каждом упражнении. Темы или упражнения повышенной трудности отмечены «звездочкой» (*) и

предназначены для углубленного изучения грамматических особенностей медицинского текста.

Все разделы заканчиваются заданиями на тренировочный перевод мини-текстов. Цель этого этапа - переход обучающихся на следующую ступень формирования умения понимать и переводить специальную медицинскую литературу. В заданиях к тренировочному переводу предлагается алгоритм работы уже не с отдельным предложением, а с мини-текстом. «Шаги», предшествующие собственно переводу, связаны друг с другом и логически подготавливают последующее действие. Очень важно выполнять предпереводческие действия в указанной последовательности:

- во-первых, опираясь на термины, интернациональную лексику, знакомые слова (для примера они отмечены в первых разделах пособия), определить общую тематику мини-текста;
- во-вторых, проанализировать структуру каждого предложения и обозначить его ядро;
- в-третьих, на основе представления о тематике текста и понимания структуры предложений найти в словаре значения незнакомых слов (для их записи отведено специальное место);
- в-четвертых, пользуясь сведениями, полученными на первом, втором и третьем этапах, выполнить черновой вариант перевода.

После обсуждения в аудитории и редактирования записывается окончательный перевод текста. Тренировочный перевод может выполняться как в классе, так и в качестве домашней самостоятельной работы с последующей проверкой на занятиях.

По завершении изучения каждой большой грамматической темы рекомендуется провести контрольное занятие. Итоговая работа выполняется студентами самостоятельно на специальных бланках с текстами для контрольного перевода, помещенных в заключительной части Рабочей тетради, и сдается преподавателю для проверки.

В заключение еще раз подчеркнем: особенностью данного учебного пособия являются включенные в каждое упражнение задания-инструкции, которые рекомендуем внимательно читать перед началом работы над переводом. Задания-инструкции способствуют формированию умения анализировать формальную структуру английского предложения в качестве обязательного этапа, предваряющего перевод. Важно также работать над переводом, как отдельных предложений, так и мини-текстов, в той последовательности, которая предлагается в задании-инструкции. Это позволит усвоить своеобразный «алгоритм» действий, обеспечивающий правильное понимание и адекватный перевод научного текста.

Практикум апробирован на занятиях со студентами 1-го и 2-го курсов, в группах аспирантов и соискателей в Московской медицинской академии им. И.М. Сеченова, а также в некоторых других медицинских вузах России.

Авторы

УСЛОВНЫЕ СОКРАЩЕНИЯ И ОБОЗНАЧЕНИЯ

adj - прилагательное *n* - существительное *v* - глагол

NV - ядро предложения (подлежащее и сказуемое)

Ns - подлежащее (существительное) во множественном числе

V - основная форма глагола

Vs - глагол-сказуемое в 3-м лице, единственном числе настоящего времени

Ved - глагол-сказуемое в прошедшем времени для правильных глаголов

V2 - прошедшее время

V3 - 3-я форма глагола (причастие II)

Ving - 4-я форма глагола (причастие I)

РАЗДЕЛ 1 ГЛАГОЛ В АКТИВНОМ (ДЕЙСТВИТЕЛЬНОМ) ЗАЛОГЕ

1.1. Общие сведения

Понимание английского предложения зависит от правильного определения его ядра (подлежащего и сказуемого), что важно для сохранения логического центра высказывания при переводе на русский язык.

Подлежащее обозначает либо субъект (исполнителя), либо объект действия. Если подлежащее обозначает исполнителя действия, то глагол-сказуемое имеет форму активного залога.

Сказуемое обозначает действие, свойство, состояние подлежащего и всегда выражается личной формой глагола. По структуре сказуемые делятся на простые, составные именные и составные глагольные.

1.2. Глагол *to be* в составном именном сказуемом

Составное именное сказуемое включает: 1) глагол-связку *to be* в личной форме (т.е. согласующуюся с подлежащим в лице и числе) и 2) именную часть (например, существительное или прилагательное). Форма глагола *to be* в составном именном сказуемом также указывает на время действия - настоящее, прошедшее или будущее.

Пример:

to be + n

The backbone *is a column* of 26 bones.

to be + adj

Biochemical systems *are dynamic*.

На русский язык глагол *to be* в структуре составного именного сказуемого может переводиться глаголами *являться, быть, представлять собой* или не переводиться (вместо глагола-связки ставят тире). Сочетание глагола *to be* с прилагательным нередко передается кратким прилагательным.

Например:

1. The backbone is a column of 26 bones.
Позвоночник представляет собой столб из 26 костей.
2. The bones of a child at birth are soft.
Кости новорожденного ребенка являются мягкими.
3. Genes are the factors responsible for inheritance.
Гены — (это) факторы, отвечающие за наследственность.
4. Genes are responsible for all hereditary characteristics.
Гены ответственны за все наследственные признаки.

Упражнение 1

I.

A Найдите в каждом предложении составное именное сказуемое, которое включает глагол *to be* (согласующийся в лице и числе с подлежащим) и именную часть: существительное или прилагательное.

B Переведите предложения. 1. A cell is the unit of life.

2. DNA is the basis for all life on Earth.

3. Muscles are the body's movers.

4. The elbow, hip, and wrist are movable joints.

5. The bones of a child at birth are soft and incomplete.

6. The nose with its two nostrils is the organ of smell.

7. The spinal cord is a downward extension of the brain.

8. The extinction of species is an irreversible process.

9. The major threat from global warming is its unpredictability.

10. The microbial world is extremely diverse.

11. A stable balance between acids and bases in the body is essential to life.

12. The lymphocytes are an essential part of the body's immune system.

13. Vitamins are essential nutritional factors.

14. Marine microorganisms are the food of a large number of marine animals.

15. Vegetable oils are abundant sources of vitamin E.

16. The first living things on the earth were probably bacteria and other primitive organisms.

17. The microscope was a new tool of discovery in the 17th century.

18. Ancient people were familiar with the biological activities of many substances.

А Следует учитывать, что правила перевода с английского языка на русский (см. п. 1.2) являются общими рекомендациями. Нередко контекст и объективные различия между языками требуют формулирования содержания предложения в соответствии со спецификой подязыка медицины и нормами русского языка.

Например:

The skin is new every month.

Кожа обновляется каждый месяц.

Б

Переведите предложения, в которых контекст требует особого варианта перевода.

1. Biochemical systems are dynamic.
2. The surface of the skin is dead.
3. Human health is dependent on a good environment.
4. The pupils are large in darkness and small in bright light.
5. The stomach is stretchable and expandable.
6. No vaccine is currently available for malaria.

Упражнение 2

Используя фрагменты предложений из трех колонок, составьте определения (дефиниции) медицинских терминов, при этом форма глагола *to be* должна быть согласована с числом существительного-подлежащего.

Пример:

The ankle is the joint of the leg.

The lungs are the two organs inside the chest.

В

приведенной ниже таблице ответов номерами 1-18 обозначена первая часть дефиниций (термин) (графа I). Проставьте во второй графе таблицы (II) соответствующую личную форму глагола-связки *to be*, а в третьей графе (III) - букву, которой обозначена заключительная часть дефиниции.

Таблица ответов

| | | | | | | | | | | | | | | | | | | |
|--|-----------|--------------------------|---|--|---|---|---|---|---|----|------------|----|----|----|----|----|----|----|
| I | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| II | <i>is</i> | | | | | | | | | | <i>are</i> | | | | | | | |
| III | <i>b</i> | | | | | | | | | | <i>m</i> | | | | | | | |
| I. Первая часть дефиниции (термин) | | II. Глагол- связка | | III. Заключительная часть дефиниции | | | | | | | | | | | | | | |
| 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 10. The liver 11. The lungs 12. The mouth 13. A muscle 14. The skeleton 15. The skull 16. The teeth 17. The tongue 18. The wrist | | is/are | | a) the part of the body which has eyes, mouth and brain in it. b) the joint where the foot joins the leg. 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. i) the hard, white objects in the mouth that are used for biting and chewing. j) the part of the body between the hand and arm which bends when the hand is moved. k) the part in the middle of the arm where it bends. l) the organ in the chest that pumps the blood around the body. 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. | | | | | | | | | | | | | | |

Упражнение 3

А В следующих предложениях составное именное сказуемое выражено глаголом-связкой *to be* и прилагательным в сравнительной степени (*adj+er, more/less + adj*) или в превосходной степени (*adj+est, most/least + adj*).

Пример:

The epidermis is thinner than the dermis.

A ventricle is more muscular than an atrium.

The skin on the foot's sole is the thickest in the body.

Б Найдите составное именное сказуемое (прилагательное в структуре сказуемого может иметь уточняющее наречие), определите степень сравнения прилагательного и переведите предложения.

1. The epidermis is thinner than the dermis.
2. Veins are less muscular than arteries.
3. A ventricle is more muscular than an atrium.
4. The male is generally more muscular than the female.

5. The dermis is much thicker than the epidermis.
6. The skin on the foot's sole is the thickest in the body.
7. The right renal artery is longer and a little lower than the left.
8. Metabolism is more active in the young than in the adult.
9. Ice is about one tenth less dense than water.
10. Inspiration is slightly shorter than expiration.
11. The right lung is slightly wider, shorter, and taller than the left.
12. The white cells are usually larger than the red cells.
13. Some drugs are much more dangerous than others.
14. Veins are much more variable in location and distribution.
15. Viruses are structurally much simpler than bacteria.
16. The facial bones are smaller and more complex than the cranial bones.
17. Of the inorganic compounds of living systems, water is without doubt the most abundant and important.
18. The two ventricles are much more muscular than the left atrium and the right atrium.

Упражнение 4

А В следующих предложениях найдите прилагательные в превосходной степени (*adj+est, most/least+adj*), которые выполняют функцию определения существительного в структуре составного именного сказуемого.

Пример:

The liver is the largest internal organ.

Bacteria are the most abundant organisms on the Earth.

Б Переведите предложения.

1. The skin is the largest organ of the body.
2. The cell is the smallest biological unit.
3. Sight is our most dominant sense.
4. Proteins are the most important builders in the body.
5. Malignant melanoma is the worst of the three types.
6. The knee is the largest and most complex joint in the body.
7. The stomach is the widest and most elastic part of the alimentary canal.
8. The nature of the pain is the best guide to the diagnosis.
9. Aristotle (384-322 BC) was one of the best naturalists of all times.
10. For the early biologists, the physical similarities between organisms were the most important feature.

11. Physicians in Ancient Egypt were undoubtedly the best doctors of the day.

12. The liver is the largest gland in the human body and one of the most complex of all human organs.

1.3. Глагол *to be* с формальным подлежащим *there* (конструкция *there is/there are*)

В конструкции *there + be* формальное (т.е. неперебиваемое) подлежащее *there* вводит реальное (т. е. смысловое) подлежащее, от которого зависит форма глагола *to be* (*is* - ед. ч. наст. вр.; *was* - ед. ч. прошед. вр.; *are* - мн. ч. наст. вр.; *were* - мн. ч. прошед. вр.).

Пример:

There are many kinds of matter.

There is a considerable amount of elastic tissue in the arterial wall.

На русский язык конструкция *there + be* обычно переводится глаголами *существует, имеется, содержится*. Если в предложении есть обстоятельство, перевод рекомендуется начинать с этого обстоятельства.

Например:

1. There are many kinds of matter.

Существует много видов материи.

2. There is a considerable amount of elastic tissue *in the arterial wall*.

В стенках артерий находится большое количество эластической ткани.

Упражнение 5

А Найдите конструкцию *there + be* и реальное подлежащее каждого предложения.

Б Переведите предложения.

1. There are more than 1 trillion molecules in a cell.

2. There are about 100,000 genes in a human body.

3. In the plasma, there is a soluble protein, fibrinogen.

4. There are at least 2,000 species of bacteria.

5. In the colon there are large numbers of bacteria.

6. At the end of the esophagus there is a muscular valve, or sphincter.

7. There are many different kinds of white blood cells.

8. Without oxygen there is no life.

9. There are many types and many causes of nephritis.

10. There are over 50 billion cells in every adult human being.

11. There is no water on the surface of Mars today.
12. There is a constant passage of material through the membrane of the cell.
13. There are significant differences between arterial and venous blood.
14. There is a difference in the thickness of the walls of the right and left ventricles.
15. There are more veins than arteries in the body, but they are less muscular than arteries.
16. There is one kidney on each side of the spinal column.
17. Under the epithelial lining, there are various amounts of lymphoid tissue.
18. There is always a small quantity of gastric juice present in the stomach.
19. In a stressful situation, there is an increase in the secretion of hormones.
20. There are more nerve cells in the digestive system than in the peripheral nervous system.
21. Every day of our lives there is a constant battle between our bodies and a multitude of microbes.
22. There was a lot of important research last year.
23. During the Middle Ages there were major epidemics of plague.
24. For centuries there was little thorough assessment of medical treatments.
25. In the 19th century there were several theories about the causes of sickness.

1.4. Глагол в настоящем простом (неопределенном) времени

В английском языке существует несколько форм настоящего времени глагола. Сказуемые, выраженные формой глагола *в настоящем простом (неопределенном) времени*, обозначают обычные, регулярные действия или сообщают факты.

При поиске подлежащего и сказуемого (т.е. ядра), что необходимо для правильного понимания английского предложения, следует опираться на порядок слов (в утвердительном предложении подлежащее предшествует сказуемому), а также на формальные признаки глагола:

- глагол-сказуемое в настоящем простом времени согласуется с подлежащим в лице и числе;
- глагольное окончание *-s/-es* указывает на подлежащее, выраженное существительным в 3-м лице единственного числа;
- отсутствие окончания у глагола указывает на множественное число подлежащего, которое имеет окончание *-s/-es* или особую форму;
- отсутствие окончания у глагола также может указывать на 1-е или 2-е лицо подлежащего в единственном числе.

Пример:

N V_s
A skeletal **muscle contracts** only under stimulation.
N_s V V
Muscles **contract** and **relax**.

Упражнение 6

А Опираясь на приведенные выше формулы, иллюстрирующие грамматическое согласование подлежащего (в единственном или множественном числе) и сказуемого в соответствующем числе (в настоящем времени), найдите и подчеркните ядро в следующих предложениях.

Б Переведите предложения.

1. The liver regulates the concentration of glucose in the blood.
2. The kidneys regulate the amount of water in the blood.
3. Blood reflects changes in the activities of organs of the body.
4. The action of sunlight on the skin changes certain substances in the body into vitamin D.
5. Individual nutritional requirements vary.
6. Skin varies in thickness over the surface of the body.
7. Feet bear the body's weight.
8. Skin becomes drier with the years.
9. The skin totally renews itself every month.
10. Mineral salts give bone hardness.
11. The dermis gradually thins after the age of 25.
12. Epithelial tissues line hollow structures.
13. A serous membrane lines the pericardium, the sac around the heart.
14. The internal ear houses the organs essential for hearing and equilibrium.
15. The skull houses and protects the delicate brain, and the main sensory organs.
16. Identical twins share all their genes; fraternal twins share only half.
17. Women have a better sense of smell than men.

