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АНГЛИЙСКИЙ ЯЗЫК

учебное пособие

Для студентов первого курса фармацевтического факультета

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Пособие включает текстовый материал для практики перевода и тренировки различных видов чтения, лексические, грамматические и коммуникативные упражнения, грамматические справочные материалы, необходимые в учебном процессе, а также для оценки знаний представлены тестовые задания и эталоны ответов

Цель учебного пособия – сформировать у студентов первого курса навыки понимания и перевода текстов профессионально-ориентированной направленности с опорой на грамматические явления, характерные для профессионально-ориентированной литературы на английском языке, а также навыки ведения вопросно-ответной беседы.

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ВВЕДЕНИЕ

Настоящее учебное пособие предназначено для студентов 1 курса фармацевтических факультетов медицинских вузов и составлено с учетом языковой базы, сформированной у студентов в процессе изучения английского языка в средней общеобразовательной школе.

Целью пособия является формирование у студентов навыков чтения и перевода текстов по специальности, пополнение их словарного запаса специальной лексикой, а также формирование навыков и развитие умений профессионально-ориентированной устной речи для общения на английском языке в области фармации и медицины. Пособие включает текстовый материал для практики перевода и тренировки различных видов чтения, лексические, грамматические и коммуникативные упражнения, грамматические справочные материалы, необходимые в учебном процессе.

Комплекс упражнений включает дотекстовые и послетекстовые лексические упражнения, грамматические упражнения на повторение ранее изученного материала и отработку новых тем, а также упражнения для развития навыков устной речи, что позволяет последовательно усваивать предлагаемый лексико-грамматический материал и учиться применять полученные знания на практических занятиях по иностранному языку.

В основу комплекса упражнений данного учебного пособия положены принципы систематичности, последовательности и сознательности выполнения, упражнения даны в порядке нарастания трудностей; устные упражнения чередуются с письменными. Пособие также включает несколько приложений, необходимых в качестве средств опорного характера для практической работы. Предлагаемый в пособии грамматический справочник нацелен на закрепление и повторение обучающимися пройденного материала. Упражнения для развития навыков устной речи позволяют студентам научиться составлять сообщение на основе текста, выражать свое мнение по поводу прочитанного, вести беседу в рамках изученной тематики.

ТЕМА 1

НАШ УНИВЕРСИТЕТ

1. Ознакомьтесь с речевыми сегментами, необходимыми для беседы по теме. Обратите внимание на произношение; определите время сказуемого в каждом предложении.

to have the opportunity to do smth – иметь возможность что-то делать

– Do you have the opportunity to become a good doctor?

Yes, I do (No, I don't).

– He has the opportunity to get a higher education.

– We had the opportunity to take books, text-books and literature on special subjects at the library.

to enter smth., entrance – поступить, вступительный

– What university did you enter?

– I entered the Medical University.

– I will enter the Medical University next year.

– My brother had to take entrance examinations to enter the University.

pediatric (pharmaceutical, treating, medico-biological…) faculty

– What faculties does the Medical University have?

– There are 5 faculties in our University.

to work for exams (credit-tests, the coming session) – готовиться к экзаменам *(зачетам, предстоящей сессии)*

to work at (on) a text-book – работать над учебником

– He worked hard on English in order to pass the exam successfully.

– I read many special books in Anatomy to work for the exam.

to graduate from smth., graduation from smth – оканчивать что-либо, окончание чего-либо

– Many students graduate from the Medical University and become doctors of different specialities.

– After graduation from the pediatric faculty the students will treat children.

2. Ознакомьтесь со словами и выражениями к тексту.

specialist	– специалист
to cure	– лечить
science	– наука
research	– исследование
professor	– профессор
surgeon	– хирург
therapeutist	– терапевт
to pay attention to smth.	– уделять внимание чему-либо
ear-throat and nose diseases	– лор-заболевания
to train	– обучать, готовить
head nurse	– старшая медицинская сестра
doctors' advanced courses	– курсы усовершенствования врачей
clinic of eye diseases	– клиника глазных заболеваний
surgery	– хирургия
cardiology	– кардиология
psychiatry	– психиатрия
genetics	– генетика
pharmacology	– фармакология
maternity and child protection	– охрана здоровья матери и ребенка
cardiovascular system	– сердечно-сосудистая система

3. Подберите однокоренные слова:

Модель: *biology - biological - biologist*

therapy, surgery, pharmacy, science, to educate, to graduate, medicine, to enter, to train, to protect.

4. Найдите в цепи данных слов пары, имеющие сходное значение:

to educate, well-known, for example, to discover, doctor, to have the opportunity, to train, to cure, faculty, to investigate, department, to treat, for instance, famous, to have the possibility, physician.

5. Прочтите текст и переведите.

OUR UNIVERSITY

The Siberian State Medical University was founded in 1888 as the medical faculty of the Tomsk Imperial University and at present it is the leading medical educational establishment in Siberia and the Far East.

The university has 5 faculties – treating, pediatric, pharmaceutical, medico-biological, the faculty of behavior medicine and management.

The students who graduate from the treating faculty will cure different diseases of adults. Some of them will become surgeons, the others – therapeutists and so on.

The students of the pediatric faculty study children diseases: they will treat children.

The pharmaceutical faculty prepares specialists of pharmacy. They will work at analytical laboratories, pharmaceutical plants and at chemist's shops.

The medico-biological faculty prepares specialists who will investigate inner physical and chemical processes in a human being; they will study reasons of diseases and help physicians to do away with them.

The graduates of the faculty of behavior medicine and management will help people to cope with their mental disorders and social disadaptation and work in the field of Health service management.

There are clinics for 1055 beds such as clinic of eye diseases, ear, nose and throat diseases, of surgery, therapy and so on.

In 1980-s large research institutes of oncology, cardiology, phychiatry, medical genetics, pharmacology were separated from the Tomsk Medical Institute. At present these research institutes represent the Tomsk Scientific Center of the Siberian department of the Russian Academy of Medical Science and cooperate with the University as the united educational scientific practical complex “Medicine”.

The University deals with many important problems. For example, the scientists of the pharmaceutical faculty discover and study new

pharmacological preparations, the professors of the treating faculty discover new methods of treatment. Much attention is paid to maternity and child protection, physiology and pathology of cardiovascular system and others.

The Tomsk Medical University has trained over 60000 doctors and pharmacists. Many famous Russian scientists who graduated from the University have created famous scientific schools well known not only in Russia.

6. Используйте слова и выражения, данные в пунктах 1 и 2.

1. Every person… to study at the Medical University and become a doctor.
2. Young people have to pass exams… the University.
3. There are several clinics such as…
4. The students who… the pediatric faculty will cure children diseases.
5. Much attention is paid to… and pathology of… and others.
6. The University has 8 faculties. They are … .

7. Выразите Ваше мнение о возможностях, предоставленных Вашим университетом.

1. I have never had the opportunity … .
2. People today have much more opportunity … .
3. But there is no much opportunity … .
4. I'd like to have the opportunity … .
5. Where I live there is a plenty of opportunity … .

8. Ответьте на вопросы Вашего одногруппника, используя “to have (much) opportunity to do smth”.

Модель: – *Do you speak English often?*

– *No, I don't have much opportunity to speak English.*

1. Do you go to the library often?
2. Do you see many foreign films?

3. Do you pass the exams ahead of the time?

4. Do you use your English much?

5. Do you live in the hostel?

9. Определите в каждом ряду слов то слово, которое не сочетается с другими словами ряда:

1) treating, pharmaceutical, pediatric, medico-biological, therapeutist;

2) oncology, preparation, surgery, psychiatry, pharmacology, medical genetics;

3) therapeutist, cardiologist, science, pharmacist, surgeon;

4) ear-throat and nose diseases, pharmacy, children diseases, cardiovascular diseases;

5) to protect, to discover, to research, to investigate.

10. Задайте вопросы так, чтобы предложения, данные ниже, служили ответами.

1. When…?

– In 1888 it was the medical faculty of the Tomsk Imperial University.

2. What…?

– There are clinics of eye diseases, ear-throat and nose diseases, of surgery, therapy and so on.

3. …?

– Yes, they were. In 1980-s large research Institutes were separated from the Tomsk Medical University.

4. …?

– Yes, it does. It cooperates with large research Institutes.

5. How many…?

– The Tomsk Medical University has trained over 60.000 doctors and pharmacists.

11. Прочтите и переведите диалог с помощью данных выражений:

to be interested in	– интересоваться
to work hard	– усердно работать
to pass an exam	– сдать экзамен
in the first year	– на первом курсе
general subjects	– общеобразовательные предметы
to come easy	– даваться легко
weak point	– слабое место
to work on	– работать над чем-то
to gain deep knowledge	– накапливать глубокие знания
to fail at	– провалиться на (экзамене)
to work by fits and starts	– работать спустя рукава
vocation	– призвание

Ann: Hello, Peter. Haven't seen you for ages. What are you doing now?

Peter: I'm studying at the medico-prophylactic faculty of the Siberian State Medical University.

Ann: Oh, how very interesting! You know, my sister is leaving school this year and her dream is to enter this University. Will you tell me something about your studies?

Peter: With pleasure. What are you interested in?

Ann: First of all I'd like to know what entrance exams did you have to take to enter the University?

Peter: They were biology, chemistry and literature. To tell the truth, the entrance exams were rather difficult, but I worked hard and passed them successfully.

Ann: What subjects are you studying in the first year?

Peter: We study general subjects: anatomy, biology histology, Latin and many others.

Ann: Which of them do you find more difficult?

Peter: Anatomy comes easy to me and chemistry is my weak point. I have to work on the Atlas of Human anatomy in the dissecting room.

Ann: What other faculties are there at the Medical University, besides the treating one?

Peter: There are 5 faculties: pediatric, pharmaceutical, medico-biological, the department of human behavior and management, the doctors' advanced courses.

Ann: Tell me, please, about the pharmaceutical faculty. What will the students of this faculty do after graduation?

Peter: The pharmaceutical faculty prepares specialists of pharmacy. They will work at analytical laboratories, pharmaceutical plants and at chemist's shops.

Ann: How long will your course run?

Peter: Six years. Already in the third year we will undergo our medical practice in the clinics of the University.

Ann: How many classes do you have daily? As far as I know, the students of the Medical University should study twenty-four-hours.

Peter: As a rule we have one or two lectures, then a seminar or a practical class. After classes we usually go to the Library to take the necessary books and journals in order to prepare home-work.

Ann: Is it hard to study at your faculty?

Peter: If you attend all classes and work regularly you are sure to gain deep knowledge and get good marks. On the whole to study at the University is difficult but interesting.

Ann: Do students sometimes fail at the exams?

Peter: They do, if they work by fits and starts.

Ann: Thanks for your useful information. I think my sister can enter and study at the Medical University, she is a real hard worker. She says, medicine is her vocation.

12. Побеседуйте с Вашим другом об университете, в котором Вы учитесь.

1. – Where do you study?

– … .

– Whom will you become after graduation from the University?

– … and I will have the possibility to work at … .

2. – How many faculties are there at the Medical University? And what are they?

   – … .

   – How long does the course of study at the treating faculty take?

   – … and already in the third year the students undergo … .

   – What clinics are there at the University?

   – There are … .

3. – Tomsk is a scientific and educational center, isn't it?

   – … It is one of … .

   – As I know, it provides … and trains specialists for our medical science and practical doctors.

4. – Where do the students prepare their home-work?

   – … and also there are many students in the dissecting room.

   – What do they do there?

   – Only hard work in … will give them … to gain … .

13. Ваш друг собирается поступить в медицинский университет, ответьте на его вопросы.

1. What higher educational establishment do you study at?
2. When was the Siberian State Medical University founded?
3. How many departments does the University have?
4. What clinics are there?
5. What research institutes cooperate with the University nowadays?
6 What problems does the University deal with?
7. What specialists does the medical faculty prepare?
8. What diseases do the students of the pediatric faculty study?
9. Where will the students of the pharmaceutical faculty work after graduation?
10. What do the graduates of the medico-biological faculty deal with?

14. Прочтите и запомните значения следующих слов и словосочетаний:

currently	– в настоящее время
famous sights	– знаменитые достопримечательности
entertainment	– развлечение
wealth	– богатство
local British Council office	– местное представительство Британского Совета
to advise	– советовать
to fit into	– соответствовать
overseas students	– зарубежные студенты
accommodation	– проживание
Student’s Union	– студенческий союз
Environmental Sciences	– науки, относящиеся к сфере «окружающая среда»
to involve	– вовлекать, включать в себя

15. Произнесите правильно следующие слова:

currently, famous, sights, entertainment, wealth, local, Council, accommodation.

16. Что Вы знаете об образовании за рубежом?

1. Have you ever dreamed of studying abroad?
2. Where do you want to study abroad?
3. What information have you got about British or American Universities?

17. Прочтите и переведите текст.

STUDY SCIENCE AND HEALTH IN LONDON

Students from over 90 countries are currently studying at the University of East London. More than quarter of a million students choose to study in London. Famous sights, entertainment, a wealth of museums,

galleries and libraries – all of it can be enjoyed and explored in London. What qualifications do you need? Your local British Council office will advise you on how your own qualifications fit into the British system.

Overseas students are guaranteed University or private accommodation if you apply early enough. All students belong to the Student's Union, which has many societies, including several of interest to international students, for example, Chinese and African. You can study Biochemistry and Biotechnology in London. You can study Environmental Sciences, Health, Microbiology, Parasitology, Pharmacology, Physiotherapy, and Nursing.

The study of the environment involves a wide variety of scientific disciplines as well as areas such as politics, economics, sociology and law.

In particular Environmental studies examine the relationship between humanity and the environment. As for Health Studies, the degrees in this subject area are designed for those who have an interest in health topics.

Microbiology is one of the three subject areas within the Department of Life Sciences and provides a home base for students specializing in microbiological subjects.

Many international students study Physiology and Pharmacology, because Physiology is the study of the biological functions of the human body and Pharmacology is the study of drugs, their biological effects on physiological systems.

These sciences are very important for doctors. Future doctors can also study Physiotherapy. It is a health care profession which adopts physical means and practical approaches in the prevention and treatment of disease and disability.

For those who are going to be qualified nurses, there are many degrees in professional studies in nursing, they are specifically designed for qualified nurses to give them the academic development to widen their career opportunities.

18. Ответьте на вопросы.

1. How many students study in London?
2. What can be enjoyed in London?
3. Where can you get the information about studying in London?
4. What subjects can you study?

5. Are there any possibilities to be qualified nurses?

19. Найдите английские эквиваленты соответствующим словам и выражениям:

знаменитые достопримечательности, богатство музеев, квалификация, соответствовать Британской системе, гарантировать, принадлежать, включающий, научные дисциплины, политика, обеспечивать, специализирующийся, квалифицированные медсестры.

20. Обсудите следующие вопросы в диалогах.

1. What science is the most interesting for you and why?

2. What Universities are famous in your country?

3. Where can you get the information about studying at the University?

ТЕСТОВЫЕ ЗАДАНИЯ

Выберите один правильный ответ.

1. THE SIBERIAN STATE MEDICAL UNIVERSITY WAS FOUNDED IN
   1) 1898
   2) 1888
   3) 1910

2. THE FIRST FACULTY OF THE TOMSK IMPERIAL UNIVERSITY WAS
   1) law faculty
   2) medical faculty
   3) faculty of History

3. AT PRESENT THE SIBERIAN STATE MEDICAL UNIVERSITY IS THE
   1) leading medical establishment in Siberia and the Far East
   2) leading medical establishment in Russia
   3) leading medical establishment all over the world

4. THE UNIVERSITY HAS
   1) 6 faculties

2) 5 faculties
3) 8 faculties

5. THE OLDEST FACULTY IS THE
   1) medico-biological faculty one
   2) treating one
   3) pharmaceutical one

6. THE YOUNGEST FACULTIES ARE
   1) pharmaceutical and medico-biological faculties
   2) treating and pediatric faculties
   3) faculty of behavior medicine and management

7. THE STUDENTS WHO GRADUATE FROM THE TREATING FACULTY WILL CURE
   1) different diseases of adults
   2) children diseases
   3) diseases of adults and children

8. THE GRADUATES OF THE PHARMACEUTICAL FACULTY WILL WORK AT
   1) research institutes and specialized clinics
   2) analytical laboratories, pharmaceutical plants and chemist's shops
   3) polyclinics and hospitals

9. THE MEDICO-BIOLOGICAL FACULTY PREPARES SPECIALISTS WHO WILL
   1) investigate inner physical and chemical processes in a human being
   2) study reasons of diseases and help physicians to do away with them
   3) both

10. THE GRADUATES OF THE FACULTY OF BEHAVIOR MEDICINE AND MANAGEMEN WILL
   1) work as psychiatrists
   2) help people to cope with their mental disorders
   3) treat people for different diseases

11. THERE … CLINICS FOR 1055 BEDS SUCH AS CLINIC OF EYE DISEASES, EAR, NOSE AND THROAT DISEASES, OF SURGERY, THERAPY AND SO ON
    1) was
    2) are
    3) will be

12. IN 1980-S RESEARCH INSTITUTES OF ONCOLOGY, CARDIOLOGY, PSYCHIATRY, MEDICAL GENETICS, PHARMACOLOGY … SEPARATED FROM THE TOMSK MEDICAL INSTITUTE
    1) were
    2) are
    3) will be

13. AT PRESENT THE RESEARCH INSTITUTES … THE TOMSK SCIENTIFIC CENTER OF THE SIBERIAN DEPARTMENT OF THE RUSSIAN ACADEMY OF MEDICAL SCIENCE
    1) represent
    2) represented
    3) are represented

14. THE UNIVERSITY … WITH MANY IMPORTANT PROBLEMS
    1) deal
    2) deals
    3) has dealt

15. MANY FAMOUS RUSSIAN SCIENTISTS … FROM THE TOMSK MEDICAL UNIVERSITY
    1) graduated
    2) graduates
    3) are graduated

ТЕМА 2

РАБОЧИЙ ДЕНЬ СТУДЕНТА-МЕДИКА

1. Обратите внимание на произношение следующих слов:

[i:] – people, dream, leave, meet, easy, between, evening, read, three

[a:] – far, class, after, half, article

[ɔ:] – always, morning, long, all, important, ordinary, taught, already, abroad, report, short, quarter, qualified

[ai] – life, time, wise, rise, exercise, scientific, society, library either, try, light

[ə:] – working, early, learn, university

[ʌ] – some, come, become, up, bus, subject, much, culture, other, study Russian.

2. Ознакомьтесь со словами и словосочетаниями к тексту. Запомните их значение:

to come true	– сбываться
the lost time	– потерянное время
to waste time	– терять время
on week-days	– в будние дни
an early riser	– «ранняя пташка»
in time	– во время
to do one's morning exercises	– делать утреннюю зарядку
to make one's bed	– заправлять кровать
it takes me (him, her, etc) much/little time	– мне требуется много/мало времени
to leave smth. for smth	– уходить откуда-то куда-либо
to go on foot	– ходить пешком
to go by bus/trolley bus	– ездить на автобусе/троллейбусе
to be late	– опаздывать

a break (short, long)	– перерыв (короткий, большой)
as a rule	– как правило
to attend lectures	– посещать лекции
to deliver lectures	– читать лекции
ordinary	– обычный, ординарный
a foreign language	– иностранный язык
to teach (taught)	– обучать, преподавать
to be over	– оканчиваться
either … or …	– или… или…, либо… либо…
right after classes	– сразу после занятий
to join a Students' Scientific Society	– вступить в СНО
to care for	– интересоваться чем-либо
to make reports	– делать доклады
to carry out research work	– выполнять исследовательскую работу
to go to bed	– ложиться спать

3. Подберите пары слов, имеющих сходное значение:

much, get up, studies, care for, classes, think, make one's bed, clever, rise, must, men, many, be interested in, wise, guess, have to, do one's bed, people.

4. Подберите пары слов, имеющих противоположное значение:

be over, like, late, day off, heavy breakfast, undress, necessary, attend classes, early riser, much, leave home, short, near, difficult, bad, begin, light breakfast, far, easy, little, week-day, good, dress, unlike, heavy sleeper, miss classes, early, unnecessary, come home, long.

5. Посмотрите на «часы» и скажите:

1. Какое время они показывают?

7:00 a.m.	7: 30 a.m.	8:15 a.m.	12;50 p.m.	3:25 p.m.

2. Что Вы делаете обычно в это время?

3. В какое время Вы:

– просыпаетесь (wake up),

– завтракаете (have your breakfast),

– приходите домой из университета (come home),

– делаете домашнюю работу (do your homework),

– ложитесь спать (go to bed).

6. Поинтересуйтесь у своего друга, сколько обычно требуется времени, чтобы выполнить указанные ниже действия:

Модель: – *How long does it take you (him, her, them) to get dressed?*

– *Generally it takes me (him, her, them) not more than 10 minutes to get dressed.*

You – to make your bed (не более 5 минут)

They – to do their morning exercises (неменее 20 минут)

They – to have their breakfast (около 15 минут)

She – to get ready for her breakfast (неменее 1 часа)

He – to get to the university (полчаса)

He – to do his homework (неменее 2 часов)

7. Вспомните:

а) назовите три основные формы следующих неправильных глаголов: to be, to come, to begin, to have, to do, to get, to make, to leave, to know, to take, to teach, to read, to go, to become;

б) определите форму глагола (время и залог): is doing, had read, left, have to get up, were going, met, has taken, went, are taught, will have been made, have had, were, began, will be making, is known, became.

8. Найдите соответствующий русский эквивалент следующих пословиц и поговорок:

1. The lost time is never gained.	а) Утро вечера мудренее.
	б) Здоровье дороже богатства.
2. Early to bed and early to rise	в) Всему свое время.

makes a man healthy, wealthy and wise.

3. Good health is better than wealth.

г) Кто рано ложится и рано встает - здоровье, богатство и ум наживет.

д) Потерянное время не вернешь.

е) Никогда не откладывай на завтра то, что можно сделать сегодня.

9. Прочтите и переведите текст.

MEDICAL STUDENT'S WORKING DAY

I am a student. My dream has come true. A new life begins. I guess it is not easy to study at the Medical University. Every day I have much work to do. I remember that the lost time is never gained so I don't waste time.

My week-days don't differ much one another.My working day begins early. English people say: “Early to bed and early to rise makes a man healthy, wealthy and wise”. I am not an early riser, but I have to get up at 7 a.m. It is well known that good health is better than wealth so I try to do my morning exercises. It doesn't take me much time. Then I wash, make my bed and have a light breakfast.

At a quarter past 8 a.m. I leave the hostel for the University. I go to the University on foot as it is not far from the hostel where I live. It takes me little time to get there. Many of our students live at home. They go to the University by bus or trolley bus. I always come to the University in time. I am never late.

Our classes usually begin at 8.45 a.m. Between classes we have short breaks and one long break for dinner.

As a rule we have practical classes, lectures and seminars in numerous theoretical and special subjects. Like most of our students I attend all the lectures as they are delivered by qualified professors and teachers, and are very interesting and important. We work much in class, at our laboratories and library to get deep knowledge.

As the students want to become not ordinary but good specialists they must study not only their text-books but read special medical literature in Russian and foreign languages. So English, German and French are taught at the University. To know some foreign language is necessary for every person because its knowledge also helps to learn more about culture, science, life and other events abroad.

There is a Students' Scientific society at our University. The students may join it and work on the subjects they care for. They carry out research work and then make reports at the conferences.

My classes are over either at 3.10 or 5.20 p.m. Right after classes I go straight to the hostel. Sometimes I go to the library to take some books or articles necessary for my studies.

When I come home I have a short rest, then I do my homework. It takes me not less than 3 hours. In the evening I have supper, read books, listen to music or watch TV. If I have time I go to the cinema or theatre. On my week-days I usually go to bed at about 12 o'clock.

10. Назовите:

а) глаголы, с которыми в тексте сочетаются следующие существительные: dream, time, bed, breakfast, hostel, lectures, specialists, knowledge, classes, books, home, homework, supper, music, TV, theatre, society, reports;

б) существительные, с которыми в тексте сочетаются данные прилагательные: working, foreign, ordinary, numerous, scientific, lost, short, healthy, wealthy and wise, practical, light, interesting and important, special medical, qualified, long, research.

11. Помогите восстановить недостающую информацию.

1. Like most of our students…
2. I guess it is not…
3. At a quarter past 8 a.m.….
4. They carry out research work…
5. I remember that…
6. Right after classes…
7. As the students want…
8. English people say…
9. As a rule we…
10. To know some foreign language…
11. My week-days don't…

12. I am not an early riser but…

13. We work much in…

14. It is well known that good…

15. In the evening I …

12. Прочтите данные утверждения и выразите свое согласие или несогласие. Начните свой обоснованный ответ со следующих фраз:

You are right.	Sorry, you are wrong.
I quite agree with you.	I don't agree with you.
I think so.	I don't think so.
	You are mistaken.

Модель: – *You always waste your time.*

– *Sorry, you are wrong. I remember that the lost time is never gained so I don't waste time.*

1. Every day you have much work to do.
2. Usually you get up at 9 a.m.
3. You always go to the University by tram.
4. It is necessary to know some foreign language.
5. It takes you not more than 10 minutes to do your homework.
6. Your dream has come true.
7. You are never late.
8. Right after classes you always go to the library.
9. You attend all lectures and practical classes.
10. You have no breaks between classes.
11. You try to do your morning exercises.

13. Скажите, что Вы и Ваш друг делаете то же самое, что и я:

Модель: *I go to the University by bus.*

So do I. I also go to the University by bus.

So does my friend. He also goes to the University by bus.

to get up at 7 a.m.; to do morning exercises; to come to the university in time; to attend all classes; to study English at the University; to read special medical literature; to go to the library to take books; to watch TV sometimes; to go to the cinema on Sundays; to go to bed at 12 o'clock.

14. Скажите, что ни Вы, ни Ваш друг не делаете того, что делаю я:

Модель: *On Sunday I **don't get up** at 7 a.m., I **get up** at 10 a.m.*

Neither does my friend. He doesn't get up at 7 a.m. either.

to go to the University on foot; to want become an ordinary specialist; to read only text-books; to study French; to go to the library every day; to waste time; to go to bed at 9 o'clock.

15. Узнайте, делают ли Ваш друг (одногруппник, сестра и т.д.) то же самое, что и Вы:

Модель: – I do my morning exercises every day. And what about you?

– Do you also do your morning exercises every day?

– Yes? I do (No, I don't).

– And your sister? Does she also do her morning exercises every day?

– No, she doesn't (Yes, she does).

to make one's bed, to have breakfast, to go by bus, to read special medical literature, to have a long rest after classes, to make reports at the conferences, to come in time, to watch TV, to attend classes.

16. Расспросите своего друга.

Модель: *– I have my breakfast at our canteen. And what about you?*

*– **Where** do you have your breakfast?*

*– I have my breakfast at home **by the way**.*

*– And what about your friend? **Where** does he have his breakfast?*

*– **As far as I know** he has his breakfast at the hostel.*

Where – to live; to go right after classes; to do homework; to make reports.

When – to get up; to leave the hostel/home for the University; to come home; to have dinner.

What – to attend; to read; to do after classes.

17. Попытайтесь узнать подробности о рабочем дне Вашего знакомого, который учится в другом вузе.

– Когда ты обычно встаешь? – Generally at 7 o'clock in the morning

– Ты делаешь зарядку? – Of course, I do. That is what I begin with.

– Что ты делаешь после зарядки? – I wash, make my bed and dress.

– В какое время ты завтракаешь? – Usually at about 8.

– А где ты завтракаешь? – As a rule, I have my breakfast at our canteen.

– Когда ты уходишь на занятия? – Right after breakfast, at 8.15 a.m.

– Как ты добираешься до университета? – I usually take a trolley-bus.

– Сколько времени у тебя уходит,
чтобы добраться туда? – About half an hour.

– Когда начинаются твои занятия? – At 9 o'clock.

18. Расскажите группе о своем рабочем дне, опираясь на следующие вопросы.

1. What are you?
2. When does your working day begin?
3. Are you an early riser or a heavy sleeper?
4. Do you do your morning exercises?
5. What do you usually do in the morning?
6. Are you always in a hurry in the morning?
7. When do you leave home for the University?
8. How do you get to the University?
9. How long does it take you to get there?
10. Are you late for classes?
11. When do your classes usually begin?
12. Do you miss lectures?
13. What subjects are you studying in the 1 st year?

14. What foreign languages are you taught at the University?

15. Why is it necessary to know some foreign language?

16. When are your classes over?

17. Where do you go right after classes?

18. Why do medical students join Scientific Societies? What do they do there?

19. What do you do in the evening?

20. What time do you go to bed on week-days?

19. Опишите, как Ваш друг начинает день, используя следующие словосочетания:

to be an early riser, to get up early/late, to wake up at…, to take a shower, to dress, to make one's bed, to have breakfast, to be in a hurry, to have no free time, to waste time, to do morning exercises, a heavy sleeper.

20. Ваш друг хочет, чтобы Вы пришли к нему, но Вы очень заняты. Посмотрите свой ежедневник и объясните, почему Вы не сможете сделать этого. Используйте: “to be going to do something”.

Your friend: Can you come on Monday evening?

You: Sorry, **I'd love to**, but I … .

Your friend: What about Tuesday evening then?

You: **I can't I'm afraid**. I … .

Your friend: What are you doing on Wednesday evening?

You: … .

Your friend: I see. Well, are you free on Thursday evening?

You: **I'm afraid not** … .

Your friend: Well, have you got anything special to do on Friday evening?

You: Yes, I have, I … .

Your friend: Then, let's meet on Saturday. Agreed?

You: **I wish I could** but … .

Your friend: Oh! Then could you manage Sunday at 11 o'clock?

You: **That would be quite all right.**

Yourfriend: **That's settled.**

You: … .

21. Убедите Вашего друга последовать Вашему совету. Используйте “Should + Infinitive”:

- to learn English hard,
- to join some scientific society,
- to attend all lectures and practical classes,
- to get up early,
- to do morning exercises,
- to go on foot more often.

22. Подберите соответствующие окончания поговорок и пословиц. Дайте их русское значение.

1) Early to bed and early to rise …	a) is better than wealth;
2) As busy…	b) is worth two in the evening;
3) Lost time…	c) makes a man healthy, wealthy and wise;
4) An hour in the morning…	d) is never found again;
5) Good health….	e) what you can do today;
6) Never put off till tomorrow…	f) as a bee.

23. Прочитайте диалоги.

Диалог 1

Oleg: What time do you get up on week-days?

Dima: I generally get up at seven o'clock.

Oleg: Why so early?

Dima: Because I have a lot of things to do before I leave for the University.

Oleg: Do you do your morning exercises regularly?

Dima: Yes, that's what I begin with as a rule. Then comes the usual procedure of making my bed, washing and so on.

Oleg: Do you take a bath every morning?

Dima: No, I don't. As a matter of fact I hardly ever take a bath in the morning. I prefer taking a shower. Then I clean my teeth, comb my hair and get dressed.

Oleg: Who makes your breakfast for you?

Dima: If my mother is not up yet, I make my breakfast myself. If my mother is up, she does. After breakfast I usually help mother to clean up.

Oleg: Good for you. And when do you leave home?

Dima: Usually at half past eight, as it takes me about twenty minutes to get to the University.

Oleg: Do you walk to the University or do you take a trolley-bus?

Dima: I always take a trolley-bus in the morning. But after classes I sometimes go on foot.

Oleg: You go home right after classes, don't you?

Dima: Sometimes I do, and sometimes I don't. If I can prepare for the next day's classes at home, I go straight home. If I haven't got necessary books and journals at home, I go to the library.

Диалог 2

Student: Professor, I can't go to class today.

Professor: Why can't you go?

Student: I don't feel well.

Professor: Where don't you feel well?

Student: In class.

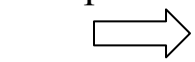
Диалог 3

What's for supper?

Mother: It's nine o'clock and you are not in bed yet. What will father say when he comes home?

Henry: He'll say: “Supper! Supper! What's for supper?”

24. Найдите 18 глаголов, связанных с темой. Они расположены в двух направлениях.



W	A	S	T	E	L	I	S	T	E	N
B	T	W	G	M	M	D	S	H	K	C
E	A	O	A	A	E	R	T	E	N	O
G	K	R	I	K	E	E	U	L	O	M
I	E	K	N	E	T	A	D	P	W	E
N	G	O	G	E	T	M	Y	S	A	Y
D	E	L	I	V	E	R	R	E	A	D

25. Прочтите и переведите текст.

A COUCH POTATO

Forty-three-year-old Brian Blakey from Birmingham is sitting on his sofa and telling me about his perfect day.

When I wake up I don't get up immediately. I turn on the television and watch the children's programs and old movies until about half-past ten. Then I get up, go downstairs and switch on the telly. For lunch, I have biscuits and a glass of milk, and I watch the news. In the afternoon, I often watch another old film - they're showing some good ones at the moment. In the evenings, I often watch soap operas or sport and the news again.

I like the main news at six o'clock. At nine thirty, if there is a good play on BBC2, I switch over and watch it. Then at night I watch more films and I usually switch off the telly at about two o'clock. I never watch the TV all night.

I watch TV for sixteen or seventeen hours a day. I also do some exercise every day. I take Tina, the dog, for a walk every afternoon. I don't go far, of course. I walk to the wall outside my house. I always take my portable telly and I sit on the wall while the dog walks round in a circle.

Of course, I couldn't live this lifestyle without a good wife. She's not here now because she's working, but she always makes my meals. We haven't got much money, you know, but we're happy. Sit sown, watch the telly - you've got the world at your feet. And in your hand. Great!

ТЕСТОВЫЕ ЗАДАНИЯ

Выберите один правильный ответ.

1. MY GROUP MATE NICK IS A VERY HARD WORKER – HE NEVER … TIME
    1) doesn’t waste
    2) wastes
    3) waste

2. IT … ME LITTLE TIME TO GET TO THE UNIVERSITY.
    1) takes
    2) take
    3) is taken

3. WHEN … YOU USUALLY LEAVE THE HOSTEL FOR THE UNIVERSITY
    1) do
    2) does
    3) have

4. OUR LECTURES AND PRACTICAL CLASSES
    1) have delivered by qualified teachers
    2) was delivered by qualified teachers
    3) are delivered by qualified teachers

5. IN THE FIRST YEAR THE STUDENTS … ENGLISH AND LATIN
    1) teach
    2) are teach
    3) are taught

6. MUCH WORK … IN CLASS AND AT OUR LABORATORIES.
    1) carries out
    2) is carried out
    3) is carry out

7. TO TAKE CARE FOR THE SUBJECTS MEANS TO BE
    1) interested in the subjects
    2) good at the subjects

3) responsible for the subjects

8. THE STUDENTS … NOT TO BE LATE FOR CLASSES
   1) ask
   2) are asked
   3) asks

9. A STUDENT WHO ATTEND ALL THE CLASSES AND LECTURES ALWAYS GETS … BETTER MARKS
   1) a
   2) the
   3) –

10. AT COLLEGE THE WORK IS HARDER THAN THE WORK WE DID AT SCHOOL, BUT IT'S … INTERESTING
   1) most
   2) more
   3) a few

ТЕМА 3

ФАРМАЦИЯ КАК НАУКА

1. Прочитайте текст А. Укажите предложения, содержащие прилагательные в одной из степеней сравнения.

TEXT A. **WHAT IS PHARMACY?**

Pharmacy is defined as the art and science of recognizing, identifying, collecting, selecting, preparing, storing, testing, compounding and dispensing all substances used in preventive or in curative medicine for treating people.

Pharmacy was an integral part of medicine when preparative pharmaceutical techniques were simple. It became an independent branch of medicine when an increasing variety of drugs and their complex compounding demanded specialists familiar with the technique of their compounding. Thus we may define pharmacy as the science of drugs. The word “pharmacy” comes from the Greek word pharmakon, which in the modern language means “a drug”. To the Greeks it was associated with a god or higher being[1] who had the power of affecting people with herbs, infusions, etc.

Pharmacy is as old as man himself. The first primitive man who tried to use a plant in the food and observed that it caused a disease was already in the drug business. In this simple way many drugs have been discovered.

The civilization of the past contributed to our present knowledge by the collection of drugs and drug preparations. The old Egyptian texts list many preparations, some components of which are still used in modified form. In these works the important beginning of the science pharmacognosy may be seen. Galen, in the second century A.D[2]. one of the most famous physicians of the past wrote much about drug effects. Even today pharmacists use the word “galenicals” when they speak about simple vegetable extracts.

However, only in the late eighteenth and nineteenth centuries chemical knowledge advanced to the point at which it could contribute significantly to pharmacology.

The first and the most important was the isolation in relatively pure chemical form of the active constituents of plants. For example, Sertürner isolated morphine in 1806 from opium. It took man[3] over 5000 years to make this very important step.

The industrial revolution of the last century gave birth to synthetic organic chemistry and established a new branch of knowledge[4] necessary for the synthesis of new drugs.

That the drug may affect the organism or may act more selectively was an empirical observation of a primitive man. However, it took many centuries to establish this empirical observation scientifically. Today, the biochemical investigation of drug action is as important as the older pharmacodynamic studies.

Notes

[1] god or higher being – Бог или высшее существо

[2] A.D. ['er 'di:] – латинское сокращение anno Domini, означающее «нашей эры» (ср. B. C. – до нашей эры)

[3] it took man – человечеству понадобилось

[4] a new branch of knowledge – новая отрасль науки

2. Обсудите текст, ответив на вопросы.

1. What new facts have you found out about your future speciality?
2. How can you define “pharmacy” now?
3. Why do we say that pharmacy and medicine develop together?
4. Is pharmacy an ancient science?
5. What do you know about the word “pharmacy”?
6. What can we read about pharmacy of the past?
7. What do you know about the word “galenicals”?
8. When did the science of pharmacology appear?
9. Was morphine known to humanity long ago?
10. When did organic chemistry of synthetic drugs appear?
11. What subjects does the science of pharmacy include?

3. Образуйте степени сравнения следующих прилагательных и наречий и переведите их на русский язык:

independent, familiar, old, simple, famous, much, pure, important, new, necessary.

4. Подберите к каждому вопросу соответствующее вопросительное слово:

1 … was pharmacy associated with? 2. … have many drugs been discovered? 3. … may the important beginning of the science pharmacognosy be seen? 4. … could chemical knowledge contribute significantly to pharmacology? 5. … did Sertürner isolate morphine from opium? 6. … did it take to isolate drug constituents from plants? 7. … gave birth to synthetic organic chemistry?

5. Прочитайте текст В и переведите его на русский язык.

TEXT B. **PRACTICE OF PHARMACY**

Pharmacy is the science which deals with medicinal substances[1]. It speaks not only of medicines and the art of compounding and dispensing them, but of their combination, analysis and standardization.

The word “pharmacy” is also used to designate the place where medicines are compounded, dispensed and sold. The title “pharmacist” is conferred upon a person who demonstrates that he is scientifically and professionally capable of engaging in the practice of pharmacy.

The compounding of medicines usually requires the scientific combination of two or more ingredients as prescribed by a physician, but dispensing may only require the transfer of manufactured products to a prescription container. Both services demand special knowledge, experience, and high professional standards. To become a pharmacist one should achieve knowledge of different subjects, such as physics, chemistry, botany, etc.

6. Поставьте вопросы к выделенным словам.

1. Medicines are compounded, dispensed and sold in pharmacies. 2. Dispensing may only require the transfer of manufacture products to a prescription container. 3. Chemistry has many divisions such as general chemistry, organic chemistry, the chemistry of carbon compounds, etc. 4. It is important for the pharmacist … know whether the chemicals are stable.

ТЕСТОВЫЕ ЗАДАНИЯ

Выберите один правильный ответ.