18. The right hemisphere of the brain processes visual information.
19. Arteries snake out through the whole body.
20. In bright light the pupil contracts and does not let much light through.
21. Lack of sufficient insulin results in diabetes.
22. Disturbances of the acid-base balance result in acidosis or alkalosis.
23. The complex organization of the brain begins before birth, continues in childhood and is structurally mature by late adolescence.
24. In old people, bones contain less calcium and break more easily.
25. In certain primitive organisms, maleness and femaleness do not occur.
26. The smaller bronchioles have no cartilage; they are just muscular tubes.
27. The normal frequency of respiration of adults ranges from 16 to 20 per minute at rest.
28. Bones range in size from the smallest bone, the stapes in the middle ear, to the longest bone in the body, the femur, or thighbone.
29. Blood contains fewer white cells than red cells, but the white cells are usually larger than the red cells.
30. A benign neoplasm does not metastasize to distant sites.

Упражнение 7

А В зависимости от формы существительного-подлежащего (единственного или множественного числа) выберите правильную форму глагола-сказуемого.

Б Переведите предложения.

1. The synthesis of proteins (*occur/occurs*) at numerous ribosomes within the cell.
2. Low levels of sugar in the blood (*interfere/interferes*) with the function of many organ systems.
3. The subatomic particles of an atom (*carry/carries*) a positive or a negative charge, or no charge.
4. Most smooth muscles (*act/acts*) automatically under control of the nervous system.
5. The pulmonary function of the lungs during pneumonia (*change/changes*) in different stages of the disease.
6. The chemical reactions of metabolism (*occur/occurs*) in sequences.
7. All of the activities of a living organism (*use/uses*) energy.
8. Humans (*share/shares*) the planet with many other living species.
9. Movement of fluids (*wash/washes*) the surfaces of various tissues of the body.

10. Disturbances in the function of the pancreas (*produce/produces*) digestive disorders.
11. Nuclear membrane (*form/forms*) the boundary of the nucleus.
12. The electrical events throughout the heart (*initiate/initiates*) and (*regulate/regulates*) contraction.
13. Most drugs (*exert/exerts*) most of their effects on a specific organ or system.
14. Millions of hair (*cover/covers*) most parts of the body.
15. The complex network of small capillaries (*supply/supplies*) blood to all cells in the body.
16. The formation and destruction of red blood cells (*take place/takes place*) continuously.

Упражнение 8

А Найдите и подчеркните ядро в следующих предложениях, в которых подлежащие выражены существительными, образующими форму множественного числа по правилам латинского или греческого языков (форму числа существительного можно определить по форме глагола-сказуемого).

Пример:

- The bacillus is a bacterium of a certain form.
Bacilli are responsible for many serious diseases.
- Each vertebra consists of two main parts: the body and the vertebral arch.
The five lumbar vertebrae lie in the lowest part of the back.

- Б Переведите предложения. 1. Bacteria are vital.
2. Bacteria cause disease.
 3. This bacterium is very sensitive to the lack of water.
 4. Each nucleus contains one or more nucleoli.
 5. Atomic nuclei contain a mixture of protons and neutrons.
 6. Each alveolus is a tiny little pocket of air.
 7. The pulmonary alveoli contain networks of extremely small vessels.
 8. Each atrium opens into the ventricle through a valve.
 9. The atria are the upper chambers of the heart.
 10. Bronchi branch into smaller and smaller tubes.
 11. Each bronchus divides into bronchial tubes.
 12. A cilium is a fine, thread-like hair from the surface of a cell.
 13. Cilia line the upper airways and protect against infection.
 14. The alga is a simple plant without root, stem or leaves.
 15. Algae range in size from single cells to plants many meters in length.

16. A mitochondrion is an important cytoplasmic organelle.
17. Mitochondria generate energy for the cell's activities.
18. The analysis involves several steps.
19. Chemical analyses of various substances in the blood are invaluable aid in the prevention of disease.
20. Amoebae are the type of unicellular animal.
21. Under a microscope ameba appears as a shapeless bit of jelly with one or more spots (the nuclei) inside it.
22. The glomerulus is an integral part of the nephron, the basic unit of the kidney.
23. The glomeruli contain receptors for a number of hormones.
24. Pili are short hair-like projections of certain bacteria.
25. A pilus is one of the minute filamentous appendages of certain bacteria.
26. The vertebrae form a column of bones in the spine.
27. Numerous intestinal villi line the small intestine.
28. Sensory stimuli follow neural paths from the sensory organ to specific areas in the brain.

Упражнение 9

А Выберите соответствующую форму существительного-подлежащего, определив его число по форме сказуемого.

Б Переведите предложения.

1. (*Bacterium/Bacteria*) show a number of different shapes and forms.
2. (*Bacterium/Bacteria*) have far fewer genes than animals and plants.
3. The (*nucleus/nuclei*) of radioactive atoms emit alpha or beta rays.
4. Each (*villus/villi*) has a network of capillaries.
5. Each bacterial (*flagellum/flagella*) consists of a single tube-like filament.
6. The (*pneumococcus/pneumococci*) has its special effect on the lungs.
7. The seven cervical (*vertebra/vertebrae*) are the smallest in the vertebral column.
8. Small (*embolus/emboli*) plug pulmonary arteries.

9. Like the streptococci, some (*staphylococcus/staphylococci*) secrete enzymes and toxins.

10. (*Reticulum/Reticula*) is a small network of tubules, vesicles, or sacs in cells.

11. (*Paralysis/Paralyses*) results from damage to parts of the nervous system.

Упражнение 10

А Поставьте глаголы, данные в скобках, в правильную форму. Для этого определите, в каком числе (единственном или множественном) употребляется существительное-подлежащее.

Б Переведите предложения.

1. Bacteria _____ vitally important in the decomposition of all organic

material. (*to be*)

2. Some bacteria _____ toxic proteins. (*to secrete*)

3. The staphylococci _____ responsible for many serious infections. (*to be*)

4. The cilia _____ a series of hollow cylinders, microtubules, and _____ with upward wave-like motion. (*to consist of, to move*)

5. Each bronchus _____ its lung. (*to enter*)

6. The bronchi _____ into smaller tubes, bronchioles. (*to divide*)

7. Alveoli _____ only of a thin layer of epithelial cells. (*to consist*)

8. A mitochondrion _____ an interior membrane and an outer membrane. (*to have*)

9. Mitochondria _____ in shape and size. (*to vary*)

10. Bursae _____ fibrous sacs in the elbow, knee, and shoulder. (*to be*)

11. Every second species of vertebrate on the planet _____ a bony fish. (*to be*)

12. The atria in the heart _____ blood from veins. (*to receive*)

13. Like the bacteria, the fungi _____ extremely diverse. (*to be*)

14. Some fungi _____ spores. (*to produce*)

15. A flagellum _____ a long, mobile appendage at the surface of a cell. (*to be*)

16. Streptococci _____ in chains. (to grow)
17. These criteria _____ equally appropriate in evaluation of resources. (to be)
18. The pneumococcus _____ pneumonia. (to produce)
19. Intestinal bacilli _____ a large family of microbes. (to be)
20. A villus _____ a small vascular process from the free surface of a membrane. (to be)
21. The glomeruli _____ from the blood the non-protein portion of plasma. (to filter)
22. The left atrium of the heart _____ blood from the pulmonary veins. (to receive)

Упражнение 11

А Проанализируйте предложения и определите, какое существительное заменяется союзом *which/that* (выполняющим функцию подлежащего в придаточном предложении): глагол-сказуемое, стоящий после союза, имеет или не имеет окончание *-s/-es* в зависимости от числа существительного, которое заменяется ЭТИМ союзом.

Пример:

Muscles are **machines** *that convert* chemical energy into mechanical energy.
 The pancreas produces **insulin**, *which controls* the use of sugar.

Б Переведите предложения.

1. The cytoplasm is a clear gel-like substance that surrounds the nucleus.
2. The trachea divides into right and left main bronchi which go to the lungs.
3. Salivary glands produce saliva, a liquid that protects the delicate membranes and mixes with food in the first step of digestion of food.
4. The inner ear contains the semicircular canals, which are essential to the sense of balance.
5. The mucous component of saliva is a sticky substance that lubricates the food.
6. Most fungi produce spores that enhance their survival under conditions of low moisture, high temperature, or lack of nutrients.
7. There are a number of uncommon conditions that result from defects in the immune system.
8. Enzymes are the biological catalysts that regulate chemical reactions inside cells.
9. The heart is primarily a pump that pushes the blood through the blood vessels.
10. The digestive system develops embryologically as a straight tube that enlarges, twists, and contorts at various locations.

11. The body is under constant threat of microorganisms that cause diseases.
12. Epithelial cells secrete mucus that forms a protective barrier between the cells and stomach acids.
13. There are many different types of cells in the body which do different jobs.
14. Vitamins are organic compounds that serve a variety of functions.
15. The nerves that radiate from the spinal cord to the rest of the body make up the peripheral nervous system.
16. Drugs that target specific cancers already exist for several types of cancer.
17. The part of the body which needs most sleep is the brain.
18. The bronchial arteries, which branch from the aorta, supply the lungs with oxygen.
19. Gene is a section of DNA that controls the production of protein.
20. Cartilage is a tough, flexible tissue that is softer than bone.

Упражнение 12

А Поставьте глаголы, данные в скобках, в правильную форму; для этого определите, какое существительное заменяется союзом *which/that*: в зависимости от числа существительного, которое заменяется этим союзом, глагол-сказуемое в придаточном предложении будет иметь или не иметь окончание *-s/-es*.

Б Переведите предложения.

1. The cranium forms the bony cage that (*to enclose*) _____ the brain.
2. The human body consists of trillion of cells that (*to vary*) _____ in size and shape.
3. Healthy joints contain a fluid which (*to protect*) _____ the bones within them.
4. There are eleven pairs of intercostal muscles that (*to occupy*) _____ the spaces between the 12 pairs of ribs.
5. Pancreatic juice contains enzymes which (*to complete*) _____ the breakdown of food.
6. A gene is a piece of DNA that (*to encode*) _____ a molecule of protein.
7. The aorta branches into arteries that (*to distribute*) _____ blood to all parts of the body.
8. The heart possesses a fibrous skeleton that (*to surround*) _____

_____ and (to *strengthen*) _____

many of its openings.

9. There are several types of leucocytes which (to *carry out*) _____ their protective functions in different ways.

10. The nerves that (to *innervate*) _____ the various muscles of the back arise from the segmental spinal nerves.

11. The bacteria that (to *cause*) _____ pneumonia most frequently enter the lungs with air.

1.5. Члены предложения и части речи

1.5.1. Переход слова из одной части речи в другую (конверсия)

В английском языке одно и то же слово может являться как существительным, так и глаголом, что в словаре обозначается буквами *n* - существительное, *v* - глагол.

Пример:

effect I [ɪ'fekt] *n* 1 действие, влияние; 2 результат

effect II [ɪ'fekt] *v* производить, выполнять, осуществлять

increase I [ɪn'kri:s] *n* увеличение, возрастание, рост

increase II [ɪn'kri:s] *v* увеличивать(ся), повышать(ся)

При анализе структуры предложения (т.е. при выявлении ядра) часто бывает необходимо отличить существительное от глагола, так как их формы могут совпадать (см. приведенный выше пример). Установить различие между частями речи можно по следующим признакам.

Существительное:

- может выполнять в предложении функцию подлежащего, дополнения, обстоятельства;
- как правило, имеет артикль (*a/an, the*);
- может иметь определение, выраженное прилагательным, местоимением, другим существительным;
- может иметь предлоги;
- во множественном числе обычно имеет окончание *-s/-es*. *Глагол:*
- выполняет в предложении функцию сказуемого;
- согласуется в лице и числе с подлежащим, на что указывает наличие или отсутствие окончания *-s/-es* (ед. ч., 3-е л.) в простом настоящем времени;
- может иметь дополнение.

Например:

1. This drug exerts its effect (*существительное: имеет определение, является дополнением*) on the specific organ. — Это лекарство оказывает действие на определенный орган.
2. Six small muscles effect (*глагол: является сказуемым, согласуясь в числе с существительным-подлежащим, имеет дополнение*) the movements of the eye-ball. — Шесть маленьких мышц осуществляют движение глазного яблока.

Упражнение 13

А Проанализируйте предложения и определите, какую функцию выполняет выделенное слово и какой частью речи оно является.

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

В Переведите предложения.

1. a) Hemoglobin is responsible for the transport of oxygen around the body.
b) Erythrocytes transport oxygen to the tissues.
2. a) A major use of nitrous oxide (N₂O) is in anesthesia.
b) Through metabolism, cells capture, store, and use energy.
3. a) The body uses cholesterol for production of vitamin D and bile.
b) This potent stimulant has some medical uses, particularly as an anesthetic.
4. a) Many enzymes have different forms in different organs.
b) Cartilage forms the major part of bone in the very young.
5. a) By their union, the hepatic and cystic ducts form the bile duct.
b) The body changes carbohydrates into fats and stores them in that form.
6. a) Bones have different shapes.
b) The framework of hard bones, bendy cartilage, and tough ligaments supports and shapes the body.
7. a) Two principal groups of enzymes occur in plants.
b) A modern biologist usually groups animals together in the biological kingdom «Animalia».
8. a) All countries face future environmental challenges.
b) Usually the paralysis involves only one side of the face.
9. 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.

10. a) The heart functions as an effective pump.
b) The blood is a fluid tissue with many different functions.
11. a) The number of molecules changes during many reactions.
b) These lymphocytes undergo certain changes in the thymus.
12. a) During growth, the shape and size of bones change.
b) Nearly all chemical reactions involve a change in energy.
13. a) Water and waste form urine.
b) The eyes water in response to dryness and irritation.
14. a) The center in the medulla oblongata coordinates respiratory muscles.
b) Cellular responses center around the activities of T-lymphocytes.
15. 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.
16. a) Growth in height occurs as a result of maturation of the skeleton.
b) Hormonal deficiencies usually result in metabolic disturbances.
17. a) The cranium is the house for the brain.
b) In their central hollows, the 29 vertebrae house the spinal cord.
18. 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.
19. 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.
20. a) A hormone travels through the bloodstream and exerts influence on cells, tissues, and organs.
b) Many factors influence the activity of the body.
21. a) Parts of the body range from large tough bones and joints to fragile, tiny nerves and vessels.
b) Activities such as yoga promote the full range of movement of joints and encourage maximum flexibility.
22. a) Different types of melanin produce different colours of hair.
b) The brown pigment melanin colours the skin and filters out harmful ultraviolet rays in sunlight.

23. a) Proteins make up about 12 per cent of the weight of the human body.
b) Water can have in its chemical make-up some substances harmful to a man.

1.5.2. Значения предлогов

Предлог - это служебное слово, которое занимает место перед существительным и служит для связи слов в предложении. В английском языке предлоги заменяют отсутствующие падежные окончания существительных. (В русском языке отношения между словами передаются падежными окончаниями и предлогами, в английском языке - только предлогами и порядком слов.)