1. PHARMACY IS RESPONSIBLE FOR
    1) the treatment of diseases
    2) all the substances used for treating people
    3) the preparation of pharmacists

2. WHEN PREPARATION OF DRUGS WAS SIMPLE PHARMACY WAS
    1) a secondary part of medicine
    2) an essential part of medicine
    3) an unnecessary part of medicine

3. PHARMACY BECAME AN INDEPENDENT SCIENCE
    1) due to increased number of drugs
    2) due to the necessity of specialists knowing the techniques of compounding drugs
    3) in ancient Greece

4. THE WORD "PHARMACY" TO THE GREEKS WAS ASSOCIATED WITH
    1) a drug
    2) herbs and infusions
    3) a god treating people with herbs and infusions

5. PHARMACY
    1) is as old as the hills
    2) is a modern science
    3) appeared in ancient Greece

6. THE MODERN PHARMACY IS GREATLY INFLUENCED BY
    1) the ancient civilizations
    2) the ancient Egyptian texts
    3) drug effects described by Galen

7. THE WORD "GALENICALS" DESCRIBES
    1) different drug effects
    2) Galen's tractates
    3) vegetable tinctures

8. PHARMACOLOGY APPEARED

1) due to the development of chemistry
2) due to its contribution to chemistry
3) over 5000 years ago

9. THE FIRST STEP IN THE DEVELOPMENT OF PHARMACOLOGY WAS

1) made 5000 BC
2) the opium production in 1806
3) the fact of morphine isolation at the beginning of 19^{th} century

10. THE SYNTHESIS OF NEW DRUGS RESULTED FROM

1) the rapid development of industry
2) the appearance of organic chemistry
3) a new branch of knowledge

11. THE ABILITY OF A DRUG TO EFFECT A HUMAN BEING WAS ESTABLISHED BY MEANS OF

1) observation
2) established by means of investigation
3) established by means of research work for many centuries

12. PHARMACY … AS THE SCIENCE OF DRUGS

1) may be defined
2) defines
3) define

13. THE WORD "GALENICALS"… IN RELATION TO SIMPLE VEGETABLE EXTRACTS

1) are used
2) used
3) is used

ТЕМА 4

ХИМИЧЕСКИЕ ЭЛЕМЕНТЫ

Grammar: ModalVerbs
PassiveVoice

1. Обратите внимание на произношение следующих слов:

liquid, vapour, extraordinary, exist, liquefy, thorough, govern, quantity.

2. Ознакомьтесь со словами и словосочетаниями к тексту. Запомните их значения:

matter	– материя
to exist	– существовать
solid	– твёрдый, твердое вещество
to solidify	– затвердевать
liquid	– жидкий, жидкое вещество
to liquefy	– сжижать
to melt	– таять, плавиться
to evaporate	– испарять (ся)
vapour	– пар
common knowledge	– общеизвестно
volume	– объём
shape	– форма
to occur	– встречаться, происходить
thorough	– глубокий, тщательный
to obtain	– получать
to govern	– управлять
relative quantity	– относительное количество
to boil	– кипеть
to freeze	– замораживать

extraordinary means – чрезвычайные средства
property – свойство
compound – соединение
explosive – взрывчатый
pure – чистый, без примесей

3. Соотнесите английские слова в столбце A с русскими эквивалентами в столбце B.

A	B
1. matter	a) пар
2. extraordinary means	b) объём
3. to melt	c) относительное количество
4. solid	d) сжижать
5. vapour	e) твёрдое тело
6. common knowledge	f) материя
7. volume	g) глубокий
8. to obtain	h) управлять
9. relative quantity	j) общеизвестно
10. to liquefy	i) плавиться
11. thorough	k) чрезвычайные меры
12. to govern	l) получать

4. Прочтите и переведите следующие гнёзда слов:

a. solid – solidify
b. vapour – to evaporate, to vaporize
c. liquid – liquefy
d. to govern – government
e. to compose – to decompose, composition
f. to boil – boiling point
g. pure – purify, purification

5. Откройте скобки и употребите глаголы в активном или пассивном залоге.

h. When ice (to melt) it (to become) liquid.

i. The state of the substance (to change) by high temperature.

j. The liquids (to take) the shape of their containers.

k. Matter (to compose) of molecules.

l. At a high temperature water (to convert) into vapour.

m. Substances (to change) their state under different conditions.

n. The behaviour of the matter (to govern) by physical laws.

o. Oxygen can (to liquefy) under compression.

6. Прочтите и переведите текст.

Text A

PROPERTIES OF MATTER

That matter may exist in three physical states (solid, liquid and gas) is common knowledge. It is usually possible to change matter from one state to the other by changing its temperature. For instance, a piece of ice is called a solid; it may melt and form a liquid; as it evaporates, liquid water changes into a vapour, i.e. into the gaseous state.

Many kinds of matter, like water, can be obtained in each of the three states; for some, however, extraordinary means have to be used in order to produce one, or even two of the states; and for others, only two states are known or can be produced.

Common salt, for example, exists normally as a solid; at a temperature of several hundred degrees, it can be liquefied; and at still higher temperature it is converted into vapour. Carbon, a solid under normal conditions, can be vaporized, but it has never been liquefied.

Solids have both a definite volume and a definite shape. Liquids, too, have a definite volume, but they take the shape of their containers. Gases have neither a definite shape nor a definite volume. A chemist must have a thorough knowledge of the states of matter and of physical laws that govern the behavior of matter in various states.

That all matter is composed of molecules is known to everybody. The question which must be answered, then, is: if all matter is composed

of molecules, what is the essential difference between the states of matter? The answer to these questions is that the essential difference between these states is the relative quantities of energy molecules possess in different states.

The states of matter are few. But the ways in which they are realized, the number of different substances around us, are many.

Actually there is a set of characteristics, called properties, that characterize each substance.

Chemists sometimes speak about chemical changes and physical changes. Physical changes do not mean a change in the composition of a substance. For example breaking, freezing, melting, boiling, and deforming a substance such as lead are considered physical changes.

A chemical change or a chemical reaction, however, changes the composition and characteristic or specific properties of a substance. For example, sodium, a silver-coloured metal, is soft enough to be cut with a knife and easily conducts electricity. It is also a very reactive substance.

Chlorine is a greenish-yellow gas. But sodium and chlorine react rapidly and produce the white solid called sodium chloride, a substance whose properties and composition are completely different from those of sodium and chlorine. The reaction of sodium with chlorine is a typical chemical reaction.

Relatively pure substances are now very common as a result of development of modern purification techniques. Examples are table salt or, sodium chloride, copper, sodium bicarbonate, nitrogen, carbon dioxide, etc. In all, about two million pure substances are obtained.

Using different methods chemists have isolated and identified about six million substances. Practically all of these can be decomposed into one or more simpler substances. A few substances, about 105, cannot be decomposed. They are called the elements.

7. Просмотрите текст ещё раз и найдите предложения, где автор описывает следующие факты:

1) the facts that are well-known;

2) examples of matter changes;

3) the necessity for a specialist to know matter transformations;

4) a question on the matter composition and the answer to it;

5) what are considered physical changes;

6) an example of chemical change.

8. Ответьте на следующие вопросы по тексту.

1. How is it usually possible to change matter from one state to the other?

2. Can all kinds of matter be obtained in each of the three states?

3. What do solids have?

4. What characterizes gases?

5. Why should a chemist know the states of matter?

6. What other substances besides water can be obtained in the three states?

7. What changes are considered physical ones?

8. What does chemical reaction mean?

9. What substances are called the elements?

9. Вместо пропусков вставьте необходимые по смыслу предлоги.

Every substance has a melting point and a boiling point. The former is the temperature ___ which it changes ___ solid ___ liquid. The latter is the temperature ___which it changes ___ liquid ___ gas. These changes are called changes ___state. Sometimes the properties ___ a substance change when it changes its state. ___ example, if the temperature ___ oxygen falls below -183 C, it changes ___ a colourless gas ___ a bluish liquid, which is highly magnetic.

10. Вместо пропусков вставьте необходимые по смыслу модальные глаголы «can», «must», «should».

1. Chemicals ___ be used carefully in the laboratory.

2. You ___ stay out of the laboratory if your teacher is not there.

3. Many of the chemicals ___ be dangerous.

4. All chemicals ___ be treated with care.

5. How ___ you tell that a substance is pure?

6. Dalton`s ideas about atom ___ explain many scientific laws.

7. A substance ___ be recognized by its properties.

8. A question that we ___ answer is how the atoms get electrical charge.

10. Прочтите и переведите текст на русский язык.

Text B

Occurrence and Distribution of the Elements

Comparatively few of the elements occur in the free or uncombined state in nature; amongst these are oxygen and nitrogen. These exist free and are mechanically mixed together in the atmosphere. Sulphur occurs in the free state in large deposits in the neighbourhood of volcanoes, especially in Sicily. Carbon occurs free in its purest natural form, crystallized as the diamond, in Brazil, South Africa, India, and other places. It also occurs naturally in many places as graphite (commonly called black-lead although it contains no lead). Antimony, arsenic, copper, gold, silver, platinum, and mercury also occur in the free state. Iron is sometimes found as large metallic masses in meteoric stones which have fallen to the earth from a source outside our atmosphere; these are seen and usually known as “shooting stars”. Although many of the elements occur in the free state in nature, they are more often found in the state of combination with other elements, e.g., metals are usually found in metallic ores combined with one or more of the following elements: sulphur, carbon, oxygen, silicon, chlorine, fluorine, phosphorus, etc.

Hydrogen and oxygen occur combined as water, in addition to being essential constituents of all animal and vegetable bodies. Most organic compounds contain them, often combined also with nitrogen and sulphur. Man has only been able to penetrate a very short distance into the earth's solid crust, even in his deepest mines, so we cannot be certain about the composition of the central portion of our globe.

12. Выпишите из текста все названия химических элементов и переведите их на русский язык.

13. Ответьте на следующие вопросы по тексту.

1. How many elements occur in free state in nature?

2. Where does sulphur in free state occur?

3. What are the two allotropic forms of carbon?

4. What are « shooting stars»?

5. What is usually found in metallic ores?

6. What elements does water consist of ?

7. What elements do most organic compounds contain?

8. Why can’t we be certain about the composition of the centre of our globe?

Text C «Oxygen»

14. Ознакомьтесь со словами к тексту С. Запомните их значения:

abundant	– распространённый
compression	– сжатие
odour	– запах
taste	– вкус
to cool	– охлаждать
to liberate	– выделять, высвобождать
combustion	– окисление, горение
soluble	– растворимый
heat	– тепло
kindling point	– точка воспламенения
to ignite	– воспламеняться

15. Образуйте производные слова с помощью суффиксов и установите их значение:

- **ful:** colour, harm, care, use
- **less:** taste, colour, harm, odour, use
- **ish:** white, green, sweet, thin

16. Прочтите и переведите текст со словарём.

OXYGEN

Oxygen was discovered by Priestley in 1774. In nature oxygen may occur in a free state or may be found combined with other elements. Oxygen is a colourless, odourless, tasteless gas. It is slightly heavier than air and is slightly soluble in water. Under compression and cooling it can form a pale blue liquid boiling at – 192.98 °C which would be slightly magnetic.

No other element is more important to life than oxygen. It is not only the most abundant element on the surface of the globe, but it is absolutely necessary to maintain life. Air breathing animals would die within a few minutes if the supply of oxygen in the atmosphere stopped.

The outstanding property of oxygen is its activity. It combines with all elements. Among the substances which are uneffected by oxygen we should mention inert gases. Let us study its main reactions. When oxygen combines with an element, it forms a product which is called an oxide. The process is called oxidation. Combinations with oxygen often liberate heat and light and this process is known as combustion. The temperature at which a substance ignites is called its kindling point. The heat which is liberated maintains the substance at or above the kindling temperature. The amount of heat which is liberated by very slow oxidation (rusting of metals and the decay of wood) and by rapid combustion is the same, but there is no rise in temperature because the heat is radiated to the surrounding air. The difference between combustion and corrosion and decay is one of the rates of reaction and temperature at which these reactions take place.

17. Используя следующие выражения, выразите согласие или несогласие с данными утверждениями.

Agreement	**Disagreement**
That is right	You are not right, I’m afraid
You are quite right	You are wrong, I’m afraid
True	Just the opposite, I’m afraid
I quite agree with it here	I can’t quite agree with you

1. There are many elements that are more important than oxygen.
2. Oxygen is very reactive.

3. Oxygen is an odourless, colourless gas.
4. The amount of heat liberated on oxidation doesn't depend on the rate of oxidation.
5. Combinations with oxygen seldom liberate heat.
6. Liquid oxygen boils at – 192.28 °C.

18. Ответьте на следующие вопросы.
    1. Why is oxygen the most important element for life?
    2. What are the physical properties of oxygen?
    3. What are the chemical properties of oxygen?
    4. What substances do not react with oxygen?
    5. What is combustion?
    6. What is the kindling temperature of a substance?
    7. What do the reactions with oxygen often liberate?

19. Заполните пропуски словами: *kindling temperature, the most abundant, inert gases, corrosion, oxide, rusting, air*.

Переведите предложения на русский язык.

1. Oxygen is ___ element on the surface of the globe.
2. Oxygen does not react with ___ .
3. The temperature at which a substance ignites is called its ___ .
4. When oxygen combines with an element, it forms a product which is called ___ .
5. ___ is slow oxidation of metals.
6. ___ is a corrosion of iron or steel to form a hydrate iron (III) oxide.
7. By the time you get to 50 miles above sea level, there's practically no ___ left.

20. Прочтите и переведите следующий диалог.

Notes

to interrupt – прерывать
supporter – зд. тот, кто поддерживает
I guess – я полагаю

amount – количество
approximate – приблизительный
volume – объём
participation – участие
See you later – До встречи

A dialogue

Carl Spider: Good afternoon. I'm Carl Spider. Today we are going to discuss oxygen. If you dont't understand or have anything to add, you are welcome to interrupt. O. K.? Well, to begin with, it's common knowledge, oxygen is the most abundant element on our planet ...

Student: May I interrupt you for a moment? When was it isolated?

C.S.: You mean discovered? That's a good question. It was discovered by Priestley as early as 1774. But it is not as simple as that. Because Lavoisier also made experiments with oxygen isolating it from air and developing Priestleys's work. Lavoisier emphasized the role of oxygen in combustion and respiration. It should be noted, that because of its chemical properties oxygen has been called the most important of all elements to man.

Student: Sorry to interrupt you, but is it because of being a supporter of combustion and of forming oxides with both metals and nonmetals?

C.S.: Quite right. Let me continue and say that oxygen is a colourless, odourless, tasteless gas, slightly heavier than air and slightly soluble in water. The outstanding property of oxygen is its tendency to combine with other substances.

Student: May I interrupt you again, Dr. Spider?

C.S.: Yes?

Student: Will it combine with all elements?

C.S.: No, it doesn't combine with inert gases. Would you answer my question? What happens to oxygen with the increase in temperature?

Student: I guess, it would greatly increase the oxygen's activity.

C.S.: Yes, that's true. Oxygen is one of the constituents of the air. Could anybody tell me about the composition of the air?

Student: As far as I know, it varies and depends on plants and animals which control the amounts of oxygen and carbon dioxide by photosynthesis and respiration.

C.S.: Well, the approximate composition by volume is the following: nitrogen – 78 percent, oxygen – 21 percent, argon – 0.93 percent, carbon dioxide – 0.03 percent, plus small quantities of other gases. Well, thank you for your active participation. Next time we'll speak about combination of oxygen with metals. What do they form?

Student: Oxides, I suppose.

C.S.: Absolutely true. See you later.

20. Ответьте на следующие вопросы.

1. Who discovered oxygen?
2. Who was the role of oxygen emphasized by?
3. What does oxygen support?
4. How does temperature affect the oxygen's activity?
5. What does the composition of the air depend on?
6. What is the approximate composition of the air?

21. Прочтите описания 10 элементов. Назовите их. Сделайте свой выбор из элементов, представленных ниже:

chlorine, tin, hydrogen, zinc, copper, bromine, carbon, helium, silver, oxygen.

1. Chemically it is a reactive metal, combining with oxygen and other nonmetals and reacting with dilute acids to release hydrogen.
2. Chemically it is reactive. It combines directly with chlorine and oxygen and displaces hydrogen from dilute acids. It also dissolves in alkalis to form stannates.
3. It is a white lustrous soft metallic transition element. It is used in jewellery, tableware, etc., and its compounds are used in photography.
4. A colourless, odourless gaseous element. It is the most abundant in the Earth's crust (49.2 percent by weight) and is present in the atmosphere (28 percent).

5. A colourless, odourless gaseous chemical element. It is the lightest and the most abundant element in the universe. It is used in the Haber process.
6. This nonmetallic element is totally inert and has no known compounds. It was discovered in the solar spectrum in 1868.
7. It is a red volatile liquid at room temperature. Chemically, it is intermediate in reactivity between chlorine and iodine. The liquid is harmful to human tissues and the vapour irritates the eyes and throat.
8. It is manufactured by the electrolysis of brine and also obtained in the Downs process for making sodium. It has many applications, one of which is purification of drinking water.
9. The name of this element comes from the island of Cyprus. It is used for making electric cables and wires. Its alloys are used extensively. Water does not attack it, but in moist atmospheres it slowly forms a characteristic green surface layer (patina).
10. A nonmetallic element belonging to group IV of the Periodic Table. It has two main allotropic forms (diamond and graphite).

22. a) Прочтите и переведите описание «элемента». Какие слова и термины могут быть употреблены в научном контексте, но употреблены здесь в переносном смысле.

A WOMAN AS SEEN BY A CHEMIST

Element: «Woman»

Symbol: Wo

Accepted atomic weight: 120

Physical properties: Boils at nothing and freezes in a minute.
Melts when properly treated. Very bitter if not used well.

Occurrence: Found wherever man exists.

Chemical properties: Possesses great affinity for gold, silver, platinum and precious stones. Violent reaction if left alone. Able to absorb great amounts of food matter. Turns green if placed beside a better looking specimen.

Uses: very ornamental, useful as a tonic in acceleration of low spirits, as an equalizer in the distribution of wealth. It is probably the most effective income reducer known.

Caution: Highly explosive in inexperienced hands.

b) Переведите следующее описание на английский язык. Используйте слова и выражения из задания a).

Элемент: «мужчина»
Символ: «Эго»
Атомный вес: 50–150 кг
Место нахождения: находится в большом количестве рядом с женщиной
Физические свойства: закипает в неудобных условиях, тает, если с ним хорошо обращаются.
Химические свойства: легко соединяется с автомобилем, бурная реакция при насыщении алкоголем.
Применение: тяжёлые коробки, высокие полки, ночные прогулки.

ВОДА

1. Обратите внимание на произношение следующих слов и сочетаний слов:

a quarter, to cover, a constituent, to occur, abundantly, gypsum, tissue, frequently, content, significant, average, quantity, detectable, potable water, supply, a variety of, suspended matter, appreciable, acceptable, sewage, contamination.

2. Переведите текст со словарем.

TEXT A. WATER

About three quarters of the earth's surface is covered with liquid water. In vapour form, water is also an important constituent of the earth's atmosphere. In combined form, water also occurs abundantly in minerals such as in gypsum. In addition, water occurs in animals and vegetable tissues. It constitutes some 70 per cent of the human body and over 90 per cent of some vegetables.

Naturally occurring waters frequently contain dissolved mineral substances. Thus we have mineral waters in which the total mineral content is significantly above the average, alkaline waters which contain unusual quantities of sodium, calcium, or potassium bicarbonate; carbonated waters which contain carbon dioxide dissolved under conditions of excessive pressure, either natural or artificial; sulfur waters containing large amounts of hydrogen sulfide readily detectable by odour; and siliceous waters containing unusual quantities of silica in soluble form.

Potable water is water which is fit to drink. Since water dissolves a part of nearly everything with which it comes in contact, absolutely pure water does not occur in nature.

The water for drinking and domestic purposes is generally supplied by rivers, lakes, wells, and springs. Such waters commonly contain salts of calcium, iron, magnesium, potassium, and sodium, organic matters from falling leaves and twigs; and traces of carbon dioxide, oxygen, nitrogen, ammonia, and other gases from the atmosphere. There is also a variety of suspended matter in natural water such as fine particles of clay, sand, microscopic organisms including bacteria, and fragments of vegetation. Water having appreciable amounts of dissolved salts are always more acceptable for drinking than those free from solids. But good drinking water must be free from toxic salts, disease producing organisms, and from harmful organic and sewage contamination.

3. Образуйте от следующих слов производные с помощью известных вам отрицательных префиксов:

stable, constant, know, observed, desirable, bind, explained, hydrate, colourize, compose, brominate, chlorinate, acetylate, carbonize.

4. Выделите словообразовательные элементы в следующих словах и переведите на русский язык:

abundant, commonly, natural, particular, fatty, frequently, watery, significant, silvery, lengthy.

5. Поставьте предложения в вопросительную форму.

Water occurs in minerals → Does water occur in minerals?

1. We use water for drinking and domestic purposes. 2. Water contains dissolved mineral substances. 3. Water occurs in animal and vegetable tissues. 4. Water constitutes an important part of the earth's atmosphere. 5. Man uses water for countless purposes.

6. Поставьте предложения в отрицательную форму.

The chemist is determining the constituents of water → The chemist isn't determining the constituents of water.

1. I am heating hydrogen in the tube. 2. They are studying chemistry now. 3. The analyst is still working in the laboratory. 4. They were making experiments from 5 to 8 o'clock in the lab yesterday. 5. They will be studying these elements all day long tomorrow. 6. When I entered the laboratory the students were finishing their work.

7. Прочтите предложения; поставьте глагол, данный в скобках, в Present Indefinite или в Presen Continuous Active.

1. Water (to occur) abundantly in minerals. 2. He (to pour) water into a test-tube now. 3. The students (to take part) in the experiment at present. 4. Water (to be) an important constituent of the earth's atmosphere. 5. Water (to dissolve) a part of nearly everything with which it (to come) into contact. 6. Most animals (to take in) large quantities of water with their food.

8. Прочтите предложения. Укажите, в каких предложениях имеются глаголы в форме Present Indefinite и Present Continuous Active.

1. We observe how these salts are dissolving in water. 2. Water has appreciable amounts of dissolved salts. 3. He was making an experiment from 2 till 3. 4. We shall use the constituents in our experiment. 5. He calculated the amounts of substances contained in water. 6. We made many important observations last year. 7. The analyst is determining the properties of the ore now.

9. Объедините следующие пары простых предложений в одно сложноподчиненное при помощи союзов **that, which, who.**

There are mineral waters Mineral waters have the total mineral content significantly greater than the average. → There are mineral waters which have the total mineral content significantly greater than the average.

1. Phosphate is an important major constituent of raw materials. The determination of phosphate is also of particular interest. 2. We watched the reaction. It was taking place in a test-tube. 3. D.I. Mendeleyev was a great scientist. He arranged elements according to a definite system. 4. Water for washing contains some substances. The substances react with soap.

10. Переведите следующие предложения на русский язык. Укажите слова-заместители существительных.

1. Waters having appreciable amounts of dissolved salts are always more acceptable for drinking than those from solids. 2. This substance reacts 100 times as fast as the other one. 3. We found new ways of synthesis, the older ones being unsatisfactory. 4. The potentials of carbon and nitrogen increase over that of boron.

11. Закончите предложения, используя следующие слова:

for drinking, free from toxic salts, acceptable, average, salts, calcium, microscopic organisms, fine particles, natural waters, pure, magnesium, potassium, bicarbonate, clay, sand, sodium.

1. We have mineral waters in which the total mineral content is significantly above the … . 2. Alkaline waters contain unusual quantities of … . 3. The water for drinking and domestic purposes commonly contains … . 4. There is also a variety of suspended matter in … . 5. Waters having appreciable amounts of dissolved salts are more … . 6. Good drinking water must be… .

12. Найдите в тексте эквиваленты следующих словосочетаний:

важная составная часть земной атмосферы; растворенные минеральные вещества; общее содержание минералов; необычные количества натрия; при большом давлении; содержащие большое количество сероводорода; определяемые по запаху; питьевая вода; пригодная для питья; не имеющая болезнетворных организмов

13. Переведите на русский язык:

a smiling student, a reading girl, making an experiment, sitting in the armchair, making a translation, while reading, the student going to the laboratory, the element occurring in nature.

14. Переведите предложения на английский язык.

1. Вода очень распространена в природе. 2. Вода встречается в природе в виде жидкой воды и пара. 3. Три четверти земной поверхности покрыты жидкой водой. 4. Растения и животные содержат большое количество воды. 5. Вода составляет около 70 %

веса тела человека. 6. Вода содержит растворимые минеральные вещества. 7. Воду для питья обычно используют из рек, озер, колодцев, родников.

15. Ответьте на вопросы.

1. Is water widely distributed in nature? 2. In what states of aggregation does water occur in nature? 3. How many quarters of the earth's surface are covered with liquid water? 4. Where does water occur? 5. What is the composition of water? 6. What kinds of water do you know? 7. What water is fit to drink? 8. Does water play a vital part in the nutrition of animals and plants? 9. Where is water employed by man? 10. Does absolutely pure water occur in nature?

16. Прочтите текст. Скажите: а) для какой цели был создан в Англии комитет; б) что означает цифра 0,25 mg; в) кратко опишите метод анализа воды в Темзе.

TEXT B

THE DETERMINATION OF ACRYLAMIDE IN WATER

The water industry increases the use of polyelectrolytes in water clarification. Many of these materials are derived from acrylamide. Polyacrylamide is itself non-toxic but acrylamide has a high chronic toxicity and its concentration in food and drink must be limited to very low levels.

In England in 1966 a committee was set up to assess the amount of new chemicals used in water treatment. One of the problems was to consider the use of polyacrylamide.

The committee therefore determined a permissible level of acrylamide in water. In the absence of a suitable method for the determination of acrylamide in water it was necessary to specify the acrylamide content of polymers and to limit the amounts of polymer used.

In order to determine acrylamide in potable water, a method of analysis is required which will enable to determine at least 0.25 mg of acrylamide per litre of water.

As no methods capable of determining acrylamide at these very low levels existed, work was undertaken to develop a suitable technique. A

method is described that is capable of determining down to 0.1 mg of acrylamide per litre of water.

Analysis of the River Thames water. The method was used to analyse a large number of water samples containing acrylamide.

Acrylamide is dissolved in 10 ml of water in a 300-ml flask. To this is added 12.5 mg of potassium bromide dissolved in 15 ml of water and 10 ml of 6 N sulphuricacid. The flask is fitted with a stopper with stopcocks and the air is evacuated. The flask is then enclosed in a box to exclude light, but with two “view” holes to enable the reaction to be followed visually. Potassium bromated (2.92 gm) dissolved in 25 ml of water is then added with shaking, while preserving the vacuum. Between additions of potassium bromated all the liberated bromide is allowed to react. When half of the bromated is added a white solid separates. The small excess of bromine present is destroyed with sodium sulphite. The white solid is filtered off, washed with 10 ml of water and then air dried. This compound should have a melting-point of 132 ºC, which should not change with recrystallisation of the compound from benzene.

Results. Samples of acrylamide in water were prepared by adding known volumes of the aqueous standard solutions of acrylamide to 100-ml samples of the River Thames water. These solutions were then analysed.

17. Расскажите об этапах гидрологического цикла, используя данный текст в качестве опорного средства.

Water on the earth is being recycled continuously in a process known as the hydrologic cycle. The first step of the cycle is the evaporation of water in the oceans. Evaporation is the process of water turning into vapour, which then forms clouds in the sky. The second step is the water returning to the Earth in the form of precipitation: either rain snow or ice. When the water reaches the Earth's surface, it runs off into the rivers, lakes, and the ocean, where the cycle begins again.

Not all water, however, stays on the surface of the Earth in the hydrologic cycle. Some of it seeps into the ground through infiltration and collects under the Earth's surface as ground water. This ground water is extremely important to life on the Earth, since 95 percent of the Earth's water is in the oceans and too salty for human beings or plants. Of the five percent on land, only 05 percent is above ground in rivers or lakes. The rest is underground water. This ground water is plentiful and dependable,

because it doesn't depend on seasonal rain or snow. It is the major source of water for many cities. But as the population increases and the need for water also increases, the underground water in some areas is getting dangerously low. Added to this problem is an increasing amount of pollution that seeps into the ground water. In the future, with a growing population and more toxic wastes, the hydrologic cycle we depend on could become dangerously unbalanced.

18. Выполните тестовые задания с последующим подтверждением соответствующих фактов из текста.

1. Clouds are formed from … .

a) water vapour
b) evaporation
c) the hydrologic cycle
d) ground water

2. Water returns to the Earth by … .

a) infiltration
b) pollution
c) precipitation
d) evaporation

3. Ground water … .

a) depends on seasonal rain
b) comes from toxic waste
c) is 05 percent of all water
d) collects under the earth

4. The amount of ground water is … .

a) about 95 percent of all water
b) less than five percent of all water
c) 05 percent of above-ground water
d) 95 percent of above-ground water

5. The supply of ground water is getting lower because of … .

a) conservation
b) toxic waste
c) pollution
d) population increase

6. The best title for this passage is … .

a) Water Conservation
b) The Hydrologic Cycle
c) Underground Water
d) Polluted Groundwater

ТЕСТОВЫЕ ЗАДАНИЯ

Выберите один правильный ответ.

1. ELEMENTS ARE
   1) building block of matter
   2) the basis of any science
   3) a part of a whole

2. A COMPOUND IS A
    1) metal
    2) mixture
    3) number

3. SOME PHYSICAL CHANGES DO NOT INCLUDE
    1) colour
    2) smell
    3) change in composition

4. IT IS NOT THE STATE OF MATTER
    1) solid
    2) property
    3) liquid

5. THE BOILING POINT OF WATER IS
    1) 100 °C
    2) 30 °F
    3) 0 °C

6. A LARGE NUMBER OF FACTORS … THE RATE OF CHEMICAL REACTIONS
    1) is influence
    2) influence
    3) are influenced

7. PROPERTIES OF SUBSTANCES … BY CHEMISTS
    1) study
    2) studies
    3) are studied

8. THE BEHAVIOUR OF MATTER … BY PHYSICAL LAWS
    1) governs
    2) is governed
    3) governed

9. CARBON AND OXYGEN … CARBON DIOXIDE
    1) compose
    2) is composed
    3) will be composed

10. A CHEMIST … KNOW THE STATES OF MATTER
    1) can
    2) is able
    3) must

11. OXYGEN … BE LIQUEFIED ONLY UNDER COMPRESSION
    1) must
    2) can
    3) has to

12. WORKING IN THE LAB ONE … BE VERY CAREFUL WITH TOXIC SUBSTANCES
    1) should
    2) can
    3) could

13. NATURALLY … WATERS CONTAIN DISSOLVED MINERAL SUBSTANCES
    1)finding
    2)occurring
    3)taking

14. WATER IS AN IMPORTANT CONSTITUENT OF THE EARTH'S SURFACE AND ATMOSPHERE, ALSO IN … FORM
    1)vapour
    2)combined
    3)solid

15. POTABLE WATER AS WATER FIT TO DRINK MUST BE FREE FROM
    1) dissolved mineral substances
    2) organic matters, different salts and gases
    3) toxic salts, harmful organic and sewage contamination

16. WATER ABUNDANTLY … IN VAPOUR FORM, ANIMALS AND VEGETABLE TISSUES
    1) occurs
    2) occurring
    3) to occur

17. THERE ARE MINERAL WATERS … HAVE THE TOTAL MINERAL CONTENT SIGNIFICANTLY GREATER THAN THE AVERAGE
    1) who
    2) which
    3) what

18. MOST ANIMALS … LARGE QUANTITIES OF WATER WITH THEIR FOOD
    1) use
    2) make
    3) take

19. THE MINERALS … STILL … IN A TEST-TUBE WITH WATER
    1) are dissolving
    2) have been dissolved
    3) is dissolved

ТЕМА 5

МЕСТО ХИМИИ В СОВРЕМЕННОЙ ЖИЗНИ

1. Прочитайте и запомните:

а) слова, обозначающие названия веществ и их свойства:

paint [peɪnt] n – краска, окраска
dye [daɪ] n – краска, краситель
residue ['rezɪdju:] n – осадок, вещество
fuel [fjuəl] n – топливо, горючее
medicine ['medsɪn] n – лекарство, медицина
solvent ['sɔlvənt] n – растворитель
soap [soup] n – мыло
starch [sta:tʃ] n – крахмал
fat [fæt] n – жир
powder ['paudə] n – порошок, пудра
volatile ['vɔlətaɪl] α – летучий
cosmetic [kɔz'metɪk] n, α – косметика, косметический
additive [' ædɪtɪv] n – добавка, наполнитель

б) слова, обозначающие названия процессов:

heat [hi:t] n – теплота, v нагревать
cover ['kʌvə] v – закрывать, покрывать, охватывать
saturate ['sætʃəreɪt] v – насыщать, нейтрализовать
preserve [prɪ'zə:v] v – сохранять, хранить

в) общенаучные слова:

case [keɪs] n – случай
nutrition [nju:´trɪʃən] n – питание

deficiency [dɪ'fɪʃənsɪ] n – недостаток, дефицит

appearance [ə´pɪərəns] n – внешний вид, появление

surface [´sə:fɪs] n – поверхность

quantity [´kwɔntɪtɪ] n – количество

investigate [ɪn'vestɪgeɪt] v – исследовать

connect [kə'nekt] v – соединять (ся), связывать (ся)

provide [prə'vaɪd] v – обеспечивать, снабжать

apply [ə'plaɪ] v – применять, употреблять

exist [rg'zɪst] v – существовать, находиться

directly [dɪ´rektlɪ] *ad* – *v* прямо, непосредственно

probably ['prɔbəblɪ] *adv* – вероятно

2. Прочитайте определения значений слов и заполните пропуски словами, соответствующими данным значениям.

1. Powder, liquid or cream used to make our appearance beautiful are called …. 2. A liquid which can dissolve other substances is called … . 3. A solid colouring matter which may be mixed with water, oil, etc. and used to colour different surfaces is called … . 4. Any substance, for example, oil, coal, which can be burned to give heat is called … .5. A substance or drug which one takes to cure diseases is called … .6.The substance used for washing is called … . 7. A white tasteless substance found in many plants and used as food is called … .

3. Назовите существительные, соответствующие глаголам, расположенным слева. Переведите их.

investigate	provision
add	isolation
provide	existence
derive	application
preservation	characterize
connect	investigation
exist	derivative
saturate	connection
preserve	saturation
apply	addition
isolate	characteristics

4. Прочитайте следующий отрывок и перескажите его на английском языке.

M.V. Lomonosov (1711–1765) is an outstanding Russian scientist. Born on the banks of the cold White Sea as a youth he came from his native village to Moscow to obtain an education. After studying in the Moscow Slavonic Greek Latin School he came to St. Petersburg to the newly organized academy university. Here he attended lectures delivered by foreign academicians and worked in the physics “cabinet” of the academy with the scientific equipment collected by Peter the Great. In 1736 Lomonosov was sent to Marburg, Germany, to study with the German scientist Wolf, and in July 1739 he went to Freiburg to work in the field of chemistry. Lomonosov returned to Russia in the summer of 1741 and was appointed an adjunct of the academy. In 1744 he was appointed professor and academician.

Lomonosov's contribution to Russian intellectual life was varied and significant. He studied the elements and their transformation. He paid much attention to the theoretical principles of chemistry by lecturing on physical chemistry and carrying out research on the nature and properties of salt solutions. In 1749 he organized, built and equipped a chemical laboratory for the academy where he repeated the experiments of R. Boyle on the changes of weight and made many important discoveries.

5. Ответьте на вопросы, используя активную лексику урока.

1. Graphite is used in the production of pencils, isn't it? 2. What well-known compounds do carbon and hydrogen form? 3. At what age do young people usually use cosmetics? 4. What chemical substances do we call “saturated” and “unsaturated”? 5. What kind of foods do you like best: milk, meat, butter or other animal fats? 6. What substances are more important for nutrition: proteins or carbohydrates? 7. Do paints or dyes find an application in our everyday life? 8. In what field of science are plastics investigated?

6. Прочитайте текст А. Укажите предложения с местоимением “It”, объясните его употребление. Укажите типы придаточных предложений, содержащихся в тексте.

TEXT A

IMPORTANCE OF CARBON CHEMISTRY

It is well known that the element carbon plays an important role in the life on Earth. If all the carbon and carbon compounds were suddenly removed from the earth it would look like the surface of the moon[1]. Many of the little everyday things would be quite impossible without the element carbon. In an ordinary pencil for example the inside of the pencil made from graphite which is an elementary form of carbon, the wood and the paint on the surface of the pencil are all of carbon or carbon compounds. The paper in this book, the cover, and so on are also made of carbon compounds. All of the clothes one wears, including shoes, cannot exist without carbon. If carbon compounds were removed from the human body, there would be nothing left except[2] water and a small residue of minerals and the same is true for all forms of living matter[3]. Fuels, foods and many drugs are mostly made of carbon compounds. In addition, many carbon compounds such as plastics which are directly connected with the life processes, play a vital role in one's life.

There are nearly two million different carbon compounds that have been studied and described in the chemical literature, with thousands of new ones which are reported every year.

Although there are 89 other naturally occurring elements, the number of known carbon compounds is many times greater than that of the known compounds which contain no carbon.

The very large and important branch of chemistry which studies and investigates carbon compounds is called organic chemistry. The name “organic” comes from the past when chemical compounds produced from once-living matter were called “organic” and all other compounds were called inorganic.

Only two elements, hydrogen and carbon, can explain thousands of compounds known as hydrocarbons.

The importance of carbon chemistry for man is great. Every month several hundred new organic compounds are prepared. A few of these new compounds become important as medicines, plastics, textiles, solvents, food additives, cosmetics, or some other products. A very few number may provide an important explanation of the mechanism of fundamental chemical reaction in the human body. Most, however, become laboratory findings and for the present, at least, have no practical application.

The preparation of new and different compounds through chemical reaction is called organic synthesis. The million or so organic compounds now known and characterized were synthesized in the laboratories of the world in the past 150 years.

Complex mixtures of hydrocarbon compounds containing only carbon and hydrogen occur in very large quantities in nature as petroleum and natural gas. Many other organic compounds are prepared from these materials after they are separated into their constituents. From the simplest hydrocarbon, methane, come such products as plastic vessels, acrylic fibers; vinyl paints, etc.

Carbon, hydrogen and oxygen can be combined and form a great number of compounds. They are divided into classes on the bases of the functional groups which they contain. The alcohols, the organic acids and their derivatives (compounds that can be made from them) and the esters and soaps are very important compounds of carbon, hydrogen and oxygen since they find such wide application in our everyday life.

Notes

[1] If all the carbon and carbon compounds were suddenly removed from the earth it would look like the surface of the moon – Если бы весь углерод и углеродные соединения исчезли с земли, то она выглядела бы как поверхность луны.

[2] there would be nothing left except – ничего бы не осталось, за исключением

[3] the same is true for all forms of living matter – то же нужно сказать и о всех других формах живой материи

7. Выпишите из текста определения, с которыми сочетаются следующие существительные. Переведите их:

matter, process, role, pencil, literature, explanation, application, life

8. Вставьте вместо пропусков необходимые по смыслу слова: (role, soaps, solid, vital, recognized, application, liquid, saturated nature, require).

1. Fatty acid under the action of alkalis form … , the sodium of potassium salts. 2. Each molecule of acid … one molecule of sodium hydroxide for its neutralization. 3. Oils are esters of … and unsaturated acids. 4. Oils

may be … or … which depends on temperature, molecular weight and on whether the esters are derived from saturated or unsaturated acid. 5. By the end of the nineteenth century the … and … in nutrition of the proteins, carbohydrates and fats and the most important minerals were established. 6. It was … that during the reaction 100 parts of starch gave about 110 parts of glucose. 7. Many carbon compounds such as plastics which are directly connected with the life processes, play a … role in one's life. 8. Most carbon compounds become laboratory findings and for the present have no practical … .

9. Закончите предложения, подобрав придаточные обстоятельственные предложения из текста А.

1. The earth would look like the surface of the moon if … . 2. The number of known carbon compounds is many times greater than that of the known compounds which contain no carbon although … . 3. The alcohols, the organic acids and their derivatives and the esters and soaps are very important compounds of carbon, hydrogen and oxygen since … . 4. Many other organic compounds are prepared from petroleum and natural gas after … . 5. There would be nothing left except water and a small residue of minerals if … . 6. The name “organic” comes from the past when …

10. Прочитайте предложения, добавив определение к выделенным словам.

1. In an ordinary pencil the surface and the inside of the pencil made from **graphite** are produced of carbon or carbon compounds. 2. There are nearly two million different carbon compounds that were studied and described in **literature.** 3. The **branch** of chemistry which studies carbon compounds is called organic chemistry. 4. The preparation of **compounds** through chemical reaction is called organic synthesis. 5. Such objects as **vessels**, **fibers, paints** are prepared from hydrocarbon and methane. 6. Compounds of carbon, hydrogen and oxygen are divided into classes on the basis of the **groups.**

11. Прочитайте данные предложения, употребив нужную по смыслу форму глагола, данного в скобках, в Indefinite Active или Passive.