Например, предлог *of* чаще всего передает значение русского родительного падежа: *the body of a man* = *тело человека*; предлог *by* указывает на отношения, выражаемые в русском языке творительным падежом: *by cells* = *клетками*.

Однако между английскими и русскими предлогами нет прямого соответствия, поэтому при переводе сочетания существительного с предлогом следует подбирать русский эквивалент, учитывая многозначность английских предлогов и опираясь на контекст.

Например, в зависимости от контекста предлог *in* может указывать:

- 1) на место (*in the chest* - в грудной полости);
- 2) на время (*in a minute* - в/за или через минуту);
- 3) на физическое или душевное состояние кого-либо (*to be in good/bad health* - быть здоровым/больным);
- 4) на обстоятельства (*in detail* - подробно, в деталях);
- 5) на степень или объем (*in large quantities* - в большом количестве) и др.

Упражнение 14

А Выпишите из словаря значения приведенных ниже предлогов (некоторые из них могут иметь несколько значений).

| | |
|-------------|-------------|
| about | inside |
| along with | in spite of |
| among | into |
| around | near |
| as | of |
| at | on |
| because of | over |
| before | per |
| between | through |
| by | throughout |
| by means of | to |
| despite | under |
| due to | underneath |
| during | via |
| for | with |
| from | within |
| in | without |

Б

Переведите предложения, содержащие приведенные в таблице предлоги. 1. Most of the ear is deep *inside* the head.

2. No glands are present *in* the pelvis.
3. Only skeletal muscle is *under* our conscious control.
4. The heart is *at* the center of the circulatory system.
5. The control of respiration is *by* chemical and nervous stimuli.
6. The oral cavity is the site *of* abundant bacterial growth.
7. The epidermis is a protective outer layer *without* blood vessels.
8. The liver is an important site *for* the storage and metabolism of vitamins and hormones.
9. The diffusion of gases *through* the respiratory membrane is essential to normal respiration.
10. The ulna is the thinner and longer bone in the forearm, *on* the side opposite *to* the thumb.
11. *Underneath* the epidermis is the thicker part of the skin, the dermis.
12. Bones serve *as* levers for muscular action.
13. The pulmonary valve guards the orifice *between* the right ventricle and the pulmonary artery.
14. *In spite of* years of research, there are no vaccines for common cold.
15. *Among* living things there is great diversity - in size, shape, adaptive characteristics, and so forth.
16. *During* the development of certain diseases, there is often interplay between genetic and environmental factors.
17. The body changes carbohydrates *into* fats.
18. The levels of sugar in the blood vary normally *throughout* the day.

19. The skull articulates *with* upper part of the vertebral column.
20. Our senses provide accurate information *about* the position of our body parts.
21. Separation of blood *from* its usual environment immediately initiates biochemical processes.
22. The complex organization of the brain begins *before* birth.
23. Total deprivation of the supply of oxygen to the body causes death *within* minutes.
24. From the capillaries the blood returns to the heart *via* the veins.
25. Each bronchus enters the hilum of the lung *along with* the pulmonary artery and vein.
26. Blood is the fluid that circulates *around* the body.
27. Adults laugh an average of only 15 times *per* day.
28. The cells of the brain function *by means of* electrical impulses.
29. Loss of bone mass *due to* osteoporosis produces characteristic changes in the curvature of the spine.
30. The muscles in an athlete's arm grow larger *because of* constant exercise.
31. Cilia beat rhythmically and move fluid *over* the surface.
32. A bone grows *in* width *through* the action *of* osteoclasts.
33. Eight bones form the cranium *around* the brain; 14 facial bones form the skeleton *of* the face.
34. Bones are *at* their densest and toughest *near* the outside, where they bear the most stress.
35. *Despite* their hard outer surface, teeth are very much alive.

Тексты для тренировочного перевода к упражнениям 1-14

Выполните задания в следующей последовательности:

А Просмотрите мини-тексты и сформулируйте в одном предложении, о чем говорится в каждом из них. В мини-текстах 1-4 отмечены слова, которые помогут составить самое общее представление о содержании текстов. В остальных попробуйте найти такие слова самостоятельно.

Б Прочитайте каждое предложение в мини-тексте, найдите и подчеркните его ядро. Начните с глагола-сказуемого, который должен иметь *личную форму* в настоящем простом (неопределенном) времени.

В Опираясь на тему, контекст и структуру предложения, выпишите из словаря подходящие значения всех незнакомых слов.

Г Переведите тексты.

Пример выполнения заданий к мини-текстам

Текст. The tongue is the largest bundle of the skeletal muscle on the floor of the mouth. It is one of the body's most mobile muscles.

А Просмотрите мини-текст и сформулируйте в одном предложении, о чем в нем говорится.

Дается характеристика языка как скелетной мышцы. Б

Прочитайте каждое предложение, найдите и подчеркните его ядро.

The tongue is the largest bundle of the skeletal muscle on the floor of the mouth. It is one of the body's most mobile muscles.

В Выпишите из словаря подходящие по контексту значения всех незнакомых слов.

| английское слово | перевод/значение |
|-----------------------------------|--------------------------|
| 1. <i>tongue</i> | – язык |
| 2. <i>bundle</i> | – узел, пучок |
| 3. <i>floor</i> | – дно, основание |
| 4. <i>mouth</i> | – рот, ротовая полость |
| <i>mouth floor (мед. словарь)</i> | – <i>дно полости рта</i> |

Г Переведите текст.

Язык является самым крупным пучком скелетной мускулатуры (который располагается) на дне ротовой полости. Это одна из наиболее подвижных мышц тела.

* * *

Текст 1. The diaphragm is a muscular partition that separates the thoracic and abdominal cavities. It also assists with breathing.

A

B Прочитайте каждое предложение, найдите и подчеркните ядро.

B

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст 2. The aorta branches into arteries. The smallest arteries branch into numerous tiny capillaries. Capillaries channel oxygen and blood to tissues.

A

B Прочитайте каждое предложение, найдите и подчеркните ядро.

B

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст 3. The roles of the four basic types of tissue are: epithelial tissues cover; connective tissues support; muscle tissues move; and nervous tissues control.

А

Б Прочитайте предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



Текст 4. The ear is an extremely sensitive detector. Constant overload brings deterioration in its performance. The audible range of the normal human ear varies with age.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

5. Vitamins are very important for the body. There are more than 13 kinds of vitamins. The need for certain vitamins increases with fever, some diseases, heavy exercise, and pregnancy.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

6. Flagella are long thread-like extensions from the surface of a cell, similar to cilia. The unicellular organisms *protozoa* use flagella for locomotion.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

7. The bladder is the most common site of malignancy of the urinary system. It affects men more frequently than women, and it occurs most frequently in persons over the age of 50.



Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



Текст

8. The middle layer in smaller arteries is almost entirely muscular and in larger arteries is more elastic. The thickness of the outer layer varies with the location of the artery.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

9. During early childhood, the brain and the head grow more rapidly than any other parts of the body. The top parts of the head, the eyes, and the brain grow faster than the lower portions, such as the jaw.

A

B Прочитайте каждое предложение, найдите и подчеркните ядро.

B

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

10. There are four chambers in the heart, two atria and two ventricles. The atria in the heart receive blood from the veins. At each heartbeat the two atria expel their contents into the ventricles.

A

B Прочитайте каждое предложение, найдите и подчеркните ядро.

B

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

11. Air enters the body through the nose and mouth. The air then travels through the trachea or windpipe. Then, the air enters two bronchial tubes, one for each lung. Each bronchial tube branches into smaller tubes. Eventually the air reaches tiny sacs, alveoli.



Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



Текст

12. Arteries lie deep in tissues, except at the wrist, at the temple, and along the sides of the neck. Veins lie closer to the surface of the skin and the blood in them is much darker in color and flows more evenly than in arteries.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

B

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

13. Beneath the periosteum is a bony layer which contains the deposits of mineral matter. This layer varies in hardness from an extremely hard material in the middle region to a porous and spongy material at the ends.

A

B Прочитайте каждое предложение, найдите и подчеркните ядро.

B

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

14. The human body is about 60 percent water, an amount that varies with age, sex, and the proportion of muscles and fat. Infants have the largest percentage of water in their bodies; men have more than women, and athletes more than non-athletes. Every function in the body uses water.



B Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

15. At the most basic level, the human body is a collection of atoms. It is not a random collection; the atoms (carbon, hydrogen, oxygen and many other elements) make up molecules such as sugars, proteins, oils and, of course, the molecule that holds the code for the body itself - DNA.

A

B Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

16. The lungs communicate with the atmosphere through the trachea, which opens into the pharynx. The trachea divides into two bronchi, which enter the lungs and branch into bronchioles. The right bronchus is wider and shorter than the left bronchus. The left bronchus is smaller in diameter. Bronchioles divide further and terminate in minute air sacs, the sites of gaseous exchange.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

17. The human hand is remarkable for its flexibility. It is a sensitive tool with opposable fingers and thumb. There are 14 finger bones, or phalanges, in each hand. The thumb has two phalanges, each of the other fingers has three phalanges. 27 bones of the wrist, palm, and fingers perform a wide range of movements.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

18. Spinal nerves connect the brain with the nerves in most parts of the body. Other nerves go directly from the brain to the eyes, ears, and other parts of the head. This network of nerves carries messages back and forth between the brain and the rest of the body.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

19. More than six billion human beings are alive today and each person is different. Yet despite our differences, in one very important way we are exactly the

same. Everyone basically consists of a body and a mind. We all grow, think, eat and sleep and this unites us like one huge family.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

20. The skeletons of men and women differ very little. Men's bones are generally slightly larger and heavier. The shoulders of women are narrower, rib cages shorter, joints looser, their necks are longer and slimmer. The female pelvic cavity is shallower and wider than the male pelvic cavity.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

21. The skin has two layers: the outer epidermis and the inner dermis. The epidermis is thinner than the dermis. The thickness of the epidermis varies from the very thin epidermis on the eyelids (about 0,1 millimetres thick) to the thick layer on the palms of the hands and the soles of the feet (about one millimetre thick). But even in the thinnest epidermis, there are several layers of cells.

blood. There are two main varieties: polymorphs and lymphocytes. There are three dif-

ferent kinds of polymorphs: eosinophils, basophils and neutrophils. There are two types of lymphocytes that sometimes function independently but usually in collaboration.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



Текст

24. 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.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Б Переведите предложения.

1. Artery walls are very strong.
2. The external ear canal is more susceptible to infection.
3. Eye injuries occur in many ways.
4. Ear infections vary in severity.
5. The excretion of bile pigments is vital.
6. Next to sugar, salt is the greatest food additive.
7. Side effects of cancer treatment vary.
8. The dermis houses about three million tiny sweat glands.
9. Red blood cells are some of the smallest cells in the body.
10. Mature red blood cells are tiny biconcave discs.
11. White blood cells are infection fighters.
12. Phosphorus plays an important role in cell metabolism.
13. Blood formation begins in the liver at about six weeks.
14. Lymph nodes develop relatively late during fetal life.
15. The brain stem connects the brain with the spinal cord.
16. There is a wide variety of plant life in a rainforest.
17. There is an electrochemical change in the surface membrane of the nerve.
18. Villi greatly increase the surface area of the internal mucosa.
19. Coughing is one of the most helpful defense mechanisms in the body.
20. Body functions involve chemical changes that occur within cells.
21. For specific purposes, there is a standard world-wide measurement system.
22. Asthma attacks are not all the same - some are worse than others.
23. Tissue cells produce an intercellular material that holds them together.
24. The body automatically maintains its water balance through the kidneys.
25. The study is in the pre-clinical experiment phase right now.
26. Environmental influences shape the complex patterns of connections between brain cells.
27. The survival of multicellular organisms requires a balance between cell proliferation and cell death.
28. The volume and distribution of body fluids vary with age, sex, and amount of adipose tissue.
29. The exact vitamin requirements for good health vary with age, weight, sex, and state of health.

30. Human growth from infancy to maturity involves great changes in body size and appearance.
31. In the initial stages of the disease there is edema and excessive mucus production.
32. These techniques provide valuable information about the presence of birth defects.
33. Humans and other vertebrates turn small amounts of calcium salts into bones and teeth.
34. Regardless of the cause, liver ailments have a common treatment.
35. The olfactory cells make nerve signals that travel to the brain for analysis by its smell and taste centers.
36. In the body fluids the molecules of water, gases, and the ions of substances in solution are in constant motion.
37. Protein synthesis happens in the cytoplasm of the cell.
38. Nerve cells are probably the largest cells. Some of them are more than three feet long.

Упражнение 16

Из приведенного ниже списка существительных подберите соответствующее контексту определение и впишите его перед определяемым словом.

animal, blood, body, cell, ear, energy, nerve, sense, sweat, taste

1. The optic nerve carries _____ signals to the brain.
2. Cells reproduce by _____ division.
3. Chemical reactions involve _____ changes.
4. Many _____ cells contain 1,000 mitochondria.
5. Only mammals have _____ glands.
6. Some papillae contain _____ buds.
7. Inner _____ abnormalities are rare, but generally serious.
8. The sense of smell depends on the stimulation of _____ organs in the nose by small particles in the air.
9. Lymphatic capillaries are slightly larger in diameter than _____ capillaries.
10. Measurement of _____ temperature provides a useful indication of the state of health.

Упражнение 17

Переведите «цепочки» из трех существительных.

- heart attack symptoms _____
- skin cancer cases _____
- bone marrow transplant _____
- blood vessel walls _____
- blood vessel diameter _____
- blood vessel diseases _____
- blood vessel ruptures _____
- blood cell production _____
- blood sugar level _____
- blood pH regulation _____
- cancer detection methods _____
- brain cell loss _____
- brain cell death _____
- brain cell type _____
- brain cell transplant _____
- brain cell connections _____
- heart transplant operations _____
- stem cell therapy _____
- stem cell research _____

Упражнение 18

А Проанализируйте предложения и найдите в них группы из двух, трех и более существительных, включающие определения и определяемое слово.

Б Переведите предложения.

1. Fatty deposits, or plaques, thicken blood vessel walls.
2. Blood cell production happens in red bone marrow.
3. Some elevation of blood sugar levels after meal is normal.
4. Blood sugar levels rise sharply in the intestinal tract after absorption of carbohydrates.
5. Blood pH regulation is necessary for the body.
6. A heart attack victim needs immediate medical care.
7. Cancer detection methods vary due to the location of the possible cancer.
8. Lumbar vertebrae occupy the posterior part of the mammal trunk region.
9. An axon is sinuous extension of a nerve cell body that conveys impulses to targets such as muscles, glands and other nerve cells.