1. Many organic compounds (приготавливать) from these materials. 2. Different colouring matters (содержать) in the substances used for

cosmetics. 3. The food additives made by the chemists (играть) an important part in improving nutrition. 4. About million organic compounds (описывать) during the past 150 years. 5. Complex mixtures of hydrocarbon compounds which (содержать) only carbon and hydrogen (встречаться) in very large quantities as petroleum and natural gas. 6. The three known elements (соединяться) and (образовывать) a great number of compounds.

12. Обсудите текст, ответив на вопросы.

1. It is known that carbon plays an important role in the life on earth. What would happen if carbon were removed from the earth? 2. What things of our everyday life that consist of carbon can you name? 3. What does the human body consist of from the point of view of the chemist? 4. Can we say that all forms of living matter consist of carbon, water and minerals? 5. Why do carbon compounds play an important role in our life? 6. What is the amount of carbon compounds? 7. What branch of chemistry investigates carbon compounds? 8. What is known about the synthesis of new organic compounds? 9. Do all organic compounds find an application in our life? 10. Do organic compounds occur in nature in large quantities? 11. What products can be prepared from the simplest hydrocarbons? 12. What compounds formed from carbon, oxygen and hydrogen are known to you?

13. Прочитайте заглавие текста В и скажите, о чем в нем пойдет речь. Прочитайте первый абзац текста и скажите, о каком веществе в нем говорится. Прочитайте текст до конца и выполните упражнения, которые за ним следуют.

TEXT B
CHEMISTRY AND NUTRITION

1. Since most men think much of what they eat it is not surprising that the early chemists spent much time on the study of food. In the eighteenth century it was already known that starch when heated with dilute sulphuric acid, gave “sugar of grapes”[1], or, as we term it, glucose. It was then recognized that 100 parts of starch gave about 110 parts of glucose and, since the sulphuric acid was unchanged in the process, the reaction must consist of the addition of about 10 per cent by weight of water to starch.

2. As early as 1820 the amino acids glycine and leucine were isolated in crystalline form from solutions prepared by heating proteins with mineral acid. By the end of the nineteenth century the nature and role in nutrition of the proteins, carbohydrates, fats and the most important minerals were established. In the twentieth century the vitamins and the elements required only in small amounts were discovered.

3. In the more advanced countries[2] the standard of nutrition of the population thanks to carbon chemistry improved markedly during the past fifty years. This improvement in nutrition plays an important part in the improvement of health and the increase in life duration. Nutrition deficiency has disappeared in most advanced countries. Now it is probable that overeating is a more serious trouble to health than undernutrition. Unfortunately, in many developing countries, particularly in tropics, the position is much less satisfactory. Diseases and death from malnutrition are still numerous.

4. The contribution of chemistry to the improvement in nutrition is very considerable. Our earth is now more productive. The comparison of present results with those of fifty years ago indicates quite extraordinary improvement. The more economical production of vegetables increased the amount of animal products such as milk, meat, butter, cheese and eggs. The food additives made by the chemists play also an important part in improving nutrition. They preserve our foods and decreases wastage as well as making the taste and appearance of our food more pleasant.

5. In the vitamin field the efforts of the chemists are especially large. Since about 1930 chemists have isolated one after another vitamins in their pure form, determined their chemical nature and in most cases synthesized them. The most important now in commercial production are vitamin A, made by partial synthesis from B-ionine, vitamin D2 by irradiation of ergosterol, vitamin D3 by irradiation of 7-dehydrochlorosterol, vitamin B by total synthesis, riboflavin by a fermentation procedure, nicotinic acid and nicotine amide by synthesis, ascorbic acid from glucose by a series of chemical and biological stages and vitamin B12 by fermentation. All these vitamins are produced more cheaply than they could be obtained from natural sources.

Notes

[1] “sugar of grapes” – виноградныйсахар

[2] in the more advanced countries – в развитых странах

14. Выразите содержание каждого абзаца в нескольких словах.

Образец: The first paragraph deals with the preparation of glucose.

(В первом абзаце говорится о получении глюкозы).

15. Прочитайте еще раз пятый абзац и укажите ключевое предложение.

16. Прочитайте предложения. Расположите их в том порядке, в котором происходят события, описываемые в прочитанном тексте. В каком столетии были сделаны эти открытия?

1. Vitamins, one after another, were isolated in pure form. 2. It was already known that starch heated with dilute sulphuric acid gave glucose. 3. Chemical nature of vitamins was determined and in most cases vitamins were synthesized. 4. The nature and role of the proteins, carbohydrates and fats in nutrition were established. 5. Amino acids, glycine and leucine, were isolated in crystalline form from protein solution.

17. Выберите, какой из заголовков наиболее полно отражает основное содержание абзацев.

Первый абзац: The reaction of glucose production. Production of glucose. study of food.

Третий абзац: The problem of nutrition of the population of the world. The problem of undernutrition in developing countries. Diseases and death from malnutrition.

Пятый абзац. The efforts of chemists in the discovery of vitamins. The discovery of groups of vitamins. Commercial discovery of vitamins.

18. Просмотрите текст С и назовите, из каких основных разделов он состоит. Прочитайте текст и выполните упражнения, которые за ним следуют.

TEXT C

CHEMISTRY AND COSMETICS

1. **Face powder**. Face powder is used to give the skin a pleasant appearance. The powder usually requires several ingredients to obtain proper appearance, sticking properties and absorbance. A typical formula

is: talc – 65 %, precipitated chalk – 10 %, zinc oxide – 20 % zinc stearate – 5 %, to which are added small amounts of perfume and colouring matter. Compact powders are similar to face powder with mineral oil or lanolin, and organic hydroxyl compounds as binders added[1]. They are pressed after mixing.

2. **Lipstick**[2]. Lipstick consists of a solution or suspension of colouring agents in a mixture of high molecular weight hydrocarbons or their derivatives or both. The material must be soft to produce a good application on lips, yet the film must not be too easily removed. Lipstick is perfumed to give an odour and pleasant taste. The colour easily comes from a dye or from the eosin group of dyes. Two dyes used for the preparation of lipstick are: dibromofluorescein (yellow-red) and tetrabromofluorescein (purple). The ingredients in a typical formulation include: dye, which gives the lipstick colour 4–8 %, castor oil, paraffin or fats which dissolve dye – 50 %, lanolin – 25 %, carnauba wax[3], beeswax, which raise the melting point of lipstick – 18 %, perfume, which gives it a pleasant taste – 1.5 %. Carnauba wax and beeswax are high molecular weight esters. Carnauba wax is extracted from the leaves of the Brazilian palm where it occurs externally on the leaves. The alcohols and acids hydrolysed from esters of beeswax contain 26 to 28 carbon atoms.

3. In the manufacture of lipstick the dye is added to the castor oil and then the waxes, lanolin and perfume are mixed with them. Then the mass is heated till a homogenous mixture is obtained. The mass is then put into suitable forms, and after a number of other operations packaged.

4. **Eye make-up**[4]**.** There are several types of eye make-up: eye-brow pencils, mascara for eyelashes and shading[5]. Eyeshadow or shading which is now popular, was also very popular in ancient Egypt. Eyebrow pencils are very much like lipstick, but they contain a different colouring matter. The colouring matter is a pigment such as lampblack[6]; the other ingredients include fats, oils, petrolatum, and lanolin, mixed to give the necessary melting-point, which may be higher by the addition of beeswax or paraffin. Petrolatum is a semisolid mixture of hydrocarbons, saturated and unsaturated with melting-point 34 ºC to 54 ºC. Brown pencils are made by using iron oxide pigments in place of lampblack.

5. **Mascara** is used to darken eyelashes and give them a longer appearance. The same colours as in the eyebrow pencils are used as well as other mineral colouring matters such as chromic oxide (dark green) and ultramarine (blue) pigment of various composition; a silicate of sodium

and aluminium silicate with some sodium sulphide. The colouring matter is suspended in a mixture of oils, fats and waxes. The mascara may be water-soluble or water resistant, depending upon the composition of the mixture. A typical formulation consists of about 40 per cent wax (bees wax[7] carnauba wax, and paraffin), 50 per cent soap (such as thriethanolamine), 5 per cent lanolin and 5 per cent colouring matter.

6. **Perfume.** A perfume is a material containing one or more volatile constituents which can produce aroma. The sense of odour is quite complex and the nose can distinguish a great number of different odours. The chemistry of perfumes is quite complex since it includes up to 5000 different natural or synthetic materials. A typical perfume has at least three components of somewhat different volatibility and molecular weights. The first, called the top note[8], is the most volatile and is the specific odour when the perfume is first applied. The second called the middle note, is less volatile and is generally a flower extract (violet, lilac, etc.). The last or end note[9] is least volatile and is usually a resin.

7. Most perfumes contain many components and chemically are often complex mixtures. As the analysis of natural perfume materials progresses, the use of pure synthetic organic compounds which increase the number of specific odours becomes very common. Other compounds used in perfumes include high molecular weight alcohols and esters. Esters of these alcohols are used to make synthetic rose aromas for perfumes. For example the ester formed by reaction between geraniol and formic acid has a rose type odour.

8. Typical perfumes are 10 to 25 % perfume essence and 75 to 90 % alcohol. Perfumes are added to most cosmetics to give them a pleasant odour. They also mask the natural odour of their constituents. They are often mildly bactericidal and antiseptic.

Notes

[1] as binders added – добавляемые в качестве склеивающих веществ

[2] lipstick – губная помада

[3] carnauba wax – воск листьев бразильской пальмы

[4] eye make-up – косметика для глаз

[5] mascara for eyelashes and shading – тушь для ресниц и тени

[6] lampblack – сажа, черная краска из ламповой сажи

[7] bees wax – пчелиный воск

[8] top note – высоколетучий

[9] end note – низколетучий

19. Прочитайте внимательно каждый абзац и ответьте на вопросы по абзацу.

Образец: What does each paragraph deal with? – The first paragraph deals with (describes) the composition of face powder. The second paragraph deals with …

20. Прочитайте следующие утверждения и скажите, все ли они верны.

Face powder gives the skin a pleasant appearance. 2. Lipstick applied on lips is easily removed from them. 3. Eye make-up and lipstick are very similar in composition and differ only in such ingredients as fats, oils, etc. which are added as binders. 4. In the production of mascara and eyebrow pencils the same dyes are used. 5. A perfume contains several volatile constituents which can produce specific aromas. 6. Every perfume contains three notes of odour which are clearly distinguished. 7. All perfumes contain many components which are chemically very complex mixtures.

21. Ответьте на вопросы.

1. Were cosmetics popular in ancient times as it is now? What do you think of it? 2. What cosmetics are most popular among young girls? 3. Whatcosmetics of the above read do you prefer? 4. What constituent is characteristic for face powder, lipstick and perfumes and is not usually applied in the production of eye make-up? 5. What does the colour of lipstick depend on? 6. What type of mascara is more preferable: water-soluble or water-resistant?

22. Подготовьте сообщение по теме: “Importance of Carbon Chemistry”. Используйте следующие вопросы.

1. What branch of chemistry studies carbon and its compounds? 2. Is it true to say that carbon compounds are the most numerous on Earth?

3. What things are made of carbon? 4. Why do we say that carbon is very important for our life? 5. Why do carbon compounds occur in a very great number? 6. In what fields of our life are carbon compounds used? 7. What products of carbon chemistry do we use in pharmacy and medicine? 8. Are all carbon compounds discovered and investigated? 9. What products of carbon chemistry are necessary for you every day? 10. Why do we say that the standard of nutrition of population has improved considerably thanks to carbon chemistry?

ТЕСТОВЫЕ ЗАДАНИЯ

Выберите один правильный ответ.

1. IF CARBON COMPOUNDS WERE REMOVED FROM THE HUMAN BODY, THERE WOULD BE NOTHING LEFT EXCEPT
    1) water and oxygen
    2) water and a small residue of minerals
    3) minerals

2. EVERY … SEVERAL HUNDRED NEW ORGANIC COMPOUNDS ARE PREPARED
    1) month
    2) week
    3) year

3. THE PREPARATION OF NEW AND DIFFERENT COMPOUNDS THROUGH CHEMICAL REACTION IS CALLED … SYNTHESIS
    1) functional
    2) creative
    3) organic

4. COMPLEX MIXTURES OF HYDROCARBON COMPOUNDS CONTAINING ONLY … OCCUR IN VERY LARGE QUANTITIES IN NATURE AS PETROLEUM AND NATURAL GAS
    1) carbon and hydrogen
    2) carbon and oxygen
    3) oxygen and hydrogen

5. MOST CARBON COMPOUNDS BECOME LABORATORY FINDINGS AND FOR THE PRESENT HAVE NO PRACTICAL
    1) role
    2) application
    3) recognition
6. IN THE … CENTURY IT WAS ALREADY KNOWN THAT STARCH WHEN HEATED WITH DILUTE SULPHURIC ACID, GAVE "SUGAR OF GRAPES"[1], OR, AS WE TERM IT, GLUCOSE
    1) seventeenth
    2) nineteenth
    3) eighteenth

7. NUTRITION DEFICIENCY HAS DISAPPEARED IN MOST … COUNTRIES
    1) advanced
    2) developing
    3) populated

8. SINCE ABOUT … CHEMISTS HAVE ISOLATED ONE AFTER ANOTHER VITAMINS IN THEIR PURE FORM, DETERMINED THEIR CHEMICAL NATURE AND IN MOST CASES SYNTHESIZED THEM
    1) 1950
    2) 1940
    3) 1930
9. VITAMIN A IS MADE BY … FROM B-IONINE
    1) total synthesis
    2) partial synthesis
    3) fermentation

10. ASCORBIC ACID IS MADE FROM GLUCOSE
    1) by a series of chemical and biological stages
    2) fermentation
    3) total synthesis

11. FACE POWDER IS USED TO GIVE THE SKIN A PLEASANT
    1) odour
    2) taste

3) appearance

12. PERFUMES ALSO MASK THE … ODOUR OF THEIR CONSTITUENTS
    1) natural
    2) heavy
    3) peculiar

13. THE VERY LARGE AND IMPORTANT BRANCH OF CHEMISTRY WHICH STUDIES AND INVESTIGATES CARBON COMPOUNDS … ORGANIC CHEMISTRY
    1) will be called
    2) had been called
    3) is called

14. CARBON, HYDROGEN AND OXYGEN
    1) must combine
    2) can be combined
    3) should be combined

15. CHEMICAL COMPOUNDS PRODUCED FROM ONCE-LIVING MATTER … “ORGANIC” AND ALL OTHER COMPOUNDS … INORGANIC
    1) call
    2) were called
    3) called

ТЕМА 6

ПЕРИОДИЧЕСКАЯ ТАБЛИЦА И ПЕРИОДИЧЕСКИЙ ЗАКОН

Grammar: Sequence of tenses

Text A

1. Обратите внимание на произношение следующих слов:
to realize, weight, success, chaos, to apply, majority.

2. Ознакомьтесь со следующими словами. Запомните их значения:

order	– порядок
comparison	– сравнение
similarity	– сходство
to increase	– увеличивать
to apply	– применять
to follow	– следовать за чем-либо, кем-либо
insight	– интуиция, проницательность
lucidly	– ясно, понятно
density	– плотность
to be convinced	– быть убежденным
tool	– инструмент
particle	– частица
advanced	– прогрессивный
infinitely	– бесконечно
lucky	– удачливый

3. С помощью приставок образуйте новые слова. Установите их значения:

un – : known, successful, lucky, stable;

dis – : solve, order, agree, continue;

de – : formation, stabilize, compose, colourize.

4. Прочтите и переведите текст.

The story of how D.I. Mendeleev established the Periodic System of Elements has long been a matter of great interest to research workers.

When Mendeleyev began to teach at St. Petersburg University, chemistry was still far from being the well-ordered and harmonious branch of science that we know today.

The great majority of scientists were firmly convinced that atoms of different elements were in no way connected with each other, and that they were quite independent particles of nature. Only a few advanced scientists realized that there must be a general system of laws which regulates the behaviour of atoms of each and every element. However, the few attempts made by Beguyer de Chancourtois, Newlands, Lothoer Meyer and others to find a system of laws controlling the behaviour of atoms were unsuccessful and didn't influence Mendeleyev, the future founder of the Periodic System of Elements.

"Mendeleyev was a man who hated any kind of disorder and chaos," writes Academician A.A. Boikov. "This is why at the beginning of his course in chemistry at St. Petersburg University, where he had been appointed to the department of chemistry, D.I. had to establish order in the chemical elements."

By comparison of chemical properties of different elements researchers had long ago discovered that elements could be placed in several groups according to similarity in their properties.

Mendeleyev came to the conclusion that the most likely property in this respect was their atomic weight. He discovered one of the laws of nature which he called the Periodic Law. It states: "The properties of the elements are a periodic function of their atomic weights." He applied this principle in his Periodic Table of Elements - the listing of the elements according to increasing weights. The Periodic Law proved the universal law of nature – Transformation of Quantity into Quality.

Because he had the insight to see that many elements had not yet been discovered, he left open spaces in the Periodic Table. For example, he predicted that an unknown element with atomic weight of 44 would be

found for the space following calcium. And in 1879 the Swedish chemist Lars Fredric Nilson discovered scandium.

Mendeleyev's table developed into the modern Periodic Table, one of the most important tools in chemistry. The vertical columns of the modern Periodic Table are called groups and the horizontal rows are called periods. The atomic number of an element is the number of protons in the nucleus of the atom of that element. The modern Periodic Table not only clearly organizes all the elements, it lucidly illustrates that they form “families” in rational groups, based on their characteristics.

5. Дайте русские эквиваленты следующих слов и словосочетаний из текста:

1. research worker
2. well-ordered
3. majority
4. firmly
5. were convinced
6. particles
7. advanced
8. realized
9. unsuccessful
10. to exercise
11. to influence
12. hated
13. had been appointed
14. disorder
15. comparison
16. according to
17. similarity
18. applied
19. increasing
20. insight
21. for example
22. weight
23. tools
24. nucleus
25. lucidly
26. density

6. Найдите синонимы слов и словосочетаний в упражнении 5:

a) to affect
b) investigator
c) were sure
d) unlucky
e) resolutely
f) progressive
g) had been given a position
h) instruments
i) for instance
j) centre
k) very small bits
l) understood
m) to exert
n) chaos
o) likeness
p) making greater
q) collation
r) properly organized
s) in agreement with
t) thickness
u) used
v) disliked very much
w) intuitive cognition
x) heaviness
y) clearly
z) a greater number

7. Составьте словосочетания, встречающиеся в тексте:

1) unsuccessful	a) disorder
2) well-ordered	b) chemical properties
3) independent	c) the atom
4) majority of	d) the behavior of atoms
5) to experience	i) scientists
6) important	f) particles
7) to regulate	g) lucidly
8) increasing	h) attempts
9) hated	i) order
10) comparison of	j) weight
11) to apply	k) branch of science
12) nucleus of	l) influence
13) to illustrate	m) the principles
14) to establish	n) tools

8. Соедините начало и конец предложений в частях A и B по смыслу и в соответствии с фактами, о которых вы узнали из текста.

A

1. The majority of scientists were sure that …
2. Newlands believed that …
3. Few scientists knew that …
4. Mendeleyev predicted that …
5. Academician A.A. Boikov writes that …
6. Now every student of chemistry knows that …
7. The modern Periodic Table illustrates that …
8. Research workers wanted to know how …
9. Scientists discovered that …
10. In 1879 it was reported that …

B

a) a new element would be discovered for the space following calcium;
b) atoms of different elements were independent particles;
c) Mendeleyev had to establish order in chemical elements;

d) his attempts to find a system of laws would be continued by other scientists;
e) Mendeleyev's table developed into the modern Periodic Table;
f) the elements form “families” in rational groups;
g) Mendeleyev had discovered the Periodic System of Elements;
h) Lars Fredric Nilson had discovered scandium;
i) elements could be placed in several groups;
j) their method of investigation could be applied in many experiments.

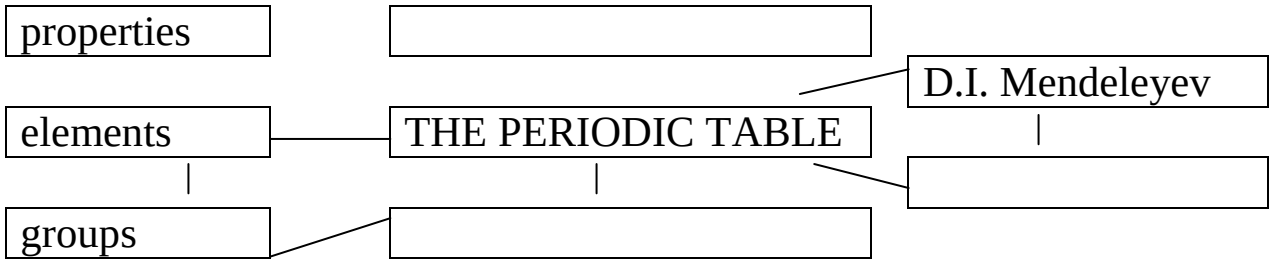
9. Ответьте на следующие вопросы по тексту.