10. Nearly all diagnostic tests available today measure individual arterial function, generally blood flow variation or changes in blood vessel diameter.
11. In the tropics, the atmosphere is particularly sensitive to sea surface temperature.
12. Brain cell loss does not occur evenly throughout the brain: in some parts it is more than in others.
13. The growth of microorganisms on body tissue surfaces alters the local environmental conditions.
14. The enormous variation in brain cell type is a key feature of the adult brain.
15. Sometimes brain cell death is inevitable.
16. Studies of brain cell transplants in animals continue.
17. The richness of brain cell connections accounts for much of the brain's complexity.
18. A bone marrow transplant between identical twins guarantees complete compatibility of leucocyte antigens between donor and recipient.
19. In many cases high blood pressure speeds some blood vessel diseases.
20. Air pollution emission laws impose large compliance costs on industry.
21. Water pollution control policies vary around the world.
22. Cell-to-cell interaction relies on the recognition of cell surface marker molecules.
23. The flow of blood after the blood vessel ruptures damages brain cells.

Тексты для тренировочного перевода к упражнениям 1-18

Выполните задания в следующей последовательности:

А Просмотрите мини-тексты и сформулируйте в одном предложении, о чем говорится в каждом из них.

Б Прочитайте каждое предложение в мини-тексте, найдите и подчеркните его ядро. Начните с глагола-сказуемого, который должен иметь *личную форму* в настоящем простом (неопределенном) времени.

В Опираясь на тему, контекст и структуру предложения, выпишите из словаря подходящие значения всех незнакомых слов.

Г Переведите тексты.

Текст 1. There are many different kinds of sugar. The most important sugar in the body is glucose. It is one of the body's most important fuels. The metabolism of glucose produces energy for the body cells.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

2. There is considerable variation in the complexity of organisms. At one end of the continuum there is the single cell organism such as the amoeba, and at the other, the highly complex multicellular human animal.

А

В Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

3. Cartilage is much softer than bone. It doesn't contain very many mineral salts and it doesn't contain blood vessels. It receives its nourishment by diffusion of nutrients through its intercellular substance from nearby vessels.

A

B Прочитайте каждое предложение, найдите и подчеркните ядро.

B

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст 4. In

the early embryo, the body does not have bones. Their shapes begin as a soft substance, cartilage. Nuggets of bone, ossification centers, then develop at certain points within the cartilage. They grow and spread, and cartilage turns into true bone.

A

B Прочитайте каждое предложение, найдите и подчеркните ядро.

B

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

5. The skeleton first develops as soft, gristly cartilage. Bone tissue spreads out from various sites in the cartilage into bone. At birth some of the «bones» are still partly cartilage. In childhood the facial bones grow faster, and the skull bones knit together firmly at sutures.

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

6. There are many minerals that are essential for health. One of the important minerals for the body is iron. It makes red blood cells and is important in enzyme processes and in the immune response. Everyone needs iron but women and young children need more iron than others.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

7. There are between 2 and 5 sweat glands in the body. These function in the regulation of body temperature and in the excretion of waste. Sweat glands are

simple tubular in type and especially numerous in thick skin. Some of their ducts open directly onto the skin surface.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

8. Blood is the chief means of transport within the body. It transports oxygen from the lungs to the body tissues, and carbon dioxide from the tissues to the lungs. Blood flow from a vein usually flows more slowly and steadily than the blood flow from an artery. Blood makes up about 8 percent of body weight. This amounts to 4-5 liters in women and 5-6 liters in men.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

9. 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.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

10. There are two types of brain cells, neurons and glia, with at least fifty different subtypes. Neurons do most of the brain's work. Glial cells do not conduct or process information, but support the work of the neurons and are also important in early brain development. Many accounts of the brain structure and function are available.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

11. Human cells have a membrane that holds the contents together. However, this membrane is not just a sac. It has receptors. Reactions that take place at the receptors often alter or control the cell's functions. Within the cell membrane are two major compartments, the cytoplasm and the nucleus. The cytoplasm contains structures that perform the cell's functions. The nucleus contains the cell's genetic material and the structures that control cell division and reproduction. Inside every cell are mitochondria which are tiny structures that provide the cell with energy.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



Текст

12. The organs of taste are the taste buds. Some of them are on the throat, cheek, and the roof of the mouth. But most are on the tongue. Taste buds work better when they are wet. Nerve endings in the taste buds respond to chemicals in the substances. Each taste bud responds only to the kind of basic taste that is its specialty. The sweet and salt taste buds are most numerous on the tip and front part of the tongue, sour taste buds are mainly along the edges, and bitter taste buds are at the back of the tongue. The solid center of the tongue's surface has very few taste buds.

A

B Прочитайте каждое предложение, найдите и подчеркните ядро.

B

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

13. 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. The balance between blood, tissue fluid and cells remains almost constant and there is a rapid and continuous exchange of water between them.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



Текст

14. Plasma makes up about 55% of the total volume of blood, while red and white blood cells make up 45%. Blood cells and platelets are incredibly tiny. In a single drop of blood there are approximately 250 million red blood cells, 16 million platelets and 375,000 white blood cells. Red blood cells carry oxygen to the tissues. White blood cells of different types detect and destroy harmful microorganisms. Platelets play a key role in blood clotting.

А

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В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

15. The skin is one of the most complex organs in the body. There is an outer layer, or epidermis, a middle layer of fibrous tissue, the dermis, and beneath this a layer of subcutaneous fat. The dermis is much thicker than the epidermis. The skin grows faster than any other organ. It is very thin and delicate in some areas and much thicker and tougher in others. The thickest skin is on the palms of the hands and the soles of the feet. The skin over the eyelids is the thinnest of all. Regardless of its thickness, skin everywhere undergoes a continuous process of renewal. With age the skin changes. The dermis gradually loses some of its fatty and elastic tissues. The skin becomes thinner and drier with more wrinkles.

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| английское слово | перевод/значение |
|------------------|------------------|
| | |

1.6. Глагол

в прошедшем простом (неопределенном) времени

Сказуемые, выраженные глаголом в *прошедшем простом (неопределенном) времени*, обозначают обычные, регулярные действия, имевшие место в прошлом.

В зависимости от способа образования формы прошедшего времени (называемой также 2-й формой глагола) все английские глаголы делятся на две группы: *правильные* и *неправильные*.

Правильные глаголы имеют в прошедшем времени окончание *-ed*.

Признаком принадлежности к группе неправильных глаголов является особая форма прошедшего времени.

| Пример: | |
|------------------------|--|
| инфинитив/первая форма | форма прошедшего времени/вторая форма |
| contain | contained (<i>правильный глагол</i>) |
| come | came (<i>неправильный глагол</i>) |

Форма прошедшего времени правильных глаголов в словаре не приводится. Форма

прошедшего времени неправильных глаголов обязательно приводится в словаре и стоит непосредственно после неопределенной формы.

Пример:

come [kʌm] *v* (**came; come**) 1 **приходить, идти...**

Форму прошедшего времени неправильного глагола можно также найти в словаре в отдельной словарной статье (по алфавиту): она обозначается как «*past* от ...» (в нашем примере: «*past* от *come*»). Такая форма приводится без перевода: глагол обычно находят по неопределенной форме, т.е. в данном примере следует обращаться к словарной статье «*come*».

Упражнение 19

А Найдите и подчеркните в предложениях сказуемые, выраженные глаголами в прошедшем времени. Определите и впишите первую форму (инфинитив) этих глаголов. Форму инфинитива неправильных глаголов можно уточнить по словарю.

Б Переведите предложения.

1. Research into flu began in 1901. (*begin*) Исследования гриппа начались в 1901 г.
2. With anesthesia all surgery became safer. (_____)
3. Galen's theories influenced science development. (_____)
4. R. Koch (1843-1910) found methods of identification and classification of bacteria.
(_____)
5. L. Pasteur (1822-1895) laid the foundation of microbiology. (_____)
6. R. Bright (1789-1859) paid great attention to postmortem examinations of patients. (_____)
7. Laennec (1781-1826), a French physician, wrote admirable studies of numerous disorders of the heart and lungs. (_____)
8. Leonardo da Vinci (1452-1519) left incomparable drawings of his dissections of every part of the body. (_____)
9. In 1921, a Canadian scientist F. Banting (1891-1941) undertook research on the internal secretion of the pancreas. (_____)
10. Much of Freud's work dealt with the conflicts between the conscious mind and unconscious instincts. (_____)
11. Until the 18th century smallpox caused the most lethal of all the acute childhood illnesses. (_____)

12. Invention of the electron microscope in 1938 gave clear images of submicroscopic world of viruses. (_____)
13. The Earth's climate grew warmer and drier during the Permian Period, which began about 275 million years ago. (_____ / _____)
14. Twenty years ago, we didn't even diagnose autism as a separate disorder; it was a symptom of childhood schizophrenia. (_____ / _____)
15. Several recent studies showed a connection between stress and illness. (_____)
16. The later half of the 19th century saw advances in science acceleration and the birth of whole new areas of research. (_____)
17. W. Harvey (1578-1657) made the most important discovery in the history of scientific medicine. (_____)
18. In 1691, an English doctor C. Havers made the first description of microscopic structure of bones. (_____)

1.7. Значения глагола *will*

1.7.1. Глагол в будущем простом (неопределенном) времени

Сказуемые, выраженные глаголом в *будущем простом (неопределенном) времени*, обозначают обычные, регулярные действия или сообщают факты, которые произойдут в будущем.

Для образования форм английского глагола в будущем времени во 2-м и 3-м лицах единственного и множественного числа служит глагол *will* (для глаголов в 1-м лице используется либо вспомогательный глагол *shall*, либо *will*).

Пример:

The water **will boil** in two minutes.

1.7.2.

Глагол *will* в значении настоящего времени

В научно-технических текстах глагол *will* нередко имеет значение настоящего времени и используется для выражения: 1) возможности, способности, 2) неизбежности, 3) привычного состояния, часто повторяющегося действия.

Например, сравните:

- The water will boil in two minutes.
Вода закипит через две минуты.
- Water will boil at 100 °C.
Вода (обычно) *закипает* при 100 °C.

Упражнение 20

Переведите предложения, в которых глагол *will* использован в характерных для научного текста значениях.

1. Oxygen will dissolve in water.
2. Saliva will start the process of digestion.
3. Without adequate supply of blood tissue will die.
4. Ten per cent loss of the body water will bring delirium.
5. No single food will make or break good health.
6. Some white blood cells will attack and kill germs.
7. Each spinal nerve will form two main branches, a ventral and a dorsal.
8. A healthy human being will lose some 2,4 litres of fluid a day in the form of sweat, urine, and water vapour.
9. The optimum level of cholesterol will differ from person to person according to differences in, say, body-type, lifestyle and behavior.
10. The number of leukocytes in the blood will rise or fall in response to certain abnormal conditions.
11. The normal heart will undergo over 3 billion contractions during a normal lifetime.
12. Through the processes of growth and development, the somatic cells will become the tissues, organs, and systems that compose the adult human body.
13. There is no drug that will cure arthritis.
14. Often a therapist will suggest multiple treatments of phobias.
15. Vitamins alone will not take the place of a good diet and will not provide energy.
16. Two of three diabetics will die from cardiovascular disease.
17. During an average breath, an adult will exchange from 500 ml to 700 ml of air.
18. Injury of the heart will affect the peripheral tissues that depend on the delivery of nutrients and removal of wastes through the blood vascular system.

1.8. Глагол в перфектной форме настоящего времени

Кроме группы простых времен (*Simple Tenses*), которым посвящены пп. 1.4, 1.6, 1.7 практикума, система времен английского глагола включает также другие группы: перфектные времена (*The Perfect Tenses*), продолженные (*The Continuous Tenses*) и перфектно-продолженные (*The Perfect Continuous Tenses*).

Сказуемое в перфектной форме настоящего времени обозначает действие, завершённое к настоящему моменту (к моменту речи), который либо указан в предложении, либо подразумевается из контекста.

Такая глагольная форма состоит из двух элементов, а именно - вспомогательного глагола *have* (который согласуется в лице и числе с подлежащим) и *смыслового глагола в 3-й форме* (также называемой причастием прошедшего времени - *Past Participle*):

have/has + V₃

3-я

форма *правильных* глаголов совпадает с формой прошедшего времени, т.е. имеет окончание *-ed*, и в словарях не приводится. Причастие прошедшего времени *неправильных* глаголов (3-я форма глагола) обязательно приводится в словарях и указывается, как и 2-я форма, в скобках.

Пример:

eat [i:t] v (ate; eaten) 1 есть, питаться ...

3-ю форму

неправильного глагола (т.е. причастие прошедшего времени) можно также найти в словаре в отдельной словарной статье (по алфавиту): она обозначается как «*p.p.* от ...» (в нашем примере: *p.p.* от *eat*). Такая форма приводится без перевода: глагол обычно находят по неопределённой форме, т.е. в данном примере следует обращаться к словарной статье «*eat*».

Пример:

eaten [i:tn] p.p. от eat

у

некоторых неправильных глаголов 2-я и 3-я формы совпадают. В таком случае в словарной статье в скобках указывается только одно слово.

Пример:

buy [baɪ] v (bought) 1 покупать, купить ...

На русский

язык глагол в перфектной форме настоящего времени переводится глаголами совершенного вида в прошедшем времени.

Например:

Today the biologists have described more than a million living species.

К настоящему времени биологи описали более миллиона существующих видов.

Если в

предложении указывается *период* совершения действия, сказуемое в перфектной форме настоящего времени переводится на русский язык глаголом в настоящем времени.

Например:

Animals have existed for 600 million years.

Животные существуют (уже) 600 миллионов лет.

Упражнение 21

А Найдите и подчеркните в предложениях сказуемые, выраженные глаголами в настоящем перфектном времени, и определите первую форму (инфинитив) смыслового глагола. Форму инфинитива неправильных глаголов можно уточнить по словарю.

Б Переведите предложения.

1. Modern medicine has made enormous studies in recent years. (make)
2. Science has now identified almost every gene in humans. (_____)
3. Over the past 60 years evidence has steadily grown of the dangers of high-fat diets.
(_____)
4. Human activity has always had an influence on nature.
(_____)
5. Vaccination has eradicated smallpox as a natural hazard. (_____)
6. Since the turn of the century the average global surface temperature has risen by just 0.5°C. (_____)
7. Since discovery of insulin in 1922 it has saved millions of lives. (_____)
8. For decades, scientists have warned about global warming's likely impact on the environment. (_____
_____)
9. The evolution of humans has taken many thousands of years. (_____)
10. So far, scientists haven't found a gene for ageing.
(_____)

Упражнение 22

А Найдите и подчеркните ядро в следующих предложениях.
Проанализируйте форму сказуемого (время, лицо, число).

Б Переведите предложения.

1. Grains have nourished humans since early times.
2. Just 600 human generations have passed since the end of the last Ice Age.
3. The blood that has passed through the tissues flows along veins to the heart.
4. Genetics has discovered thousands of mutations responsible for diseases in humans.
5. The hormones have become agents of great importance in radio-therapeutic techniques.
6. There have been plenty of studies on the subject, but none has been conclusive.
7. Every living thing - a dolphin, an ant, a daisy, or a human body - has begun life as a single cell with a few molecules of DNA.
8. Drugs have extended our lives and improved quality of life in countless ways.
9. The last 60 years have witnessed remarkable achievements in cardiovascular medicine and surgery.
10. Anatomy has been a subject of great interest since ancient times.
11. There has been no significant change in human DNA in the last ten thousand years.
12. The outlook for patients with hypertension has improved markedly in recent years with the development of antihypertensive drugs.
13. The concentration of carbon dioxide in the atmosphere has mounted considerably over the past century or so.
14. For over sixty years researchers have observed an increase of association between sun exposure and cancer mortality.
15. Over the past 30 years, scientists have identified various proteins that activate or silence genes.
16. Radical improvements in the care of people under general anesthesia have laid the foundation for such procedures as organ transplantation and open-heart surgery.
17. In recent years, there have been all sorts of advances in everything from molecular biology to neuroscience, psychology, anthropology, sociology.
18. Development of techniques of cell, tissue and organ culture and electron microscopy has greatly expanded the range of methods available for study of endocrine mechanisms and has added much to knowledge of them.

Упражнение 23

А Поставьте глаголы, приведенные в скобках, в форму настоящего перфектного времени. Для этого необходимо использовать форму глагола *have* в настоящем времени, соответствующую числу и лицу подлежащего, а также уточнить по словарю, к какой группе - правильных или неправильных - относится смысловой глагол, и использовать в предложении его 3-ю форму.

Б Переведите предложения.

1. Many effective treatments for heart failure (*to emerge*) _____
_____ in recent years.
2. Humans (*to eat*) _____ vegetables, fruit, fish and meat since the Stone Age.
3. Coffee (*to be*) _____
in use since the second century AD.
4. Every living thing (*to begin*) _____ its life as a single cell.
5. Throughout history, water (*to have*) _____
a huge impact on our lives.
6. Scientists (*to identify*) _____
hundreds of kinds of cancer cells.
7. Solar energy in its various forms (*to play*) _____
a significant role in the progress of
humanity.
8. Over the past century the concentration of carbon dioxide in the atmosphere (*to rise*) _____
9. Improvements in the detection and treatment of cancer (*to contribute*) _____ to the drop in death rates.
10. In the past one hundred years, medicine (*to progress*) _____ further than at any time in history due to the development of biological sciences.
11. Rapid industrialization and urbanization in Asia (*to cause*) _____ severe air pollution over many countries.
12. A number of research groups in different countries (*to make*) _____ careful and independent analyses of these observations.
13. Lymphatic vessels drain fluids that (*to diffuse*) _____

_____ through the very thin walls of capillaries.

14. Climate change is the most serious environmental threat that the world _____ ever (*to face*) _____ .

15. In recent years, there (*to be*) _____ all sorts of advances in every field of science.

16. The human brain (*to change*) _____ in complexity and size over thousands of years.

17. Over many millions of years, the amount of water on Earth (*to remain*) _____ the same.

1.9. Глагол в формах продолженного времени

Сказуемое, имеющее форму продолженного времени, обозначает действие в развитии, процесс, происходящий в определенный момент времени в настоящем, прошедшем или будущем. Такое сказуемое состоит из двух частей, а именно - вспомогательного глагола *to be* (который согласуется в лице и числе с подлежащим и указывает на время осуществления действия) и смыслового глагола в 4-й форме (называемой также *причастием I* или *причастием настоящего времени*). Формальным признаком этого причастия является окончание *-ing*:

be + V_{ing}

4-я форма глагола образуется одинаково для правильных и неправильных глаголов и в словарях не приводится. Для определения значения смыслового глагола по словарю следует отбросить окончание *-ing* и найти значение инфинитива (неопределенной формы глагола).

Пример:

is influenc|ing

influence ['ɪnfluəns] **v 1** влиять, оказывать влияние

На русский язык такая форма глагола переводится, как правило, глаголами несовершенного вида.

Например:

The Sun is continually warming the Earth.

Солнце постоянно обогревает Землю.

При переводе глагольных форм продолженного времени на русский язык грамматическое значение длительности, процессуальности действия нередко нуждается в лексическом «усилении»; для этого в русском переводе могут использоваться слова *постоянно, непрерывно* и др.

Например:

The forests of the world are disappearing.

Леса непрерывно (постоянно) исчезают с поверхности Земли.

Упражнение 24

А Найдите и подчеркните в предложениях сказуемые, выраженные глаголами в настоящем продолженном времени, и определите первую форму (инфинитив) смыслового глагола. Уточните правописание неопределенной формы глагола по словарю.

Б Переведите предложения.

1. Technology is chang|ing fast. (*change*)
2. The research is now moving from lab to clinic. (_____)
3. Restrictions on this research are slowing the progress. (_____)
4. Some of these questions are now finding answers. (_____)
5. People are living longer than ever before. (_____)
6. Treatment for osteoarthritis is constantly improving due to new, highly effective anti-inflammatory drugs. (_____)
7. Fortunately, some new treatments of this disorder are emerging. (_____)
8. The bone marrow is continually producing erythrocytes. (_____)
9. There is a clear connection between sleep and health, sleep deprivation and disease, and the evidence is getting stronger. (_____)

10. From birth to the age of 21, child's gastrointestinal, neurological and cardiovascular systems are constantly changing. (_____)

Упражнение 25

А Найдите и подчеркните ядро в следующих предложениях.

Проанализируйте форму сказуемого (время, лицо, число).

Б Переведите предложения.

1. Acupuncture is getting acceptance in Western medicine for treatment of some conditions.
2. Our lifestyles are changing and causing an increase in the levels of energy use.
3. The number of young and old people in the population is changing dramatically.
4. Heart transplant operations are becoming more and more common.
5. Every cell, tissue, organ, and system of the body is working constantly.
6. Signals are coming in the brain from all parts of the body all the time.
7. Inside any cell a multitude of chemical reactions is taking place.
8. Numerous groups around the world are working on cancer vaccines.
9. Through the development of better surgical techniques, better radiation therapy, and the application of newer drugs, the control of brain tumors is improving gradually.
10. In your mother's womb, your body was forming nerve cells at the rate of about onequarter million per minute.
11. Due to species extinction, the diversity of the forms of life that inhabit the planet is diminishing.
12. Arabian physicians were using opium preparations very effectively and extensively in their medical practice.
13. Blood pressure is highest during systole, when the ventricles are contracting and lowest during diastole, when the ventricles are relaxing and refilling.

Упражнение 26

А Подберите к началу предложений, содержащему глагол-связку *to be* (левая колонка), соответствующее по смыслу продолжение, содержащее 4-ю форму смыслового глагола (*Fing*) из правой колонки.

Б Переведите составленные вами предложения.

| | |
|---|---|
| 1. The body is always ... | a) moving. |
| 2. Human activities are now ... | b) using energy. |
| 3. The contents of the chest and abdomen are constantly ... | c) causing damage to the ozone layer. |
| 4. The bones of a living person are constantly ... | d) varying with the movement of ribs and the diaphragm. |
| 5. Numerous nerve endings in the muscles, tendons, bones, and joints are continuously ... | e) moving in the atmosphere. |
| 6. Water is continuously ... | f) rebuilding itself. |
| 7. Even during sleep muscles are constantly ... | g) reshaping and rebuilding themselves. |
| 8. The size of the thoracic cavity is constantly ... | h) sending impulses back to the central nervous system. |

1.

2.

3.

4.

5.

6.

7.

8.

1.10.

Глагол в формах перфектно-продолженного времени

Сказуемое в форме перфектно-продолженного времени обозначает действие, которое началось в прошлом и продолжается в момент речи. Чаще других в текстах встречается форма *настоящего* перфектно-продолженного времени. Такое сказуемое состоит из двух частей:

1) перфектной формы глагола *to be (have/has been)*, первый элемент которой *have/ has* согласуется с подлежащим в числе и лице и указывает на время (в наших примерах - на настоящее время);

2) *причастия I* (т.е. 4-й формы глагола - *Ving*)

Такая глагольная форма часто используется вместе с предлогами *for* или *since*, которые указывают, в течение какого периода времени длится действие.

Пример:
have been using

На русский язык глагол в форме перфектно-продолженного времени переводится глаголами несовершенного вида в настоящем времени (при необходимости добавляется слово *уже*).

Например:

Human beings have been using plants *for* thousands of years.

Люди используют растения уже в течение нескольких тысяч лет.

Упражнение 27

А Найдите и подчеркните сказуемое, имеющее форму перфектно-продолженного времени.

Б Переведите предложения.

1. The search for better health has been going on for centuries.
2. Lately vitamin D deficiency has been making a comeback.
3. Cancer death rates have been falling since 1991.
4. More and more men have been entering the nursing profession.
5. Demand for energy has been growing steadily over recent decades.
6. Mountain glaciers have been shrinking in almost all areas of the world.
7. Doctors have been using acupuncture in China for over two thousand years.
8. Doctors have been operating on fetuses since the early 1980s.
9. Human beings have been applying cosmetics since antiquity.
10. Scientists have been investigating the different functions of the right and left cerebral hemispheres for some time.
11. Since the 1960s physicians have been experimenting with transplants of the islets of Langerhans.
12. In recent years, scientists have been documenting remarkable signs of intelligence and emotional depth in animals from bees to elephants.
13. The Earth has been evolving gradually for 4.5 billion years, and is still changing today.

14. Since 1850 atmospheric CO₂ concentrations have been increasing dramatically due to the burning of fossil fuels and the destruction of forests, particularly in the tropics.

15. Humankind has over many centuries been exploiting the Earth and its resources.

16. Green-house gas concentrations in the atmosphere have been rising since the industrial revolution in the 18th century.

1.11. Система времен английского глагола в активном залоге

Упражнение 28 (обзорное)

Таблица 1. Образование времен английского глагола в действительном залоге

| Группы времен | Время | | |
|-----------------------------|--------------------------------|----------------------|---------------------------------------|
| | настоящее | прошедшее | будущее |
| Простое (неопределенное) | V Vs | V ₂ | shall } V will } |
| Продолженное | am } Ving is } are } | was } Ving were } | shall } be Ving will } |
| Перфектное | have } V ₃ has } | had V ₃ | shall } have V ₃ will } |
| Перфектно-продолженное | have } been Ving has } | had been Ving | shall } have been Ving will } |

Пользуясь таблицей 1, иллюстрирующей образование времен английского глагола в действительном залоге, найдите и подчеркните в каждом предложении сказуемое и дайте его полную характеристику: лицо, число, время, группа.

Пример:
has survived — 3-е лицо,
 единственное число,
 настоящее время,
 перфектная группа.

Б Переведите предложения.

1. Research in these areas is moving very fast.
2. People vary in their reaction to different antigens.
3. In smokers alveoli become less stretchy.
4. For thousands of years people have been eating the leaves of plants.
5. Antibiotic drugs have greatly improved the treatment of abscesses.
6. Impressive data support this view.
7. People are polluting the atmosphere with extra greenhouse gases.

8. Femur is the largest bone in the body, and it supports the body's weight.
9. Deoxyribonucleic acid is the molecule which carries the genetic code that determines heredity.
10. Bones act as mineral stores and are constantly exchanging calcium with blood.
11. Higher temperatures have already had a measurable effect on land glaciers and sea ice.
12. The cells at the base of the epidermis are alive and are constantly growing and multiplying.
13. The nerve cells of the brain are constantly sending and receiving messages from the eyes, ears, muscles, and other parts of the body.
14. Herophilus (335-280 BC) made important discoveries about the brain and the nervous system, and made the first clear distinction between arteries and veins.
15. Lymph is constantly moving around the body but the lymphatic system has no central pump equivalent to the heart.
16. Several metabolic problems that affect many systems influence the growth and the development of the skeletal system.
17. The Ancient Egyptians made millions of mummies, but little of their purely anatomical knowledge has survived.
18. About two months after fertilization, all of the major organs have formed, and the baby's heart is beating, and yet its body is still just 25 mm long.
19. Climate change because of global warming will result in large changes in water supplies in many places.
20. Arteries are carrying pure blood to various parts of the body, and the veins are bringing back blood with waste products.
21. Between 1900 and the 1930s the physical nature of viruses became clearer, but their methods of infection and reproduction remained a mystery.
22. Since the 1985 discovery of a dramatic springtime thinning of the ozone layer over Antarctica, researchers have been speculating on its cause - is it chemical destruction by chlorofluorocarbons or simply a rearrangement of ozone by winds peculiar to Antarctica?
23. Lymph capillaries in the tissues pick up excess tissue fluid that has passed out through blood capillaries and return it, via lymph nodes, to veins that empty into the right side of the heart.

Упражнение 29*

А В соответствии с содержанием предложений поставьте глаголы, данные в скобках, в правильную форму (используйте таблицу 1 на стр. 113).

Б Переведите предложения.

1. People today _____ longer than people ever have. (*to live*)

2. Because of the activities of people the amount of carbon dioxide in the atmosphere

_. (to rise)

3. Biochemistry _____ with the whole range of living organisms from the simplest to the most complex. (to deal)

4. In the 1980s, there _____ substantial advances in the treatment of breast cancer. (to be)

5. The acini _____ digestive enzymes necessary for the digestion of proteins, carbohydrates and fats. (to secrete)

6. The concentration of water vapour in the air _____ widely. (to vary)

7. The Sun _____ for five billion years. (to burn)

8. People _____ wind energy in one form or another for thousands of years. (to use)

9. Doctors _____ heart transplants since 1967. (to perform)

Тексты для тренировочного перевода к разделу 1 *Выполните задания в следующей последовательности:*

А Просмотрите мини-тексты и сформулируйте в одном предложении, о чем говорится в каждом из них.

Б Прочитайте каждое предложение в мини-тексте, найдите и подчеркните его ядро. Начните с глагола-сказуемого, который должен иметь *личную форму* в настоящем, прошедшем или будущем времени (в простой, продолженной, перфектной или перфектно-продолженной форме).

В Опираясь на тему, контекст и структуру предложения, выпишите из словаря подходящие значения всех незнакомых слов.

Г Переведите тексты.

Текст 1. The Earth population is growing faster and faster. The number of elderly people is growing worldwide.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

2. People are living more active lives for longer periods of time than ever before. They are traveling much longer distances than in the past. In the future people will live longer than today.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

3. The use of X-rays equipment in hospitals began in the late 1890s. The X-ray has contributed greatly to our knowledge of the physiology of the digestive canal.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

4. Life has existed on Earth for something like 2,000,000,000 (billion) years. For all of that time water has been essential to life and its properties have not changed.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

5. Leonardo da Vinci (1452-1519) devoted much time to scientific studies. He studied the skull in great detail. He described the teeth carefully, and made a distinction between molars and premolars.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



_____ *Текст 6.* In the 19th century there were several theories about the causes of sickness. Pasteur's research (1865) established the link between microbes and disease and ultimately saved many lives.



В Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



_____ *Текст*
7. Doctors treat this disease with antibiotics and treatment usually lasts for at least two weeks. The choice of antibiotics will depend on the patient's history of allergies and laboratory testing of the bacteria that have caused the infection.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

8. Four weeks into development, the embryo is roughly the size of a pea. It bears little resemblance to a human - its face has not yet formed, and it has a tail-like extension instead of legs. However, its heart is forming, and the beginnings of a spinal cord are present.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

9. The army in ancient Rome was responsible for many of the important developments in medicine. Military campaigns had taught Roman doctors about the nature of wounds and surgery, and they also used gladiators' wounds as «windows into the body».



Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



Текст

10. Recent brain studies and new types of blood tests suggest a link between mental and cardiovascular health. People with depression are at higher risk for heart disease, and vice versa. Recent research is shedding light on this connection.



Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

11. There is a relation between the number and size of nucleoli and cell growth and protein synthesis; in cells which are actively growing and dividing and in cells which actively synthesize protein, nucleoli are large and often multiple.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

12. Blood does not flow at a constant rate to all parts of the body. The rate varies according to the amount of blood that the tissues need. For example, when you are running, your leg muscles receive more blood than they do when you are resting.



Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

13. Energy production varies greatly from person to person. A heavier person produces more energy than a lighter person. For two individuals of the same weight the taller and leaner will produce more energy than the shorter and stouter. Men produce more energy than women.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

14. The watery part of the blood is the plasma. It consists mostly of water, about 90 per cent. Small amounts of many important substances are present in it. When any of these materials is not present in the blood in the correct amount, it is a sign that some organ or system is not working properly.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

15. The first successful human transplant of a solid organ took place in 1954, when a young man in Boston received a kidney from his identical twin brother. Since then, scientific, technical and medical advances have made organ transplantation a relatively common procedure.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

16. Research into overeating and obesity has accelerated in recent years, and with good reason: excess weight is the most important risk factor for cardiovascular disease and diabetes. In their quest for causes, scientists have long concentrated on metabolic hormones.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

17. Human beings are a part of nature. We are the result of the same natural processes that have produced all of the other myriad life-forms in the world. Yet we feel different, and of course we are. Among all our remarkable attributes, the most striking is our possession of language.

А

● Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

18. A bruise is a collection of blood that has settled in space between muscle and skin and is visible through the surface of the skin. It usually appears reddish at first (or purple if very close to the surface of the skin) and changes to black and blue and finally to yellow-green. Most bruises disappear naturally, without treatment, in a few days or weeks.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

19. 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.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

20. Water has been the cradle of life throughout most of the planet's 4600- million-year history. The earliest forms of life - a simple collection of organic compounds - evolved in water and stayed in this nutrient soup that remained at a suitable temperature and never dried up. From these early beginnings, life on Earth evolved and diversified through the millennia.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

21. As newborns, we had some basic reflexes, among them crying, kicking, and coughing. We slept a lot, and occasionally we smiled, but the meaning of our first smiles was not entirely clear. We ate and we grew. We crawled and then we walked. Our development was a continuous creation of more complex forms.

А

Б

Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



Текст

22. The dermis, the lower layer of the skin, is a connective tissue that supports and anchors the epidermis, the upper layer. The dermis contains strong, flexible fibers, a network of blood vessels, nerves, sensory receptors, sebaceous and sweat glands. Beneath the dermis lies subcutaneous tissue, a fatty layer that insulates the body and stores energy.

A

B Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

23. Throughout history, people lived in fear of infectious diseases such as smallpox. Of the many diseases that plagued societies for centuries, smallpox was among the most serious and by the 17th century, it had become the most widespread infectious disease in the West. Numerous individuals contracted and died of that viral disease. Those who survived had become resistant to infection with the smallpox virus.

A

B Прочитайте каждое предложение, найдите и подчеркните ядро.

B

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

24. The arteries will carry blood away from the heart to smaller and smaller vessels, the capillaries. The veins will carry the oxygen-poor blood back to the heart. Veins return blood to the heart from all the organs of the body. The large veins run parallel to large arteries. Veins have several characteristics which differentiate them from their counterparts, the arteries. They are much more variable in location and distribution and are usually larger than the arteries. Veins have thinner, less muscular walls and many contain valves which prevent backflow of blood.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

26. In the Middle Ages, uroscopy, the examination of urine samples, was an important form of diagnosis, and many treatments used herbal medicine. Major surgery was rare. There was lack of anesthetics and conscious patients cried out in pain throughout the operation. In the 19th century the era of painless surgery had arrived. The introduction of anesthetics and the use of antiseptics drastically reduced the trauma of surgery and risk of death from infections.

А

Б

Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



Текст

27. People have always affected the natural environment. But the population growth along with emergence of industrial world economy during the last two centuries has increased the magnitude, complexity and the rate of these modifications. Pressures on the environment mounted during the 20th century. The world's population was expanding faster than ever. The growth of cities, industries, farming, and power generation is still seriously damaging the environment. The human activity is increasing the amount of green-house gases in the atmosphere. As a direct result of human activities, the Earth's climate is slowly but steadily getting warmer.



Б Прочитайте каждое предложение, найдите и подчеркните ядро.

РАЗДЕЛ 2 ГЛАГОЛ В ПАССИВНОМ (СТРАДАТЕЛЬНОМ) ЗАЛОГЕ

2.1. Общие сведения

В английском языке, как и в русском, формы глагола в пассивном залоге используются для выражения действия, не совершаемого подлежащим, а направленного на него.

Например:

Blood is used for transport.

Кровь используется как транспортное средство.

Форму глагола в пассивном залоге можно распознать по характерным признакам. Такая форма глагола обязательно включает:

- вспомогательный глагол *to be*, который согласуется в лице и числе с подлежащим и изменяется по временам;
- смысловой глагол в 3-й форме (т.е. причастие прошедшего времени - *Past Participle*):

be + V₃

Глаголы в пассивном залоге (как и в активном залоге), имеющие формы простого (неопределенного) времени, обозначают регулярные, повторяющиеся действия; в формах продолженного времени - обозначают действия в процессе, а в перфектных формах - завершённые действия и могут относиться к настоящему, прошедшему и будущему времени (см. таблицу 2).

Таблица 2. Образование времен английского глагола в пассивном залоге

| Группы времен | Время | | |
|-----------------------------|--|--------------------------------------|--|
| | настоящее | прошедшее | будущее |
| Простое (неопределенное) | am } is } V ₃ are } | was } were } V ₃ | shall } will } be V ₃ |
| Продолженное | am } is } being V ₃ are } | was } were } being V ₃ | — |
| Перфектное | have } has } been V ₃ | had been V ₃ | shall } will } have been V ₃ |

Пример:

is influenced — настоящее простое

was being produced — прошедшее продолженное

have been made — настоящее перфектное

Вспомогательный глагол *to be* в составе сказуемого в пассивном залоге согласуется с подлежащим в лице и числе, а также изменяется по временам.

На русский язык предложения со сказуемыми в пассивном залоге могут переводиться несколькими способами, и нередко русское предложение отличается от английского по структуре, в частности, дополнение английского предложения становится подлежащим в русском варианте. Иными словами, английскому предложению со сказуемым в пассивном залоге рекомендуется подбирать русский эквивалент со сказуемым в активном залоге.

Например:

Some reactions are greatly affected by light.

Некоторые реакции в значительной степени подвержены воздействию света. (страдательный залог)

Свет оказывает сильное воздействие на протекание некоторых реакций. (действительный залог)

Упражнение 30

А Пользуясь таблицей 2, иллюстрирующей образование времен английского глагола в пассивном залоге, найдите сказуемое в каждом предложении и дайте его полную характеристику: лицо, число, время, группа.

Пример:

is assisted — 3-е лицо, ед. ч., наст. простое время, страдательный залог

Б Переведите предложения.

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 sideeffects.
6. Most of the ear is hidden from view within the skull.
7. The cells on the surface of the skin are constantly being replaced by new cells.
8. The first heart sound is followed after a short pause by the second.
9. Local inflammation is followed by various reactions in other parts of the body.
10. An upper respiratory infection of the nose and throat is usually followed by middle ear infections.
11. The lymph is continually being drained away from all over the body by a large number of small lymph vessels.
12. No good explanation of the mechanism of this phenomenon has ever been advanced.
13. This view is now being challenged.
14. A premature baby will often be placed in an incubator.
15. The cell's structures are housed in a gel-like substance, cytoplasm.
16. Oxygen is taken from outside and exchanged with carbon dioxide in the lungs.
17. For centuries, drugs have been made from animal and plant extracts.
18. Respiratory systems of various types are found in a wide variety of organisms.
19. Writing has been called »visible language».
20. The first steps towards scientific explanation of the world were taken in ancient Greece.
21. Enzymes and their products were first obtained from bacteria, yeast, and molds.
22. Pain relief by bark of the willow tree has been known since antiquity.
23. Over a million species have been classified - from bacteria to blue whales.
24. The common cold is brought to us by any one of 200 viruses.
25. Possible links between the pollutants and high infant mortality in the first year of life are being investigated.
26. Through perspiration and other bodily functions, large amounts of water are steadily being lost from the body.
27. The epidermis is made up of cell layers that become flatter and tougher towards the surface.

Упражнение 31

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

| | |
|---|--|
| 1. The spinal column ... | 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 206 bony elements ... | 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. |

Б

Переведите предложения.

1. *The spinal column is made up of bony vertebrae.* Позвоночный столб состоит из костных позвонков.

2.

_____ 3.

_____ 4.

_____ 5.

_____ 6.

_____ 7.

Упражнение 32

А Подчеркните сказуемое в каждом предложении и определите форму глагола, которой оно выражено: лицо, число, время и залог.

Б Переведите предложения.

1. Nasal bone makes up the bridge of the nose; the rest of the nose is made of cartilage.

2. 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.

3. Living organisms are affected by and affect the nonliving world strongly.

4. During sleep, our bodies are being «repaired».

5. The lungs are housed in the chest cavity, a space that also includes the mediastinum.

6. The mechanisms that govern the transfer of substances across the placental barrier are complex and are still not entirely understood.
7. In some cases the upper respiratory tract is affected and catarrh of the mucous membranes begins.
8. An organ has a specific function but organs also function as part of a group which is called an organ system.
9. Fungi were once classified as simple plants but they are now placed in their own kingdom - fungi.
10. Hormones are given off directly into the blood stream, which carries them throughout the body.
11. The attacks of the disease usually last several hours and are followed by coughing, with expulsion of the mucous plugs.
12. There are thousands of different viruses that have now been classified into different groups.
13. Gases that are pumped into the air by industry, cars and homes are gradually changing the balance of gases in the Earth's atmosphere.
14. Bones are living active organs that are constantly being destroyed and rebuilt at the same time.
15. Today, about a tenth of the Earth's surface is covered with ice, which stores three quarters of the fresh water on Earth.
16. The lower back supports much of the body's weight and is involved in almost every physical activity.
17. The white blood cells detect and destroy cells which have been infected with viruses and which have become cancerous.
18. Each day, about two billion of the body's cells wear out and are replaced.
19. The body contains roughly two pounds of calcium, about 99 percent of which is locked into the bone.
20. Doctors have been performing heart transplants since 1967; the first transplant was performed in South Africa in that year.
21. Climate is changing. The implications of climate change are not yet being taken seriously enough.
22. Many stomach disorders result in or are accompanied by a loss of appetite.
23. Evolution results in the formation of new organisms that are better adapted to the environment.
24. Over 70 works have been ascribed to Hippocrates (around 400 BC) and he is traditionally regarded as «the father of medicine».

25. Herophilus (335-280 BC), the founder of anatomy, was followed and his observations were extended by his pupil Erasistratus (310-250 BC), who was the founder of physiology.

26. The simultaneous contraction of both auricles is followed by simultaneous contraction of both ventricles.

27. In the future, many of today's hereditary diseases will be eradicated through genetic engineering.

28. Because of inadequate blood flow the metabolic needs of cells are not being met and shock occurs.

Упражнение 33*

Прочтите предложения и скажите, форму какого залога - активного или пассивного - должен иметь глагол-сказуемое. Образуйте от приведенной в скобках неопределенной формы глагола (инфинитива) сказуемое, соответствующее контексту.

Пример:

1. The skin (*to compose*) of two main layers.

The skin **is composed** of two main layers.

2. The skeleton (*to make up*) about 18 per cent of the weight of the human body.

The skeleton **makes up** about 18 per cent of the weight of the human body.

1. The number of cells (*to vary*) _____ in different parts of the body.

2. Pigment melanin (*to produce*) _____ by special cells in the epidermis.

3. Cells (*to discover*) _____ in the middle of the seventeenth century.

4. The smallest arteries (*to branch*) _____ into numerous tiny capillaries.

5. The entire bony system (*to pierce*) _____ throughout by a rich network of vessels.

6. Nervous system (*to connect*) _____ the brain to the rest of the body through nerves.

7. Most of the space in the upper right abdomen (*to take up*) _____ by the liver.

8. The development of skeleton and its eventual size and density (*to influence*) _____

_____ by genetic factors.

9. In the small intestine the process of digestion (*to complete*) _____ by the action of the bile.
10. In recent times, genetic engineering _____ increasingly (*to use*) in the field of biotechnology.
11. Most vitamins _____ (*to require*) only in extremely small amounts, and each vitamin _____ (*to be*) present in many different foods.
12. Some vitamins _____ (*to occur*) in inactive forms that _____ (*not to influence*) chemical reactions.
13. In vitamin A deficiency the epithelial tissues of many organs _____ (*to affect*).
14. Vitamin B deficiency _____ (*to accompany*) by poor growth, dermatitis, anemia, kidney and adrenal lesions.
15. Several coenzymes of vitamin _____ (*to exist*).
16. Little _____ (*to know*) of the metabolic role of vitamin D.
17. The body _____ (*to require*) only small amounts of vitamin D which _____ (*to provide*) by a balanced diet and normal exposure to sunlight.
18. Intestinal bacteria _____ (*to manufacture*) vitamin K in the body, and so deficiencies of this vitamin rarely _____ (*to result from*) a poor diet.

Упражнение 34*

А Перепишите текст так, чтобы выделенные курсивом слова, которые выполняют функцию дополнения, стали в предложениях подлежащими, а сказуемые поставьте в соответствующую форму страдательного залога (при необходимости используйте предлог *by*).

В Опираясь на тему, контекст и структуру предложения, выпишите из словаря подходящие значения всех незнакомых слов.

Г Переведите тексты.

Текст 1. Mitochondria are associated with cell respiration and energy formation and storage. They have been called the powerhouse of the cell. Any cell type with a high degree of metabolic activity will contain prominent and numerous mitochondria.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

2. The nucleic acids, as constituents of living organisms, are comparable in importance to proteins. They are involved in the process of cell division and growth, they participate in the transmission of hereditary characters, and they are important constituents of viruses.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

3. The spinal cord is made up of nerve fibres. It runs down from the brain through a canal in the centre of the bones of the spine. These bones protect the spinal cord. Like the brain, the spinal cord is covered by meninges and cushioned by cerebrospinal fluid.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

4. Fat is stored mostly in connective tissue fat cells, which together form adipose tissue, and is present also in many other cells, e.g., the liver and some types of

muscle cells. During normal section preparation, fat is dissolved out and thus appears as clear spaces in the cytoplasm.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



Текст

5. X-rays are absorbed very differently by tissues with various density within body. Hard tissue like bone absorbs the radiation very strongly, blood vessels and muscles less so, while soft tissue such as cartilage is practically transparent.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

6*. Anti-viral drugs were first tried for treatment of AIDS but at best they delayed the inevitable, and at worst they failed completely. Ten years ago, though, a new class of drugs was developed - protease inhibitors.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст 7. А

tremendous amount of physical and chemical activity is going on inside the body at all times. Tissues are being broken down and are being replaced. Protoplasm is constantly being made. This vast quantity of work which is being done by the body generates energy.



Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

8*. Lymph consists of the fluid that bathes the tissues, which is derived from the blood and is drained by the lymphatic vessels. Lymph passes through a series of filters and is ultimately returned to the bloodstream via the thoracic duct. It is similar in composition to plasma, but contains less protein and some cells, mainly lymphocytes.

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

*Текст 9**. Some of the glucose, which is dumped into the bloodstream, is used immediately by the cells. Some is linked into long chains, which are called glycogen, and stored in the muscles and liver. Any leftovers are converted to fat and squirreled away in special fat storage cells and padded in between muscles.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

10*. 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. The food is taken in by means of the lips, teeth and tongue, chewed, lubricated with saliva and swallowed in single bits.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



Текст

11*. At the examination the elderly person is measured, weighed, examined, observed, and questioned about physical, functional, and behavioral changes. The skin is examined for dryness, wrinkles, thinning over the back of the hands, warts, lack of luster. Observations are made of dryness of the eyes, enlargement of the nose and ears relative to face size.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

12. In the lungs the waste carbon dioxide is removed from the blood and breathed out through the mouth. Oxygen is breathed in, collected by the blood, and transported from the lungs to the heart. The heart pumps the oxygen-rich blood to the rest of the body and there the oxygen is used by the cells. The carbon dioxide is absorbed into the blood and the cycle starts again.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



Текст

13. 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.

A

В Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



Текст

16. Early classification systems date from the time of Aristotle (384-322 BC). These early systems recognized only two major groups - the plant and animal Kingdoms. All organisms that moved were classified as animals and all those that remained stationary were called plants. In the 18th century the Swedish botanist Carl Linnaeus (1707-1778) established the first comprehensive classification system of all living things.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

Текст

18. Life is maintained by a huge number of chemical reactions, which are carried out inside cells and are linked in a complex way. These reactions make up the body's metabolism, which has two main aspects. The reactions that produce energy are known as catabolism. The reactions that build up body structures and energy stores are known as anabolism. These processes are controlled largely by hormones and are actually carried out by enzymes.

РАЗДЕЛ 3 МОДАЛЬНЫЕ ГЛАГОЛЫ

3.1. Общие сведения

Модальные глаголы - это особая группа глаголов: они не выражают действие, а обозначают возможность или необходимость его совершения.

В эту группу, в частности, входят следующие глаголы: can, may, must, should.

| Модальный глагол | Значение |
|------------------|---|
| can | 1. объективная возможность (т.е. «мочь», «быть в состоянии») 2. умение, способность (т.е. «уметь», «мочь») |
| may | 1. предположение, вероятность, возможность 2. разрешение |
| must | 1. долженствование 2. запрет (в отрицательных предложениях) |
| should | 1. долженствование в форме рекомендации, пожелания |

Модальные глаголы имеют еще ряд особенностей:

- они не согласуются с подлежащим, т.е. не изменяются ни по лицам, ни по числам (не имеют окончания в 3-м лице единственного числа);
- некоторые из них (*must, should*) не имеют формы прошедшего;
- они не имеют форм будущего времени.

3.2. Модальные глаголы в сочетании со смысловым глаголом в активном и пассивном залоге в простом (неопределенном) времени

Так как сами модальные глаголы выражают не действие, а отношение к нему, за ними всегда следует смысловой глагол, выражающий действие, совершаемое подлежащим или направленное на него.

Если действие выполняется подлежащим, за модальным глаголом следует смысловой глагол в активной форме (без частицы *to*): модальный глагол + V

Пример:

can suppress

Если действие направлено на подлежащее, после модального глагола используется пассивная форма смыслового глагола (без частицы *to*): модальный глагол + *be* + *V₃*.

Пример:

should be given

На русский язык сказуемое с модальным глаголом переводится в зависимости от значения модального глагола и формы смыслового глагола.

Если за модальным глаголом следует смысловой глагол в активной форме, это означает, что действие *выполняется* подлежащим.

Например:

1. This drug can suppress inflammation.
Этот препарат может подавлять воспаление.
2. You may warm the ear drops to body temperature.
Вы можете нагреть (т.е. это разрешается) эти ушные капли до температуры тела.

Если после модального глагола используется пассивная форма смыслового глагола, это означает, что действие *направлено* на подлежащее.

Например:

1. This medicine must be used regularly.
Это лекарство необходимо применять (должно применяться) регулярно.
2. These medicines should be given with care.
Эти лекарственные препараты следует применять с осторожностью.

А Найдите и подчеркните ядро каждого предложения, в котором сказуемое включает модальный глагол и смысловый глагол в активной или пассивной форме.

Б Переведите предложения.

1. Many of these drugs are toxic and should be given with care.
2. A new medicine must undergo extensive testing in the laboratory.
3. The cell may be best pictured as a self-sufficient chemical factory.
4. Blood disorders can vary greatly in their effects.
5. The body could not cope with an excess of blood sugar.
6. The liver, with its many complex functions, can be damaged by various disorders and diseases.
7. Spleen normal in size, consistency and position is soft and cannot be felt on abdominal examination.
8. The brain contains billions of neurons and each may influence or be influenced by hundreds of other neurons.
9. People with back trouble should not lift heavy weights.
10. This ointment should only be used externally.
11. Blood donors must meet certain requirements of age, health and weight.
12. The damage may be followed by painful spasm and inflammation.
13. Some vaccines provide lifelong protection; others must be re-administered periodically.
14. A person with irregular heart beat may be fitted with a pacemaker.
15. Many adults cannot digest lactose because of a deficiency of the enzyme lactase.
16. The eye muscles, or the nerves which supply them, may be affected by disorders which arise later in life.
17. Animals cannot manufacture their own food but must take it in from the outside in some way.
18. 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.
19. There can be no end to physicians' education - they must keep up with new developments.
20. Aspirin should not be given to children who have viral infections.
21. The shape of the brain cannot be determined from the shape of the skull.
22. Backache can result from bad posture, a soft bed or muscle strain, but it can also be caused by rheumatism, typhoid fever and osteoarthritis.

23. What characteristics must a good surgeon have? Surgeons need good eye-hand coordination, manual dexterity, and the physical stamina.
24. Anemia may be caused by a decrease in red cell production, an increase in red cell destruction, or a loss of blood.
25. Direct physical examination may be supplemented by various laboratory examinations.
26. Any change in symptom patterns, such as increase in attack frequency or intensity, should be viewed as serious.
27. These reactions can affect almost any cell or tissue and cause a variety of disorders.
28. Twenty amino acids are necessary for protein synthesis. Eleven can be synthesized by the human body; nine must be obtained from the diet.
29. Mouth-to-mouth resuscitation should be used in almost all circumstances except in severe injury to the face and mouth.
30. Energy-rich nutrients cannot be used directly for muscle contraction - they must be first converted into ATP (adenosine triphosphate).

Упражнение 36

Проанализируйте предложения и вставьте необходимый по смыслу модальный глагол из приведенного ниже списка (цифра в скобках указывает, сколько раз должен быть использован глагол).

| |
|---|
| can (3), cannot (4), may (5), must (4), should (1) |
|---|

1. A virus _____ multiply hundreds of times.
2. Each side of the heart _____ perform different work.
3. With age calcium loss _____ be entirely prevented.
4. A wide variety of other systems _____ be damaged by the rheumatoid process.
5. All body cells _____ be constantly supplied with oxygen.
6. Healthy bones _____ be built without calcium salts.
7. These drugs _____ improve the course of the disease.
8. Most viruses _____ be seen only with electron microscope.
9. The heart _____ be called a dual pump.
10. Life _____ exist in the absence of water.
11. Like any other tissue in the body, the heart muscle _____ receive oxygen-rich blood.
12. Heavy physical exertion _____ increase the rate of blood flow to the muscles.
13. The blood in the capillaries _____ be continually replaced with fresh blood.

14. An abnormal heart valve _____ cause malfunction.
15. Many foods _____ cause allergic reactions.
16. In an anemic person, the blood _____ provide the tissues with enough oxygen.
17. Patients _____ carefully follow their doctor's advice on health care and check-ups.

3.3*. Модальные глаголы в сочетании со смысловым глаголом в перфектной форме (активный залог)

Если за модальным глаголом следует смысловый глагол в перфектной форме (*have + V3*), то глагол-сказуемое выражает действие, которое могло бы произойти или вероятно произошло в прошлом. Иными словами, сочетание модального глагола со смысловым глаголом в перфектной форме передает различные оттенки предположения относительно действия, произошедшего в прошлом.

| | |
|------------------------------|------------------------------|
| must + have V ₃ | должно быть..., наверняка... |
| can + have V ₃ | вероятно... |
| may + have V ₃ | возможно... |
| should + have V ₃ | следовало бы... |

Иногда модальный глагол сам стоит в форме прошедшего времени (*might, could*) и выражает еще меньшую степень вероятности.

Упражнение 37

А Найдите сказуемое, выраженное модальным глаголом в сочетании со смысловым глаголом в перфектной форме.

Б Переведите предложения.

1. The ancient Romans may have used soap 3,000 years ago.
2. Microorganisms could have survived a journey from Mars to Earth.
3. Early in its history our solar system could have included many worlds with liquid water, the essential ingredient for life.
4. The first epidemic in the Roman Empire could have been smallpox and it was devastating.
5. Only one source of energy - nuclear energy - could have kept the sun shining that long - 4.600.000.000 years.
6. The earliest Chinese description of bubonic plague dates back from AD 610. Outbreaks of bubonic plague must have depended on the prior dispersal of the black rat and its fleas.

7. According to some scientists, the cause of extinction of prehistoric animals may have been different for each group of animals.

8. Now hot and dry, Venus may once have had oceans as vast and deep as Earth's.

9. One of the most active areas during REM (rapid eye movement) sleep is the limbic system, which controls our emotions. According to research REM may have evolved for physiological reasons.

Тексты для тренировочного перевода к разделу 3 *Выполните задания в следующей последовательности:*

А Просмотрите мини-тексты и сформулируйте в одном предложении, о чем говорится в каждом из них.

Б Прочитайте каждое предложение в мини-тексте, найдите и подчеркните его ядро. Начните с глагола-сказуемого, который должен иметь *личную форму* или включать *модальный глагол*.

В Опираясь на тему, контекст и структуру предложения, выпишите из словаря подходящие значения всех незнакомых слов.

Г Переведите тексты.

Текст 1. Plasma can be given to anyone, regardless of blood type. It can be dried and transported almost anywhere, ready for immediate use after addition of the appropriate fluid.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

2. The bony structures must be regarded as active store-houses of mineral matter. The body can draw upon bones for constituents like lime and phosphates. Under certain conditions the bones indeed may give up much of their mineral matter. They become soft and can no longer function as an effective framework.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

3. Disease often affects anatomy, and changes in anatomy can cause disease. An abnormal heart valve can cause malfunction. Trauma to the skin may damage its ability as a barrier. This may lead to infection. Cancer can directly destroy normal tissue or produce pressure that ultimately destroys it.



Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



Текст

4. 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.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

5. Damage to the brain can come from the inside or the outside. From the inside, the brain can be damaged by tumours, haemorrhages and clots. Brain tumors and haemorrhages have direct effects; for example, tumours can invade other parts of the brain.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

6. The essence of renal function is twofold. The kidney must remove the end products of metabolism from the blood, which are constantly being formed in the body. The kidney must actively reabsorb from the tubular filtrate those substances that are needed by the body, such as glucose and electrolytes.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



Текст

7. Food may be looked upon as the «fuel of life». The body may be compared to a machine. It converts the energy in food into the energy of the body. This body energy is utilized in one of three ways. It may be used as heat, as energy for work, or it may be stored for an emergency.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

8. Allergy is a body reaction that occurs in persons sensitive to certain substances. A substance that is harmless to a non-allergic person may cause mild to extremely severe symptoms in an allergic person. A person can develop an allergy at any time, but in most cases the first symptoms appear during childhood. Many foods may cause allergic reactions.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



Текст

10. Genes are an integral part of the organism, but their activity can be affected by the organism's environment. For example, hormones that circulate in the blood make their way into the cell and influence the cell's activity. The flow of hormones themselves can be affected by environmental events such as light, day length, nutrition, and behavior.

A

B Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



Текст

11. The severity of the 1918 pandemic could either have been due to the virus itself or to the unusual circumstances of the time. Europe had been at war for four years. Many were stressed, exhausted, and poorly nourished. Troops lived in extremely unhygienic conditions, and large groups of them moved rapidly from place to place. Those conditions encouraged the spread of airborne viruses like flu.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

12. Our bodies cannot retain water-soluble vitamins as long as fat-soluble vitamins. The body excretes excessive intakes readily, but can retain small amounts for weeks or months in various organs and tissues. Fat-soluble vitamins, by contrast, are stored in fatty tissue. Therefore, daily intake of these vitamins is not as crucial. Too much vitamin A and vitamin D actually can be detrimental to health.

A

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



Текст

13. The body temperature of mammals must lie within the range 35 °C to 40 °C and they must breathe an atmosphere of about 21 per cent oxygen with about 0.03

per cent carbon dioxide at a pressure around 760 mm of mercury. Temporary deviations from these conditions can be tolerated: there are mechanisms of temperature regulation and ventilation rate.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.



| английское слово | перевод/значение |
|------------------|------------------|
| | |



Текст

14. Healthy people can go without food for several weeks. But unconscious patient should be fed. He can receive his food via a naso-gastric tube, a thin plastic tube which goes through his nose and into his stomach. The nurses can give fluids down the tube several times a day. In intravenous feeding food must be digested artificially and then given to the patient. It is therefore simply a mixture of glucose, amino acids, and tiny particles of fat.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

В

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

15. 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. 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.

А

Б

Прочитайте каждое предложение, найдите и подчеркните ядро.

●

| английское слово | перевод/значение |
|------------------|------------------|
| | |

●

Текст

16. The patient who is taking nitroglycerin should keep the medication at hand at all times. It should be kept in a dark glass container, free from heat and moisture. The drug does not cause addiction 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.

А

Б Прочитайте каждое предложение, найдите и подчеркните ядро.

●

| английское слово | перевод/значение |
|------------------|------------------|
| | |

Г

Текст

17. The world's most famous boy king, Tutankhamen, may have died in accident from blood infection. A precision scan of the mummy, which was uncovered in 1922, has revealed the fracture above the left knee as the most likely cause of death. The kneecap was badly twisted to the outside of the leg, and the wound was open to the outside world and vulnerable to infection.