1. Where did Mendeleyev start ordering the elements?
2. What did scientists of Mendeleyev's time think about atoms of different elements?
3. What did a few advanced scientists realize?
4. What did the researchers try to do to find some order of the elements?
5. Why did Mendeleyev turn to ordering the elements?
6. What law did Mendeleyev discover?
7. How did Mendeleyev list the elements?
8. What law of nature was proved by the Periodic Law?
9. Why did Mendeleyev leave open spaces in the Periodic table?
10. What does the atomic number of an element mean?

10. Скажите, верны ли следующие утверждения: Используйте фразы согласия или несогласия.

1. D.I. Mendeleyev started ordering the elements at St.Petersburg University.
2. The great majority of scientists failed to order the elements.
3. D.I. Mendeleyev listed the elements according to their names.
4. D.I. Mendeleyev discovered the law of Transfomation of Quantity into Quality.
5. The Periodic Law proved the universal law of nature.
6. D.I. Mendeleyev didn’t leave open spaces in the Periodic table.
7. Modern Periodic table is a very important tool in chemistry.

11. Заполните таблицу.



12. Найдите в тексте предложения, в которых использовано правило «Согласование времен». Переведите предложения на русский язык.

13. а) Переведите следующие предложения на русский язык.

1. The scientist said that our age was the age of chemistry.

2. The ancient Greek philosophers thought that matter consisted of infinitely small particles.

3. Aristotle believed that his theory would agree with the general views on nature.

4. After Copernicus and Galileo everybody could know that the Earth turns round the Sun.

5. Cavendish discovered that water consists of a definite proportion of hydrogen and oxygen.

6. Few scientists of that time knew that Mendeleyev had discovered the Periodic System of Elements.

7. It was reported that those interesting experiments would initiate a series of similar investigations.

8. The professor said that they had found some unknown properties of that substance.

9. It was reported that the new element would occupy the definite place in the Periodic Table.

10. They assumed that their method of investigation could be applied in many experiments.

b) Переведите следующие предложения на английский язык.

1. Профессор сказал, что этот эксперимент иллюстрирует его доклад.

2. Студенты сказали, что узнали о новом открытии на семинаре.

3. Преподаватель знал, что несколько студентов станут исследователями.

4. Ученые были уверены, что некоторые открытия повлияли на научные взгляды Менделеева.

5. Несколько прогрессивных ученых понимали, что существует определенная система элементов.

6. В своей книге Б.Н. Конарев доказывает, что в древности люди знали только необходимые для жизни вещества.

7. Алхимики в IX-X вв. считали, что все вещества можно разделить на органические и неорганические.

8. Лавуазье ответил на те вопросы, на которые не могли найти ответы ученые нескольких поколений.

9. Преподаватель рассказал на лекции, какой вклад внес Берцелиус в неорганическую химию.

10. Мы знаем, что Берцелиус был автором нескольких учебников по химии.

Text B

1. Ознакомьтесь со словами и выражениями к тексту B. Запомните их значения:

creator	– создатель
achievement	– достижение
at the age of …	– в возрасте …
finals	– выпускные экзамены
to award smth	– наградить чем-либо
with one’s own hands	– своими руками
a lot of	– множество
to take into account	– принимать во внимание
to be interested in	– интересоваться

applied – прикладной

to pay attention to – уделять внимание

oil pipe-line – нефтепровод

2. Прочтите следующие гнёзда слов. Установите их значения:

create – creator, creative, creation;

achieve – achievement;

calculate – calculation;

develop – development;

discover – discovery.

3. Дайте три формы следующих неправильных глаголов:

to be, to grow, to get, to go, to have, to write, to leave, to make, to put.

4. Прочтите и переведите следующий текст.

D. I. MENDELEYEV

D.I. Mendeleyev, the creator of the greatest achievement in chemistry, the Periodic Table, was born on January 7, 1834. He was born and grew up in Tobolsk. His father was a teacher. Mendeleyev got his secondary education in his native town and after finishing school at the age of 16 he went to St. Petersburg and entered the Pedagogical Institute. In 1855 he passed his finals and was awarded the Gold Medal.

In 1859 he finished his scientific work “On Specific Volumes” and left his Motherland for abroad. He had been there (abroad) for 2 years. After arrival in St. Petersburg he was first appointed professor of the Technological Institute, and 2 years later, that of the University, where he delivered a course of lectures on chemistry. His lectures were always listened to with great interest and attention.

Mendeleyev made thousands of experiments with his own hands. He made thousands of calculations, wrote a lot of letters, studied many reports.

The greatest result of Mendeleyev's creative activity was the discovery of the Periodic Law. This Law is the basis of the Periodic Table. In 1869 the description of more than 60 elements was completed, and Mendeleyev published his Periodic Table.

In his book “The Principles of Chemistry” inorganic chemistry was described taking the Periodic Table into account. In 1905 D.I. Mendeleyev wrote: “this book is a favourite child of mine”.

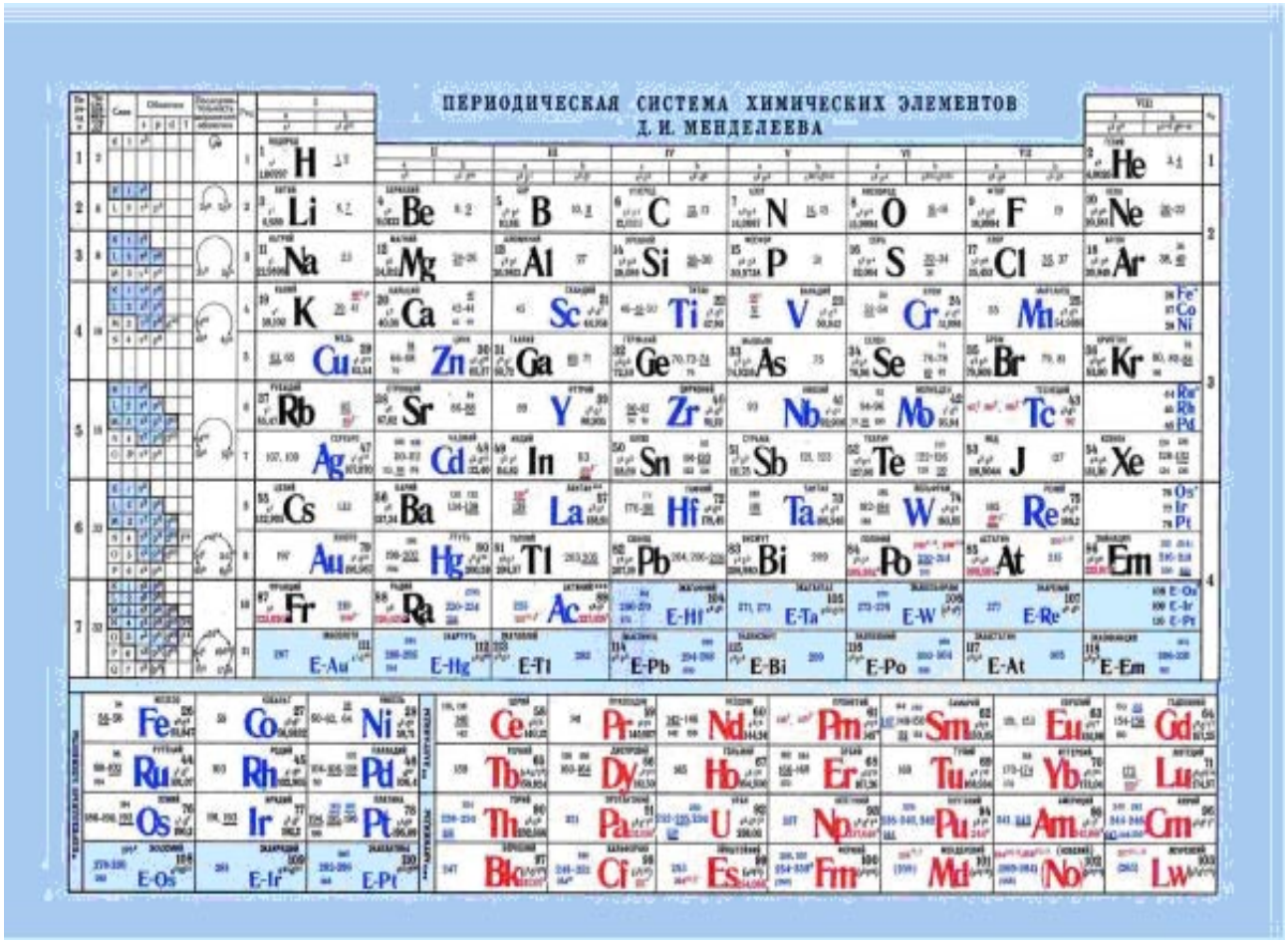
He was interested in many subjects of applied chemical nature. He was the first to put forward the idea of studying the upper layers of the atmosphere.

Then connecting theory with practice Mendeleyev paid much attention to the development of home industry (oil industry). He suggested building of the oil pipe-line from Baku to the Black Sea.

Mendeleyev was elected member of many academies abroad. He died in 1907 at the age of 75.

5. Скажите, верны ли следующие утверждения.

1. The discovery of the Periodic Law is Mendeleyev’s greatest contribution to science.
2. Mendeleyev got a higher education in Germany.
3. Being a researcher Mendeleyev never delivered any lectures.
4. The Periodic Table was published when only 60 elements had been discovered.
5. The Periodic Table was taken into account in the book “The Principles of Chemistry”.
6. Mendeleyev was appointed professor right after graduation from the Institute.
7. Mendeleyev always connected theory with practice.



6. Ответьте на следующие вопросы по тексту.

1. When and where was D.I. Mendeleyev born? 2. What was his father? 3. What age did he finish school at? 4. Where did Mendeleyev get higher education? 5. Was he awarded the Gold Medal after graduation from the Institute? 6. When did D.I. Mendeleyev go abroad? 7. How many years did Mendeleyev spend abroad? 8. What was the result of Mendeleyev's creative activity? 9. When did he publish the Periodic Table? 10. What course of lectures did Mendeleyev deliver? 11. What book did D.I. Mendeleyev call a favourite child of his? 12. Was D.I. Mendeleyev interested in home industry? 13. Was Mendeleyev known abroad? 14. At what age did Mendeleyev die? 14. Is the Periodic table applied now?

7. Используя вопросы упражнения 6 в качестве плана, расскажите об основных фактах из биографии Д. И. Менделеева.

8. Закончите следующие предложения, используя выражение “at the age of …”.

1. My friend finished school … . 2. I entered the University ... . 3. I began to study English …. . 4. D.I. Mendeleyev graduated from the Institute … . 5. D.I. Mendeleyev was appointed professor … . 6. He published his first book … .

9. Вместо пропусков вставьте предлоги, где необходимо.

1. A lot … students were present there and listened ... the lecturer ... great attention. 2. I want to do this experiment … my own hands. 2. The best student … our university was awarded … the Gold Medal. 4. Do you pay much attention … this subject. 5. I wanted to write a lot … letters but couldn't do it. 6. He is interested … chemistry. 7. Taking ... account the obtained data the scientist came ... an important conclusion. 8. Few Russian scientists were awarded ... the Nobel Prize.

10. Составьте предложения со следующими словами:

finals, to award, to deliver, scientific, to be interested in, at the age of, to pay attention to, with one's own hands, a lot of, subject.

11. Переведите следующие предложения на английский язык.

1. Мне нужно написать множество писем, но у меня нет времени. 2. Его научная работа не опубликована. 3. Мы были за границей 2 года назад. 4. Он интересуется вашими успехами. 5. Менделеев уделял много внимания развитию отечественной промышленности. 6. Менделеев – создатель периодической таблицы химических элементов. 7. Менделеев многого достиг в области химии. 8. После окончания педагогического института Менделеева наградили золотой медалью. 9. Студентам читают курс лекций по фармакологии. 10. Я поступил (а) в Университет в возрасте 16 лет. 11. Мы сделали множество опытов самостоятельно. 12. Какому предмету вы уделяете особое внимание? 13. Я интересуюсь последними достижениями в области высоких технологий.

12. Задайте вопросы к следующим ответам.

1. Who ...?

D.I. Mendeleyev was the greatest Russian chemist.

2. What ... ?

   The Periodic Table is an important tool in chemistry.

3. What ... ?

   Mendeleyev discovered the Periodic Law.

4. Where ... ?

   Mendeleyev grew in Tobolsk.

5. What ...?

   The scientist has already finished his experiment.

6. What ... ?

   This student will be able to finish his laboratory work in time.

7. What properties ... ?

   The researchers study the properties of a new substance.

ТЕСТОВЫЕ ЗАДАНИЯ

Выберите один правильный ответ.

1. MENDELEYEV STARTED ORDERING THE ELEMENTS
   1) at school
   2) at St. Petersburg University
   3) abroad

2. MENDELEYEV TURNED TO ORDERING THE ELEMENTS BECAUSE
   1) other scientists' attempts failed
   2) he had talent
   3) he liked order

3. THE RESEARCHERS TRIED A LOT TO FIND SOME ORDER OF THE ELEMENTS
   1) they compared different properties
   2) they read scientific literature
   3) they denied the earlier attempts of the scientists

4. MENDELEYEV LISTED THE ELEMENTS ACCORDING TO THEIR
    1) names
    2) increasing weights
    3) chemical symbols

5. THE SCIENTISTS OF MENDELEYEV'S TIME THOUGHT ABOUT ATOMS OF DIFFERENT ELEMENTS THE FOLLOWING: THEY
    1) were independent particles of nature
    2) were closely connected
    3) belonged to a well-ordered system

6. THE ATOMIC NUMBER OF AN ELEMENT IS
    1) a number of atoms in the molecule of this element
    2) the number of protons in the nucleuso f the atom of this element
    3) the number of electrones on the orbit

7. MENDELEYEV WAS AWARDED THE
    1) Nobel Prize
    2) medal “For Great Services to Motherland”
    3) gold medal

8. THE ROLE OF MODERN PERIODIC TABLE IS
    1) useless
    2) an example of an absurd discovery in chemistry
    3) one of the most important tools in chemistry

9. INVESTIGATION OF OZONE SHOWED THAT IT (TO RESEMBLE) OXYGEN IN MANY RESPECTS
    1) resemble
    2) is resembled
    3) resembled

10. IT WAS NOTICED THAT SALTS OF URANIUM (CAN) AFFECT PHOTOGRAPHIC PLATES
    1) could
    2) can
    3) will be able

11. ALCHEMISTS BELIEVED THAT MERCURY (TO BE) A CONSTITUENT OF ALL METALS
    1) is
    2) was
    3) were

12. IT WAS SHOWN THAT THE SOLUBILITY OF THIS SUBSTANCE (TO INCREASE) WITH THE INCREASE OF TEMPERATURE
    1) increases
    2) increase
    3) had increased

13. IT FREQUENTLY HAPPENED THAT THE MOLECULAR WEIGHTS OBTAINED BY SOME METHODS (NOT / TO AGREE) WITH THOSE OBTAINED BY OTHER METHODS
    1) didn’t agree
    2) doesn’t agree
    3) will not agree

14. HE WANTED TO KNOW IF OTHER WAYS OF OBTAINING HYDROGEN (TO BE DISCUSSED) IN THIS BOOK
    1) will be discussed
    2) is discussed
    3) would be discussed

15. THEY WERE NOT SURE WHETHER THIS METHOD OF DRYING (TO BE APPLIED) IN CHEMICAL LABORATORIES
    1) were applied
    2) was applied
    3) is applied

ТЕМА 7

В ХИМИЧЕСКОЙ ЛАБОРАТОРИИ

1. Прочитайте следующие слова. Обратите внимание на орфографию и произношение слов латино-греческого происхождения, переведите их на русский язык:

special [ˊspeʃəl], laboratory [ləˊbɔrətəri], ventilate [ˊventıleit], group [gru:p], analysis [əˊnæləsis], cylinder [ˊsılındə], pipette [pıˊpet], **accurate [ˊækjurıt],** synthetic[sınˊθetık], natural [ˊnætʃrə], centimeter [ˊsentımi:tə], cubic [ˊkju:bık], **experiment** [ık ˊs'perımənt], apparatus [æpə'reıtəs], instrument [ˊınstruмənt], thermometer [θə'mɔmıtə], alcohol [ˊælkəhɔl], limit[ˊlımıt], reagent [ri:ˊeıdʒənt], paraffin [ˊpærəfın], temperature [ˊtemprıtʃə], solution [səˊlu:ʃən].

2. Прочитайте и запомните следующие слова.

а) названия химических веществ:

reagent [ri:'eidʒənt] – реактив, реагент
liquid [lıkwıd] – жидкость, жидкий
potassium [pə'tæsjəm] – калий
ammonium [ə'mounjəm] – аммиак
sodium [´soudjəm] – натрий
alkali ['ælkəlai] – щелочь
nitric [´naıtrık] acid – азотная кислота
sulphuric [sʌl'fjuərık] acid – серная кислота
hydrochloric ['haıdrə'klɔrık] acid – соляная кислота
methylenegreen ['meθıli:n'gri:n] – метиленоваязелень
phenolphthalein [fi:nɔl'fθæliin] – фенолфталеин
methyleneblue ['meθıli:n'blu:] – метиленовая синь

б) названия химической посуды:

test-tube [´test´tju:b] – пробирка
glass [glʌ:s] – стакан
measuring glass ['meʒərrŋ'glɑ:s] – мензурка
glass cap [´glɑ:s´kæp] – стеклянная крышка
pipette [pı'pet] – пипетка
flask [flɑ:sk] – колба
volumetric [vɔlju'metrik] flask – мерная колба
funnel [´fʌnl] – воронка
glassware [´glɑ:swɛə] – стеклянная посуда
retort [rı'tɔ:t] – реторта
graduated ['grædjuertıd] cylinder [´sılındə] – мерный цилиндр
burette [bjuə´ret] – бюретка

в) слова и словосочетания, обозначающие оборудование химической лаборатории:

rack [ræk] – полка (узкая)

shelf [ʃelf] – полка

water supply [´wɔ:təsə´plar] – водопровод

running water – проточная вода

instrument [´ınstrumənt] – прибор

ring-stand [´riŋ´stænd] – штатив с кольцом

distillator [dıstíleitə] – дистилляционный аппарат

analytical balance [ənə´lıtıkəl´bəeləns] – весы

burner ['bə:nə] – горелка

set [set] – набор, комплект

vessel ['vesl] – сосуд

scale [skeil] – шкала

centigrade-scale ['sentıgreıd] – стоградусная шкала

г) названия процессов, явлений и действий, связанных с работой в химической лаборатории:

weigh [weı] – взвешивать

weight [weit] – вес

record [rı'kɔ:d] – регистрировать, записывать

obtain [əb'teın] – получать

supply [sə'plaı] – поставлять, снабжать

melting-point [´meltiŋ´pɔint] – точка плавления

boiling-point [´bɔılıŋ´poınt] – точка кипения

amount [ə´maunt] – количество

quantitative [´kwɔntitətıv] – количественный

dissolve [dı´zɔlv] – растворять(ся), разлагать(ся)

solidify [sə´lidıfai] – затвердевать

volume [´vɔljum] – объем

volumetric [vɔlju´metrık] – объемный (анализ)

findings [´faıdıŋz] – данные

impurity [ım´pjuərıtı] – примесь

determine [dı´tə:mın] – определять

clamp [kləemp] – скреплять, зажимать

contamination [kən¸təemı´neıʃn] – загрязнение

put on [´put´ɔn] – одевать

heat [hi:t] – греть, подогревать

require [rı´kwaıə] – требовать

measure [´meʒə] – измерять

3. Прочитайте и переведите следующие словосочетания:

different chemical substances, a room for carrying out experiments, a room for weighing, a room for storing substances, a room for washing laboratory vessels, to ventilate a room, equipment of a laboratory, to carry out volumetric analyses, to carry out qualitative analyses, to measure analyses, to measure a volume, accurate measuring, greatest accuracy, measurement of volumes, a specific volume, different volumes, to prepare solutions, soluble substances, to dissolve substances, different apparatuses and instruments, analytical balances, a set of balances, running water, distilled water, to heat solutions, insoluble substances, a weighing-room, accurate weighing, empty vessels, widely used reagents, a liquid thermometer, an alcohol thermometer, scientific works, an absolute scale, solid, a solidifying-point.