РАЗДЕЛ 4 ГЛАГОЛ В ПОВЕЛИТЕЛЬНОМ НАКЛОНЕНИИ (ПРЕДЛОЖЕНИЯ БЕЗ ПОДЛЕЖАЩЕГО)

4.1. Общие сведения

Сказуемое английского предложения может быть выражено глаголом в изъявительном, повелительном или сослагательном наклонении. Грамматическая категория наклонения используется для того, чтобы говорящий мог выразить, как с его точки зрения действие, обозначенное глаголом-сказуемым, соотносится с действительностью.

В разделах 1 и 2 рассматривались формы глагола в *изъявительном* наклонении, выражающие *реальное действие* в настоящем, прошедшем или будущем времени.

Формой глагола в повелительном наклонении говорящий передает побуждение, приказание, приглашение к действию. Такие предложения начинаются с глаголасказуемого, а подлежащее, как правило, в них отсутствует. Употребление глагола в повелительном наклонении нередко встречается в текстах аннотаций к лекарственным препаратам, правилах, указаниях и рекомендациях.

Пример:

Rub this medicine gently into your skin.

Don't use lifts in fire.

При переводе данной грамматической формы на русский язык, как правило, необходим глагол в повелительном наклонении.

Например:

Rub this medicine gently into your skin.

Мягко вотрите лекарство в кожу.

Don't use lifts in fire.

В случае пожара не пользуйтесь лифтом.

Упражнение 38

А В следующих предложениях найдите и подчеркните сказуемое, выраженное глаголом в повелительном наклонении.

Б Переведите предложения.

I. These Basic Health Habits Are the Foundation of Lifelong Health and Well-being

1. Be physically active every day.
2. Keep your brain active.
3. Maintain a healthful body weight.
4. Be tobacco-free.
5. Avoid drugs and excess alcohol.
6. Rest your brain - get at least six hours sleep a night.
7. Walk for health - walk as often as possible.
8. Don't worry too much. Manage stress.
9. Take care of your teeth.
10. Avoid exposure to radiation.
11. Eat right - eat healthily. Eat a variety of foods; eat plenty of fruit and vegetables.
12. Avoid too much fat and sugar.
13. Limit your exposure to strong sun.
14. Do something enjoyable every day.

II. General Lab Safety Rules

1. Work in the lab only in the presence of an instructor.
2. Walk! Do not run in the lab.
3. Do not eat, drink beverages, or chew gum in the lab.
4. Never taste chemicals.
5. Avoid contact with chemicals. Wear safety glasses whenever necessary.
6. Clean and dry your lab table.
7. Never rely on the shape, size or colour of the bottle. Read the label.
8. Always wash hands after experiments.
9. Report any accident (spill, breakage, etc.) or injury (cut, burn, etc.) to the instructor immediately.
10. Carefully follow all instructions.

Упражнение 39

А Используя приведенные ниже слова, составьте рекомендации для людей, желающих вести здоровый образ жизни. Начните предложения с повелительной формы глагола.

Б Переведите предложения.

Simple Ways to Live a Healthy Lifestyle

1. exercise/regular/get *Get regular exercise.*

Регулярно выполняйте физические упражнения.

2. active/keep/physically

_____ 3.

weight/lose/excess

_____ 4.

smoke/not/do

_____ 5.

rest/get/enough

_____ 6.

hours/night/sleep/7 to 8/each

_____ 7.

diet/healthy/a/eat

_____ 8.

a/plant/a/pet/and/a/pet/plant - because plants and pets can be very healing.

Упражнение 40

А Составьте правила поведения при пожаре. Начните предложения с повелительной формы глагола, выбрав соответствующее по смыслу слово из предложенного списка.

Б Переведите предложения.

close, do not, leave, move, shut, stay, tell

If You See

a Fire

1. _____ calm, don't panic.
2. _____ the door to the room with a fire.
3. _____ other people about the fire as soon as possible.
4. _____ the building immediately.

5. _____ run. Walk quickly but calmly.
6. _____ near the floor. The best air is at floor level.
7. _____ all doors behind you.

ТЕКСТЫ ДЛЯ КОНТРОЛЬНОГО ПЕРЕВОДА К РАЗДЕЛУ 1

1. All living things with a blood circulation system have blood pressure, which varies considerably at different times. In healthy people, blood pressure varies throughout the day and depends on factors such as physical activity and stress. There is a lot of difference between the blood pressure levels of children and of older people. Blood pressure rises considerably under stress situations.

Environmental stress, food habits, lack of exercise and in general city life, are making a deep impact on human life, and as a result, for many, a rise in blood pressure is inevitable. In people who have high blood pressure, the heart always pumps with greater force than necessary, and blood pressure is never within the normal range.

2. In every drop of blood there are 250 million red blood cells. There are about 5 million red blood cells in each cubic millimeter of blood in the average adult man and 4.4 million per cubic millimeter in the average adult woman. There are far fewer white blood cells than red blood cells. In the blood stream there is only one white cell for approximately 700 red cells. There are normally about 8,000 white corpuscles in every cubic millimeter of blood. There are two main varieties: polymorphs and lymphocytes. Lymphocytes have a large nucleus that fills most of the cell. There are two types of lymphocytes, both of which originate before birth in bone marrow. Only mature lymphocytes carry out immune responses. During maturation process many different types of B and T lymphocytes develop, perhaps many millions.

3. 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 fourfifths 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.

4. 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. The average adult's lungs contain about 600 million of these spongy, air-filled sacs that are surrounded by capillaries. We inspire more than 25,000 times a day and during this time inhale around 16 kg of air.

5. G. Mendel (1822-1884), an Austrian monk, studied and worked out the basic Laws of heredity. For eight years the focus of his attention was the garden pea, which has a number of special features that make it ideal for studies which he carried out. Mendel built a hypothesis on the basis of his huge number of results. When he carried out experiments with pea plants he noticed that some characteristics were dominant over others, e.g. tallness is dominant over shortness in these plants. Although Mendel did his work in the 19th century, its significance became clear only in the 20th. The study of genetics in the 20th century established that there are dominant and recessive genes for many characteristics, and this is particularly important in some diseases.

6. The skin, which covers the entire surface of the body and forms an essential barrier between the body and its surroundings, is the body's largest organ. It provides protection against injury, infection by microorganisms, and damage by harmful rays in sunlight. 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. On average, 12 feet of nerves, 3 feet of blood vessels, 10 hair follicles, 100 sweat glands and hundreds of nerve endings are in each square centimeter of skin. The average woman has about 17 square feet of skin and average man has 20 square feet. In an average adult the skin weighs about 5 kg.

7. In 1928 a British microbiologist, Frederick Griffith, was developing a vaccine 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 had not established 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 leaked from the dead pathogens and entered the living bacteria and caused the transformation of a nonpathogen to a pathogen. Then other scientists investigated the specific substance. They were looking for the molecular basis of heredity. However, it remained a puzzle until 1944.

8. 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 relied more and more on facts and less on philosophical speculations. The flood of pathological discovery in the 19th century came largely from microscopical examination. Now pathology dealt 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 studying 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, in the past pathologists described in detail what had gone wrong with a patient's anatomy, but little about his physiology.

ТЕКСТЫ ДЛЯ КОНТРОЛЬНОГО ПЕРЕВОДА К РАЗДЕЛУ 2

1. 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 process of coagulation. In injury, thromboplastin is liberated from the tissues and the coagulation process begins promptly. Excessive bleeding due to a deficiency of thromboplastin is observed in patients with hemophilia.

2. 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.

3. 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.

4. 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. For the protection against mechanical injury, the skin develops thickness, as on the sole of the foot, and on the palms of the hand.

5. 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 relationships 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.

6. The heart wall is composed of three layers of tissue. The inside of the heart is lined with a smooth membrane, the endocardium, and the whole structure is enclosed in a loose fibrous bag, the pericardium. The thick muscular wall essential to normal action of the heart is called the myocardium that receives its blood supply from the two large coronary arteries and their branches. The outside of the

heart and the inside of the pericardium are covered with a slippery membrane, which prevents friction during the heart contraction.

7. The strong inner framework of the body is formed by the skeletal system. The skeletal system, which is made up of separate bones that are linked together at joints, not only gives the body its shape, but also provides anchorage for the muscles that move it. It supports and protects vital organs, such as the brain, the heart, and the lungs. Bones themselves are rigid, but they are linked by joints that give the skeleton a great deal of flexibility. Before birth, the skeleton is made mostly of cartilage, and as a result is less rigid.

8. The skull, which is the most complex part of the skeleton, shapes the head and face, protects the brain, and houses the special sense organs. It is made up of 22 separate bones, 21 of which are locked together by immovable joints. The only movable skull bone is the mandible, or lower jaw. Skull bones are divided into two sets. The cranial bones form the upper part, or cranium, which surrounds, supports, and protects the brain and the organs of hearing. The facial bones form the framework of the face and jaw, and provide attachment sites for the muscles that produce facial expressions.

9. Ancient Greece was an immensely fertile producer of philosophers who pondered such fundamental questions as the meaning and origins of life. Some of their theories were way ahead of their time. Perhaps the most famous Greek philosopher was Aristotle (384-322 BC). He devised hundreds of explanations about the natural world, space, the nature of matter, and forces and motion. Unfortunately, many of his ideas were wrong but were taught to students of «natural philosophy» for hundreds of years, and were challenged only during the Renaissance period in the 16th and 17th centuries.

10. Medicine and pharmacology are two sciences which have changed a great deal in recent times. Long ago, 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. 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.

ТЕКСТЫ ДЛЯ КОНТРОЛЬНОГО ПЕРЕВОДА К РАЗДЕЛУ 3

1. Artificial respiration can be given with no equipment. A method of artificial respiration which has now found favour is known as «mouth-to-mouth respiration». The principle of this method is as follows: air from the resuscitator's lungs is breathed into the patient's lungs. The patient's nostrils should be closed by the resuscitator's hand and the patient's head should be held back. The resuscitator must also guard against the use of excessive force: this might propel sea water or vomit back into the patient's lungs.

2. Food is one of the sources of the raw materials that cells must obtain from the external environment, but it is not always in a form that cells can use. Food is taken in at the mouth and broken down by physical and chemical means. Then it can pass through the walls of the alimentary canal into the blood. Substances that cannot be used by the cells are regarded as waste materials. The accumulation of these substances will upset the fine balance which must be maintained between chemical substances in the internal environment.

3. 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. In many hospitals heartattack victims are routinely admitted to coronary care units. In these units the electrical rhythm of the heart is monitored continuously, and arrhythmias (abnormal rhythms) can be treated promptly. In case of low heartbeat rate, a temporary pacemaker may help. The pacemaker is inserted into a vein and moved to the right ventricle. There its electrical impulses stimulate the heart and it beats more quickly.

4. Each organ system of the body may be attacked by a number of diseases. These diseases have certain things in common. Some symptoms and signs may be particular to the individual organ. The central nervous system may be attacked by the same diseases as other organs. The nervous system controls the working of the body in many ways, and diseases may affect not only a part of the system but also another part of the body. The various organs of the nervous system may be affected by inflammatory processes, degenerative disease, and injury. These are referred to as neurologic disorders and may be manifested by paralysis, sensory malfunction and convulsive seizures.

5. There are 15 vitamins, and most of them must be supplied by food. Vitamins were formerly extracted from natural sources, but now the majority is made by synthetic methods. Vitamins are needed in very small amounts by the body. But lack of vitamins can cause a deficiency disease. The exact vitamin requirements for good health often are not known with accuracy; they vary with age, weight, sex, and state of health. Vitamins should not be used as «tonics». The indiscriminate

use of vitamin preparations may sometimes lead to overdosage, a problem that has arisen in recent years. For example, overdosage of vitamins A, D, or K may result in a serious disease.

6. 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. The left side of the heart is stronger and thicker than is the right. The halves of the heart are alike: each of them is composed of two chambers, an auricle and a ventricle. Between these chambers are placed valves which ensure the passage of blood only in one direction, namely, from the auricle to the ventricle.

7. The first epidemic in the Roman Empire could have been smallpox which must have killed one-third of the Rome's population. Another epidemic in 251 AD may have been measles and was equally devastating. There were about 5,000 deaths per day in Rome at its peak. Rome's rural population may have been even more affected. This die-off may have led to depopulation of agricultural lands. After a massive epidemic, which occurred in 542-543 AD probably due to bubonic plague, Rome's armies fell to the Moslem armies, and the Dark Age of Europe began. Thus, infectious diseases may have contributed to the fall of the Roman Empire.

КЛЮЧИ К НЕКОТОРЫМ УПРАЖНЕНИЯМ

Упражнение 2

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

Упражнение 10

1 - are; 2 - secrete; 3 - are; 4 - consist of/move; 5 - enters; 6 - divide; 7 - consist; 8 - has; 9 - vary; 10 - are; 11 - is; 12 - receive; 13 - are; 14 - produce; 15 - is; 16 - grow; 17 - are; 18 - produces; 19 - are; 20 - is; 21 - filter; 22 - receives.

Упражнение 12

1 - encloses; 2 - vary; 3 - protects; 4 - occupy; 5 - complete; 6 - encodes; 7 - distribute; 8 - surrounds/strengthens; 9 - carry out; 10 - innervate; 11 - cause.

Упражнение 16

1 - nerve; 2 - cell; 3 - energy; 4 - animal; 5 - sweat; 6 - taste; 7 - ear; 8 - sense; 9 - blood; 10 - body.

Упражнение 26

1 - f; 2 - c; 3 - a; 4 - g; 5 - h; 6 - e; 7 - b; 8 - d. Упражнение 29

1 - live; 2 - is rising; 3 - deals; 4 - were; 5 - secrete; 6 - varies; 7 - has been burning; 8 - have used/have been using; 9 - have been performing.

Упражнение 31

1 - c; 2 - a; 3 - f; 4 - d; 5 - g; 6 - e; 7 - b. Упражнение 33*

1 - varies; 2 - is produced; 3 - were discovered; 4 - branch; 5 - is pierced; 6 - connects; 7 - is taken up; 8 - is influenced; 9 - is completed; 10 - is used; 11 - are required; 12 - occur/do not influence; 13 - are affected; 14 - is accompanied; 15 - exist; 16 - is known; 17 - requires/is provided; 18 - manufacture/ result from.

Упражнение 36

1 - can; 2 - must; 3 - cannot; 4 - may; 5 - must; 6 - cannot; 7 - may; 8 - can; 9 - may; 10 - cannot; 11 - must; 12 - may; 13 - must; 14 - can; 15 - may; 16 - cannot; 17 - should.

Упражнение 39

2 - Keep physically active. 3 - Lose excess weight. 4 - Do not smoke. 5 - Get enough rest. 6 - Sleep 7 to 8 hours each night. 7 - Eat a healthy diet. 8 - Plant a plant and pet a pet - because plants and pets can be very healing.

Упражнение 40

1 - Stay calm. 2 - Close the door to the room with a fire. 3 - Tell other people about the fire as soon as possible. 4 - Leave the building immediately. 5 - Do not run. 6 - Move near the floor. 7 - Shut all doors behind you.