4. Подберите существительные, соответствующие глаголам, расположенным слева. Обратите внимание на суффиксы существительных, назовите их:

toventilate	prevention
toenter	entrance
to find	finding
to dissolve	cleanliness

to specialize	ventilation
to measure	measurement
to prevent	solution
to clean	speciality
to determine	requirement
to contaminate	solidification
to require	division
to solidify	determination
to divide	contamination

5. Образуйте сложные или производные слова от слов, данных ниже, и переведите их на русский язык:

measure, solve, volume, pharmacy, practice, chemist, store, find, equip, contaminate, boil, melt, determine, require, usual, special, sulphur, nitrogen, methyl, tube, glass, cap, flask, distil, burn, scale, grade, cube, meter, blue, green, work, alcohol, experiment, atom, definite, analysis, specialize.

6. Прочитайте определения значений слов и заполните пропуски словами, соответствующими данным значениям.

1. A glass tube, closed at one end, used in chemical experiments is called a … . 2. Things made of glass are called … .3. A vessel wide and round at the top and narrowing to a small tube at the bottom used for pouring liquids into a small opening is called a … . 4. A substance used to show the presence of another by reaction is called a … . 5. A solution containing hydrogen and chlorine is called … . 6. A thing that lutions or works by heat is called a … . 7. An apparatus used to get or manufacture something in a very pure form by heating it till vapourand then by cooling the vapour so that it is changed into a liquid again is called a … .

7. Преобразуйте предложения, поставив глагол в страдательный залог.

Образец: The students listened to the lecture with great attention → The lecture was listened to (by the students) with great attention.

1. They carry out different experiments in the chemical laboratory. 2. After each lesson we ventilated our classes. 3. The students place laboratory

vessels on the tables. 4. In a year we shall equip our chemical laboratory with modern apparatuses. 5. Fahrenheit introduced a new scale into the experimental work in the seventeenth centure. 6. Laboratory workers obtain large amounts of distilled water by distillation. 7. After the experiment was over we recorded all the findings.

8. Образуйте альтернативный вопрос, добавив or-phrase.

Образец: Are you going home? → Are you going home or to the institute?

1. Do you use as a reagent sulphuric acid or …? 2. Was this compound obtained in a test-tube or …? 3. Do you prefer to work in the laboratory with a pipette or …? 4. Do you use distilled water or …? 5. Is it more difficult to work with methylene green or …? 6. What is larger: a volumetric flask or ...? 7. What scale do you like more in your work: a Fahrenheit or …?

9. Прочитайте и переведите предложения, содержащие местоимение **“one”** в функции подлежащего. Скажите, с какой формой глагола согласуется подлежащее **“one”.**

1. One never knows what to do in such cases. 2. One can see various apparatuses in the laboratory. 3. One should be careful when working with reagents. 4. One is always glad to see you. 5. If one wants a thing done, one had best do it oneself. 6. One can say that the temperature has also a positive effect on the solubility.

10. Переведите предложения, обращая внимание на местоимения **“one, ones**”. Назовите функции этих местоимений.

1. I don't like this book, give me another one. 2. The laboratory tables are higher than usual ones. 3. The mercury thermometer is more accurate than the alcohol one. 4. I don't like this rest-tube. Can you give me a better one? I want a large one, not a small one. – Will you have this one or that one? 5. It was necessary to use hydrochloric acid as well as sulphuric one.

11. Закончите предложения, употребив глагол в скобках в Present Indefinite Passive.

1. A laboratory is a place where experiments (to carry out). 2. A weighing-room is a place where substances (to weigh). 3. The reading

room of the library is a place where books (to read). 4. Reagents are substances which (to use) in experiments. 5. Thermometers are instruments which (to supply) with scales. 6. Distilled water is the water which (to purify) from natural impurities. 7. A lecture-room is a place where lectures (to deliver). 8. A dining-room is a place where meals (to take).

12. Прочитайте текст А. Укажите предложения, содержащие местоимение one. Назовите его функции. Приведите примеры предложений с глаголом-сказуемым в форме страдательного залога.

TEXT A. § 1. **IN THE CHEMICAL LABORATORY**

The students of the pharmaceutical department usually have **practical** classes in chemistry in the chemical laboratory. There they **carry** out various experiments, they work with different chemical substances.

The chemical laboratory consists of several rooms: a room **for** storing the necessary substances, a room for recording the **obtained** findings and a room for washing laboratory vessels.

When you enter the chemical laboratory you can see that the rooms are large and light. They are well ventilated because chemists often **work** with substances that have a strong and unpleasant odour and are **harmful.**

The laboratory is equipped with special tables which are **higher** than usual ones. On each of the tables one can see shelves and **racks** with laboratory vessels and glassware of all kinds, some of them **are** empty, while others contain laboratory reagents.

The laboratory vessels and glassware are divided into three groups: glassware for general use, glassware for special use, and glassware **for** measuring. Glassware for general use includes test-tubes, funnels, **flasks** of different shapes and sizes, retorts, etc.

Special glassware includes things necessary for carrying out **different** analyses. For example, there are special vessels for the **determination** of molecular weights, for the determination of melting- and **boiling** points, etc.

The glassware for measuring includes graduated cylinders, burettes, graduated flasks, measuring glasses, pipettes and others. Burettes are used for the very accurate measurements of volumes, as in volumetric analysis. Volumetric flasks are used to measure specific volumes accurately,

especially for preparing solutions in quantitative analysis. Pipettes provide a means for greatest accuracy in measuring volume. Ordinarily, a pipette is used to measure only one specific volume, e.g. a 25-cc. pipette. Graduated pipettes are used to measure different volumes with the same pipette. A pharmacist usually uses for measuring small volumes a 10-cc. pipette graduated in tenth cubic centimetrers and a 1-cc. pipette graduated in hundredth cubic centimeters.

The work in the chemical laboratory requires cleanliness. It is necessary to keep the working place clean. Glasstubes, vessels, bottles, funnels, etc. should be clean and ready for use. It is recommended to close the glass bottles with glass caps to prevent their contamination from air.

TEXT A. § 2. **INSTRUMENTS AND REAGENTS OF A CHEMICAL LABORATORY**

A chemical laboratory is equipped with different apparatuses and instruments. One can see there microscopes, analytical balances, distillators for obtaining distilled water as the running water contains various impurities, burners to heat solutions and thermometers.

The simplest and most common of all is a liquid thermometer. Mercury is a particularly suitable liquid because of its high boiling-point – 357, 25 ºC, and its low solidifying-point – 39 ºC. The mercury thermometer is more accurate than the alcohol one.

Thermometers are supplied with a scale. A. Celsius (1701–1744) proposed a scale on which the melting-point and boiling-point of water were taken as the limits. These points were taken as 0 ºC and 100 ºC respectively. This is now known as the Centigrade scale and is universally used in scientific works.

There are other scales in use: the scale introduced by D. Fahrenheit (1686–1736), the scale introduced by R. Reaumur (1683–1757) and by Kelvin (1824–1907) or Absolute scale. They are used in special analyses.

The apparatuses necessary for carrying out experiments are clamped to ring-stands.

There is a special room for weighing which is equipped with a set of balances for different use. The windows of the weighing-room should overlook the North as the sun may prevent accurate weighing of the substances.

On the shelves and racks besides empty vessels there are many bottles and boxes with chemical substances called reagents.

The most widely used reagents which are available at every laboratory are: acids (nitric, sulphuric, hydrochloric); alkalis (ammonium solution, potassium solution, sodium solution); oxides, inorganic salts, indicators (phenolphthalein, methylene green).

Reagents which are used in large amounts are supplied in big boxes or bottles. Reagents which are seldom used are supplied in amounts up to 10 or 1g or even less.

The work on the chemical laboratory requires also the use of solvents. The most universally used solvent is water. It is the best solvent for most inorganic salts and in addition it dissolves many organic compounds. Many plant constituents are extracted by water.

Alcohol is the next most useful solvent. It dissolves many organic substances both synthetic and natural, including many important plant constituents. It is often used diluted with water. Water as a solvent is always used after distillation. One can see distilled water on the tables in large bottles.

When students come to work to the laboratory they should put on white gowns and thoroughly wash their hands with running water before work and after it.

13. Заполните пропуски подходящими по смыслу словами (long, unpleasant, different, special, laboratory, various).

1. The senior students carry out … complex analyses. 2. There are … laboratory vessels for the determination of molecular weight. 2. Substances may have a strong and … odour. 4. The chemical laboratory consists of several … rooms. 5. When we enter the laboratory we can see … tables. 6. The … equipment consists of some apparatuses which are used to heat solutions, distil water and measure temperatures.

14. Добавьте определения к выделенным словам, подобрав их из текста А.

1. The glassware includes graduated cylinders, graduated flasks, burettes, etc. 2. The glassware includes test-tubes, funnels, glasses, flasks, retorts. 3. Chemists work with substances. 4. The room is well ventilated.

5. The students have practical classes in chemistry. 6. The work requires cleanliness. 7. Flasks are used to measure volumes.

15. Уточните данные понятия, дав им развернутое определение.

Образец: Physical laboratory.→ A physical laboratory is a specially equipped room where experiments on the physical properties of substances are carried out.

1. Chemical laboratory. 2. The laboratory vessels. 3. Volumetric flasks. 4. The equipment of the chemical laboratory. 4. Burettes. 5. Distilled water. 6. Thermo-meters.

16. Выберите предложения, которые отвечают на вопрос: What do pharmacy students do in the chemical laboratory?

1. When the students come to the chemical laboratory they wash their hands. 2. The students work there with different chemical substances. 3. On each of the tables we can see shelves and racks with laboratory vessels. 4. The laboratory vessels are divided into three groups. 5. The students usually have practical classes in chemistry in the chemical laboratory.

17. Составьте вопросы и дайте ответы по образцу.

Образец: thermometer → to take temperature → What is a thermometer used for? A thermometer is used for taking temperature.

Burner – to heat solutions, distillator – to distil water or other liquids, vessel – to keep substances in, graduated cylinder – to measure substances, pipette – to drop liquids.

18. Определите предложение, в котором глагол употреблен в страдательном залоге.

1. The set of glassware contained different vessels. 2. All the chemical glassware is of four kinds. 3. The laboratory equipment is not complex. 4. The laboratory was equipped with all the necessary apparatuses.

19. Определите предложения, в которых глагол **to be** употреблен в самостоятельном значении.

1. The air in the chemical laboratory is well ventilated. 2. It is necessary to keep working place clean. 3. Near each table there should be a high bench. 4. Glass vessels are on the shelves and racks. 5. It is recommended to close glass bottles with caps.

20. Ответьте на вопросы, используя слова в скобках.

1. How are reagents which are used in large amounts kept? (in glass vessels, protected from light). 2. How often does she work in the laboratory? (twice a week). 3. What substance is used in thermometers for the determination of boiling- and solidifying-points? (mercury). 4. What vessels provide a means for accurate measurements of volumes? (burettes, pipettes, volumetric flasks). 5. What do students put on working in the chemical lab? (gowns and caps).

21. Поставьте вопросы к выделенным словам.

1. The students thoroughly wash their hands with running water. 2. The room for weighing is equipped with a set of balances. 3. Near each table in the laboratory there should be a high bench for a chemist. 4. The air in the chemical laboratory is well ventilated. 5. The students carry out various experiments working with different chemical substances. 6. Glassware for general use includes test-tubes, funnels, etc. 7. The laboratory is equipped with long tables.

22. Определите, какое предложение является ответом на вопрос.

Is distilled water always available in the chemical laboratory?

1. Yes, she is. 2. No, they are not. 3. Of course, it is. 4. Yes, it does. 5. No, it cannot.

23. Какой из вопросов можно поставить к выделенным словам в предложении: They thoroughly wash their hands with **running water before beginning to work.**

1. What do they wash their hands with before beginning to work? 2. How do they wash their hands with running water before beginning to work? 3. When do they wash their hands with running water? 4. **What** do they

thouroughly wash before beginning to work? 5. With **what** water do they thoroughly wash their hands before beginning to work?

24. Определите, в каких предложениях говорится о правилах обращения с лабораторной посудой.

1. The work in the laboratory requires cleanliness. 2. It is recommended to close the glass bottles with glass caps. 3. When the **students** come to the laboratory they should put on white gowns and thoroughly wash their hands. 4. In the laboratory we can see bottles with **distilled** water. 5. Glass vessels are placed on the shelves and racks.

25. Какому из предложений можно присоединить придаточное: … which are used for carrying out tests.
1. The pharmaceutical students must be well acquainted with **the** equipment of the chemical laboratory. 2. Every working place is **fitted** with a burner. 3. On every table there are bottles with distilled water. 4. Large bottles contain inorganic salts. 5. The most widely used reagents are available at every laboratory.

26. Ответьте на вопросы к тексту А.

1. Where do pharmacy students have practical classes in **chemistry?** 2. Do they work with chemical substances? 3. How many rooms does typical chemical laboratory consist of? 4. What can you say about the air in the laboratory? 5. Why is it necessary to have a ventilator in the laboratory? 6. Where is the glassware placed? 7. What do glass **bottles** contain? 8. What groups is all the glassware divided into? 9. What vessels does the glassware for measuring include? 10. What vessels **does** the special glassware include? 11. Why is it necessary to close the glassware with glass caps? 12. Why is it necessary to wash the **hands** before beginning to work and after it? 13. What should the **window** of the weighing-room overlook? 14. What reagents are available at every laboratory? 15. In what amounts are reagents supplied? 16. What apparatuses is every working place fitted with? 17. What do you know about the scales which thermometers are supplied with?

27. Прочитайте заглавие текста В и скажите, о чем в нем пойдет речь. Прочитайте текст и придумайте заглавие к каждому абзацу. Скажите,

используете ли вы подобную методику приготовления буферных растворов при работе в химической лаборатории.

TEXT B

BUFFER SOLUTIONS

1. When acid or base is added to water, the hydrogen ion concentration changes markedly. If 1 ml of 0.1 N hydrochloric acid is added to 100 ml of water, the pH will drop from about 6 to 7 down to 3. If 1 ml of 0.1 N sodium hydroxide is added to 100 ml of water, the pH will rise to about 11. When acid or base is added to certain other solutions, little change is observed in the hydrogen ion concentration or pH. Solutions which exert a resistance to change[1] in hydrogen ion concentration are called buffer solutions. Strong acids or strong bases in solution can act as buffer in the low and high pH regions[2].

2. The standard buffer solutions contain mixtures of a weak acid and its salt and some contain a weak base and its salt. Weak acid or weak bases alone are poor buffering agents. The most common salts used to prepare standard buffer solutions are acetates, borates, citrates, phosphates, and phthalates.

3. Standard buffer solutions are available in a form ready for use as concentrated solutions that can be diluted just prior to use, and in the form of powder mixtures that can be dissolved and diluted to a given volume. Standard buffer solutions may be prepared from necessary reagents as described: a) hydrochloric acid buffer solution. Place 50 ml of the potassium chloride solution in a 200 ml volumetric flask, add the necessary volume of hydrochloride solution, then add water to volume; b) phosphate buffer solution. Place 50 ml of the potassium phosphate solution in a 200-ml volumetric flask, add the necessary volume of the sodium hydroxide solution, then add water to volume; c) alkaline borate buffer solution. Place 50 ml of the boric acid and potassium solution in a 200-ml volumetric flask, add the necessary volume of the sodium hydroxide solution, then add water to volume.

4. Store the prepared solutions in chemically resistant containers, such as glassbottles. Use the solution within three months but do not use a solution that has become cloudy or something else.

5. Standard buffer solutions between pH 1.1 and 10.0 may be prepared by appropriate combinations of 0.2 M solutions described. The volumes shown are for 200 ml.

Notes

[1] which exert a resistance to change – которые не поддаются изменениям

[2] region – область, диапазон, зона.

28. Прочитайте текст С и выполните упражнения, которые следует за ним.

TEXT C

ON MEASUREMENTS

Measurements are the basis of all scientific work. There are many different units of measurements[1] depending on what it is we want to measure. There are measurements of length, mass, time, volume, density and many others. There are three fundamental units: units of mass, length and time. All other units can be expressed as combinations of these basic units; they are called derived units[2].

The fundamental unit of time is one second. The fundamental unit of length is one metre in the metric system and it was one yard in the old British system. The British system was substituted by the metric one in 1971 but the units of it are sometimes in use in everyday life. In all scientific measurements the units of the metric system are used.

The metric system.The metric system is a decimal system applied to the measurement of length and mass. The basic unit of length is the metre, and the basic unit of mass is the kilogram.

The most common prefixes in the metric system are milli-, centi-, and kilo- which mean one thousandth of, one hundredth of and one thousand times the standard of length or mass[3].

Volume of solids. The volume of a solid is expressed in cubic measure, for example, in cubic centimeters (cc or cm^3) or cubic millimeters (mm^3). Since 1 cm equals 10mm, it follows that 1 cm^3 equals 1000 mm^3.

Example: The length, width, and height of a rectangular box are 10.0 cm, 7,0 cm, and 5,0 cm respectively. Compute the volume of the box in (a) cubic centimeters and (b) cubic millimeters.

(a) Volume = 10 cm x 7 cm x 5 cm = 350 cm^3

(b) Volume = 350 cm^3 x 1000 mm^3/cm^3 = 350.000 mm^3

Volumes of liquids. The units of volume in the metric system is called a litre. A litre corresponds to 0.88 quarts in the old British system. A smaller unit is the millilitre. The millilitre is almost identical with a cubic centimetre. Thus we can say that one litre equals 1000 ml and also 1000 cm^3.

Units of mass (or weight).Units of mass are milligram, centigram, gram and kilogram. 10 milligrams (mg) equal 1 centigram; 100 centigrams (cg) equal 1 gram; 1000 grams (g) equal 1 kilogram (kg).

The instrument used for weighing objects is a balance.

Density of liquids. Volumes of liquids and gases are usually expressed in millilitres (or litres) and not in cubic centimetres which are usually used for solids.

Thus we speak of a volume of 25 ml of water but a volume of 25 cm^3 of ice.

It follows that densities of liquids are usually expressed in grams per millilitre. Thus the density of alcohol is 0.79 g/ml and the density of water is 1 g/ml.

All gases are light when compared with liquids and solids and, expressed in grams per millilitre, their densities are of a very small order of magnitude. The density of air, for example, is 0.0001293 g/ml.

Notes

[1] units of measurements – единицы измерения

[2] derived units – производные единицы

[3] one thousand times the standard – в тысячу раз больше

10 cm x 7 cm x 5 cm = 350 cm^3 – ten centimetres by seven centimetres by five centimeters give three hundred fifty cubic centimeters

29. Ответьте на вопросы.

1. Какие основные единицы метрической системы описаны в тексте?
2. Какая система измерения функционирует в Великобритании?

30. Дополните следующие предложения.

1. Cubiccentimetersareused…. 2. Metre is used … . 3. Kilogram is used …
4. Gram is used … . 5. Litre is used … . 6. Gram per milliliter is used … .

31. Переведите на английский язык, употребляя активную лексику урока.

1. На полках в химической лаборатории можно видеть все необходимое для опытов реактивы. 2. Такие реактивы как калий, натрий, соляная кислота, серная кислота, дистиллированная вода употребляются чаще, чем другие. 3. В нашей стране используется стоградусная шкала Цельсия, в Великобритании и США – в основном шкала Фаренгейта. 4. Загрязнение химической посуды и воздуха может повлиять на результаты эксперимента. 5. Объем газов измеряется в кубических сантиметрах, а объем жидкостей в миллилитрах. 6. Вода растворяет органические и неорганические соединения, поэтому она является одним из лучших растворителей. 7. Когда мы проводим эксперименты в химической лаборатории, мы используем не только имеющиеся реактивы, но и индикаторы химических веществ. 8. Провентилируйте помещение, так как бутыли с серной кислотой были плохо закрыты. 9. Во время практики студенты-фармацевты часто используют пипетки, мерные колбы, пробирки и другую стеклянную посуду. 10. Ртуть – это жидкость, точка кипения которой 357,25 ºС. 11. В лаборатории можно получать в небольших количествах любые химически чистые вещества.

32. Прочитайте предложения, употребив глагол в скобках в соответствующем времени.

1. Measurements in all scientific works (to perform) by means of various apparatuses and instruments. 2. It is known that volume of liquids (to measure) in litres. 3. The solution kept for three months in a warm place (to become) coloured and not fit. 4. When acid (to add) to the potassium chloride solution little change (to observe) in the hydrogen ion concentration. 5. The centigrade scale (to use) in most scientific works. 6. The Fahrenheit scale (to introduce) into science in the eighteenth centure. 7. Alcohol (to dissolve) many synthetic and natural substances. 8. After a thorough analysis of literature and experimental findings Mendeleyev (to arrange) all the elements in a table which consisted of vertical groups and horizontal periods. 9. In France, Sweden and Germany new elements (to discover) according to Mendeleyev table.

33. Подготовьте сообщение по теме “In the chemical laboratory” по плану.

1. Describe the rooms of a typical chemical laboratory. 2. Speak about the equipment of the chemical laboratory. 3. Describe instruments and apparatuses of the chemical laboratory. 4. Describe the laboratory glassware. 5. Describe the reagents available in the chemical laboratory. 6. Speak about the work in the chemical laboratory.

34. Вставьте вместо пропусков подлежащее.

1. … are used to measure specific volumes accurately, especially when the chemist prepares solutions for analysis. 2. When … enters the chemical laboratory … can see a large light room. 3. … is particularly suitable liquid because it has a high boiling-point – 357,25 ºC. 4. … proposed a scale on which the melting-point and boiling-point of water were taken as the limits. 5. … are periodic functions of their atomic weights.

ТЕСТОВЫЕ ЗАДАНИЯ

Выберите один правильный ответ.

1. THE PHARMACEUTICAL STUDENTS MUST BE WELL ACQUAINTED WITH … OF THE CHEMICAL LABORATORY
    1) different tests
    2) the equipment
    3) glass vessels

2. ... IN ALL SCIENTIFIC WORKS ARE PERFORMED BY MEANS OF VARIOUS APPARATUS AND INSTRUMENTS
    1) measurements
    2) experiments
    3) both

3. A SUBSTANCE USED TO SHOW THE PRESENCE OF ANOTHER BY REACTION IS CALLED
    1) an impurity
    2) a solvent

3) a reagent

4. SOME CHEMICAL SUBSTANCES HAVE A STRONG AND UNPLEASANT … AND ARE HARMFUL
    1) composition
    2) odour
    3) density

5. THE LABORATORY VESSELS AND GLASSWARE ARE DIVIDED INTO SEVERAL GROUPS
    1) for general use and measuring
    2) for special use
    3) both

6. GLASS VESSELS ARE USUALLY PLACED ON THE
    1) shelves and racks
    2) working tables
    3) tables and shelves

7. A THING THAT WORKS BY HEAT TO GET SOME CHEMICAL SOLUTIONS IS CALLED A
    1) test-tube
    2) vessel
    3) burner

8. THINGS … OF GLASS ARE CALLED GLASSWARE
    1) make
    2) made
    3) making

9. MERCURY IS OFTEN … IN THERMOMETERS
    1) being used
    2) to use
    3) used

10. GOWNS AND CAPS ARE … BY THE STUDENTS IN THE CHEMICAL LAB
    1) to put on
    2) put on

3) puts on

11. IT IS RECOMMENDED TO CLOSE THE … WITH GLASS CAPS
    1) glass bottles
    2) test-tubes
    3) glasses

12. ONE SHOULD BE CAREFUL WHEN WORKING WITH
    1) water
    2) reagents
    3) fluids

13. ONE CAN SAY THAT THE TEMPERATURE HAS ALSO A POSITIVE EFFECT ON THE
    1) pressure
    2) validity
    3) solubility

14. A. CELSIUS PROPOSED A SCALE ON WHICH THE MELTING POINT AND BOILING POINT OF WATER WERE … AS THE LIMITS
    1) made
    2) carrying out
    3) taken

15. IT IS NECESSARY … THE WORKING PLACE CLEAN
    1) to equip
    2) to keep
    3) to contain

ТЕМА 8

АНАТОМИЯ ЧЕЛОВЕКА

1. Прослушайте преподавателя и произнесите следующие слова и словосочетания. Переведите их:

1) **a limb** [lım], limbs, the left limb, the right limb, the limbs of the human body;

2) **an extremity** [ıks´tremıtı], the upper extremity, the lower extremity, a man has four extremities, the arm is an upper extremity, the leg is a lower extremity;

3) **a forehead** [´fɔrıd], forehead, a wide forehead, a narrow forehead, the eyes are under the forehead, the forehead is one of the parts of the face;

4) **a mouth** [mauθ], in the mouth, open your mouth, close your mouth, breathe through the nose but not through the mouth;

5) **a tongue** [tʌŋ], a coated tongue, the tongue is in the mouth, the tongue is the organ for speech, the tongue is very flexible;

6) **a palate** [´pælıt], a soft palate, a hard palate, the hard palate is the roof of the mouth, the hard palate is in the upper part of the mouth;

7) **a heart** [hɑ:t], the heart beats, the heart makes beats, the heart is in the chest, the heart is an internal organ;

8) **to breathe** [bri:ð], to breathe deeply, he breathes deeply, we breathe with the lungs, don't breathe;

9) **stomach** [´stʌmək], in the stomach, the stomach is an internal organ, the stomach is connected with the mouth by the gullet;

10) **an intestine** [ın´testın], a small intestine, a large intestine, the intestines are in the abdominal cavity;

11) **an injury** [´ındʒərı], a bad injury, to have injuries, to get an injury, to protect from injuries, the injury of the forearm, the hip injury;

12) **a shoulder** [´ʃouldə], the left shoulder, the right shoulder, the shoulder connects the upper extremity with the chest, we have two shoulders;

13) **a thumb** [θʌm], the left thumb, the right thumb, the thumb is one of the fingers on the hand;

14) **a knee** [ni:], the left knee, the right knee, the knee is a part of the leg;

15) **a calf** [kɑ:f], the calf of the left leg, the calf of the right leg.

2. Прочтите и переведите текст.

TEXT 1. WE STUDY ANATOMY

In the practical Anatomy class we study the human body.

The principal parts of the human body are the head, the trunk and the limbs (extremities). We speak of the upper extremities (arms) and of the lower extremities (legs).

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

The ear includes three principal parts: the external ear, the middle ear, and the internal ear.

The mouth has two lips: an upper lip and a lower lip. In the mouth there are gums with teeth, a tongue and a palate.

The head is connected with the trunk by the neck. The upper part of the trunk is the chest and the lower part is the abdomen. The principal organs in the chest are the lungs, the heart, and the gullet (esophagus). We breathe with the lungs. The heart contracts and makes about 60-80 beats per minute.

The principal organs in the abdominal cavity are the stomach, the liver, the spleen, the intestines, the kidneys, the gall-bladder and the bladder.

The framework of bones called the skeleton supports the soft parts and protects the organs from injury. The bones are covered with muscles.

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

The lower extremity (the leg) consists of the hip (the thigh), the knee, the calf, the ankle and the foot. The body is covered with the skin.

3. Ответьте на следующие вопросы.

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

4. Вставьте пропущенные слова там, где необходимо.

1. We breathe with the … . 2. The ear … three … parts: the … ear, the … ear and the … ear. 3. The tongue is in the … . 4. The legs are … extremities and the arms are … extremities. 5. The skull contains the … . 6. The forehead is one of the parts of the … . 7. The … connects the head with the … . 8. The spleen is in the … . 9. The framework of bones is called the … . 10. The shoulder connects the … with the … . 11. The skin covers the … .

5. Вставьте слова: *“speech”, “smell”, “thinking”, “sight”, “hearing”.*

1. The brain is the organ of … . 2. The eye is the organ of … . 3. The nose is the organ of … .4. The tongue is the organ of …. 5. The ear is the organ of ….

6. Ответьте на следующие вопросы.

1. How many teeth (eyes, ears, tongues, fingers, knees, thumbs, arms, shoulders, limbs, wrists, feet, cheeks, lips, chins, gums, lungs, kidneys, extremities) has a man?

2. What is the organ of thinking (sight, hearing, smell, speech, taste)?

3. What do we do with our eyes (ears, nose, tongue, fingers)?

4. Is the liver (the heart, the gullet, the stomach, the bladder, the lung, the spleen, the gall-bladder, the kidney, the intestine) an internal or an external organ?

5. Is the thigh (the calf, the ankle, the foot, the knee, the wrist, the elbow, the hand, the shoulder, the forearm) a part of the upper or the lower extremity?

7. Обсудите структуру тела человека в форме вопросно-ответной беседы (диалога) на основе представленного ниже текста.

TEXT 2. THE HUMAN BODY

How many chief parts of the body do you know? – There are three chief parts: the head, the trunk, and the limbs or extremities.

What is the skeleton composed of? – It consists of many bones.

What do you call the bones of the head? – They are the skull.

What does the skull contain? – It contains the brain.

What do you call the external covering of the body? – It is the skin.

What colour is your hair? – I have fair hair, but my sister's hair is dark.

What do you call the front part of the head? – it is the face.

Tell me the parts of the face, please – they are the forehead, or brow, the two cheeks, and the chin.

What are the organs of special sense? – they are eyes, the ears, and the nose.

How many eyes have you got – I have two eyes.

What can you do with your eyes? – With my eyes I can see.

What do you do with your ears? – I hear with my ears.

What can we do with our nose? – With our nose we smell.

Where are the organs of taste? – They are in the mouth. They are on the tongue and not on the palate.

What can you tell me about the mouth? – The mouth is formed by the two jaws. It has two lips. With our lips we speak, whistle, and kiss.

In the month there are the teeth, the tongue and the palate.

What do you do with your mouth? – With my mouth I eat, drink, and speak.

What do you call people who cannot see? – They are blind.

And a man who cannot hear? – He is deaf [def].

And persons who cannot speak? – They are dumb [dʌm].

ТЕСТОВЫЕ ЗАДАНИЯ

Выберите один правильный ответ.

1. ANATOMY STUDIES
   1) human physiology
   2) human health
   3) the structure of the human body

2. HE MAIN PARTS OF THE BODY ARE THE
   1) head, the trunk and the brain
   2) limbs, the heart and the trunk
   3) head, the trunk and the limbs

3. THE PRINCIPAL PARTS OF THE HEAD ARE THE
   1) face and the brain
   2) skull and the face
   3) forehead and the brain

4. THE EAR CONSISTS OF … PARTS
   1) four

2) three
3) two

5. THE MOUTH HAS
1) internal and external lips
2) upper and lower tongues
3) upper and lower lips

6. THE NECK IS THE CONNECTIVE PART OF
1) the arm and the trunk
2) the head and the trunk
3) the leg and the trunk

7. THE CHEST IS LOCATED IN
1) the upper part of the trunk
2) in the abdomen
3) in the gullet

8. THE LUNG ARE LOCATED IN
1) in the stomach
2) in the chest
3) in the abdomen

9. THE MAIN FUNCTION OF THE LUNGS IS
1) digestion
2) reproduction
3) respiration

10. THE NUMBER OF HEART BEATS ARE
1) more then forty
2) less then thirty
3) more then two hundred

11. THE ABDOMINAL CAVITY CONTAINS
1) the stomach and the liver
2) the lungs and the kidneys
3) the brain and the spleen

12. THE STOMACH IS THE ORGAN OF
    1) digestion
    2) thinking
    3) respiration

13. THE MUSCLES COVER THE
    1) soft parts of the body
    2) internal organs
    3) bones

14. THE ELBOW IS THE PART OF THE
    1) trunk
    2) upper limb
    3) lower extremity

15. THE CALF IS THE PART OF THE
    1) leg
    2) arm
    3) foot

ТЕМА 9

АПТЕКА

1. Ознакомьтесь со следующими словами. Запомните их значения:

Pharmacy	– аптека
chemist’s department	– ручной отдел
sick	– больной
medication	– лекарственное средство
locate	– располагаться
important	– важный
poisonous	– ядовитый
ointment	– мазь
ice-bag	– пузырь для льда
self-treatment	– самолечение
counterfeit	– поддельный, фальшивый
shelf (shelves)	– полка (полки)
over-the-counter drug	– лекарственное средство, отпускаемое без рецепта
effective	– эффективный
adhesive plaster	– лейкопластырь
dangerous	– опасный
nasal	– носовой
prescription	– рецепт
headache	– головная боль
signature	– сигнатура
drug cabinet	– шкафчик для лекарств
keep	– хранить, держать
powder	– порошок

sleeping–draught	– снотворное
direction	– указание, предписание
patent medicine	– патентованное лекарство

2. Из списка слов выделите те слова, которые могут иметь непосредственное отношение к теме «Аптека».

3. Прочтите следующий текст, затем прослушайте учителя и заполните пропуски необходимыми по смыслу словами.

Having got a doctor's prescription you go to the nearest … to buy … you need. There are only a few … in our city at present.

The drug store has …, two departments … drugs and proper working rooms. At the pharmacy all drugs … in drug cabinets, on the open shelves and in the fridge. At the drug store you can get medicines …: ampules of glucose and camphor for injections, …, tablets and … …, cough mixtures, cardiac drugs, …, nasal drops, vitamins, …, bandages, …, sleeping draughts.

4. Прочтите и переведите текст.

THE DRUG STORE

In case of health problems one should consult a medical practitioner but some people prefer going directly to the pharmacy thinking that they can cure themselves without a doctor's consultation.

Of course, a pharmacist can give such a person advice, though seeing a doctor is the best way out as there are hundreds of causes of headache and the person doesn't know what medicine is the best. Having received a doctor's prescription you go to the nearest pharmacy to buy all the drugs you need.

The modern drug store is not as it used to be before. Nowadays like European and American pharmacies, Russian ones carry not only a wide range of medications and other health care products, but also a great variety of products unrelated to health.

There are only a few classic type pharmacies in our city at present and one of them is located in an old-fashioned building in Lenin Avenue.

This building with a well decorated interior has a hall for visitors, two departments for selling drugs and proper working rooms.

At the prescription department medicines are sold or made up according to prescriptions. Over-the-counter (OTC) drugs or non-prescription health care products and medicinal plants can be bought at the chemist's department. At the pharmacy all drugs are kept in the drug cabinets, on the open shelves and in the fridge.

Poisonous drugs are kept in the drug cabinet with the letter A. Strong effective drugs are kept in the drug cabinet having the letter B. The single dose and the total dosage are indicated on the label or the signature. The directions for the administration of a drug are very important for sick people as well as for those who take care of them.

At the drug store you can get patent medicines of all kinds: ampules of glucose and camphor for injections, different pills, tablets and powders, cough mixtures, cardiac drugs, pain killers, nasal drops, vitamins, cod liver oil, ointments, sleeping draughts, laxatives, sedatives, bandages, adhesive plasters, mustard plasters, bottles of iodine.

You can also buy hot-water bottles, medicine droppers, thermometers, ice-bags, sponges, tooth-brushes and tooth-pastes, soap and many other useful things.

A broad mass advertising company on TV and radio influences people sometimes in a negative way encouraging them to engage in self-treatment.

Unfortunately there is a great risk of buying some counterfeit drugs which are ineffective and sometimes even dangerous to health. It's better to buy the drugs one needs at a state pharmacy and even there nobody can be quite sure of being offered real medicines of high quality.

5. Ответьте на следующие вопросы по тексту.

1. What should one do in case of health problems?
2. What do some people prefer doing?
3. Why is seeing a doctor the best way out?
4. What do you go to the pharmacy for?
5. What do modern pharmacies carry?
6. What rooms does a classic type pharmacy consist of?

7. What is a prescription department?
8. What can be bought at the chemist’s department?
9. Where are all drugs kept at the pharmacy?
10. Where are poisonous drugs kept?
11. Where are strong effective drugs kept?
12. What is indicated on the label?
13. What kinds of medicines can one buy at the drug store?
14. What are things for medical care?
15. How does an advertising company influence people?
16. What is the risk of self-treatment?
17. What pharmacy is it better to buy drugs at?

6. С помощью словаря установите значения следующих слов и запомните их:

air-ring	basin
medicine dropper	enema
ice-bag	dropping bottle
mustard plasters	scissors
stretcher	syringe
thermometer	compress
soap	feeding-cup
sponge	adhesive plaster
cups	wheel chair
bed-pan	hot-water bottle

7. Поддержите разговор, отвечая на вопросы и используя слова в скобках.

Модель: – *Do you go to the doctor when you are ill? (usually).*

– *Yes, I do. I usually go to the doctor, because he writes out a prescription.*

– *Does your friend follow a doctor's prescriptions? (never).*

– *No, he doesn't. He never follows a doctor's prescriptions because he hates taking medicines.*

1. Do you usually consult the doctor before you go to the drug store? (never).

2. Does your mother take any pills, if she has a bad headache? (always).

3. Do you buy health care products at the pharmacy? (sometimes).

4. Do you take vitamins in spring? (generally).

5. Does a pharmacist keep all drugs in the fridge? (often).

6. Do they keep poisonous drugs on the open shelves? (never).

7. Do you ever buy OTC-drugs at the drug store? (seldom).

8. Does your mother usually buy tooth-brushes and tooth-pastes at the drug store? (sometimes).

8. Спросите своего друга или одногруппника, как у него идут дела, используя вопросительные слова*: what, when, why, how often, where.*

Модель: – *I usually take aspirin when I catch a cold. And* ***what about*** *you? What do you take?*

– *I generally take panadol.*

– *And* ***what about*** *your friend?* ***What does*** *he take?*

– *As far as I know he takes aspirin too.*

1. My mother buys medicinal plants at the chemist's department.

2. He tries to keep all drugs in a dark place.

3. My friend often goes to the drug store because he is subject to colds.

4. I take vitamins twice a day.

5. My mother takes sleeping-draughts when she can't sleep.

6. He applies mustard plasters when he has a bad cough.

7. I read the directions for the administration of the drug because it is very important.

8. My brother uses a thermometer to know his temperature.

9. Скажите, что пациент, болеющий гриппом, должен делать *(must do, is to do, should do, has to do*), используя следующие слова и словосочетания:

to go to the drug store, to take a cough mixture, to keep a thermometer in his (her) armpit, to apply mustard plasters, to stay in bed, to order the prescription, to see a doctor, to use nasal drops, to put a cold (hot) compress on, to have injections made.

10. Придумайте вопрос покупателя, который он задал бы аптекарю.

Patient:	Good morning. Do you have anything for a …
Pharmacist:	How long have you had it?
Patient:	…… .
Pharmacist:	Well, I recommend this antiseptic mouth-wash. It will relieve the pain.
Patient:	…… .
Pharmacist:	You have to gargle your throat with this solution five or six times a day.
Patient:	…… .
Pharmacist:	No thanks at all. But if it doesn't help, you should consult your doctor.

11. Продолжите разговор в аптеке, используя глаголы в нужном времени.

Pharmacist:	Hello. Can I help you?
Patient:	Yes. I went (go) to a restaurant last night and … (eat) seafood and now I … (have) an upset stomach.
Pharmacist:	How long … you … (have) it?
Patient:	Well, it … (start) in the middle of the night.
Pharmacist:	… you … (see) your doctor yet?
Patient:	No, I haven't. You see, I … (not live) here. I … (visit) some friends for a few days.
Pharmacist:	Well, I … (give) you this medicine, but you should go to a doctor if it … (not get) better.

12. Убедите покупателя не заниматься самолечением. Используйте выражения.

1. I am afraid, you are wrong.
2. I am not sure, you are right about … .
3. You are mistaken.

Модель: – *My stomach hurts me very much. Will you give me some sulfa drugs?*

– *I am afraid, you are wrong. You'd better take Maalox or consult your doctor.*

1. My mother suffers from a high blood pressure (some antibiotics).
2. I have a bad cough and fever (mustard plasters).
3. My grandma can't sleep (sleeping-draughts).
4. My friend has injured his leg (hot-water bottle).
5. My friend suffers from drinking much at the party (pain killer).
6. I have a terrible toothache (sedatives).
7. My sister has cut her finger (alcohol).

13. Как фармацевт посоветуйте покупателю способ применения следующих медицинских препаратов, указанных ниже.

Coldrex, Aspirin, Fastum-gel, Doctor-Mom, ampules of glucose, Bittner, Multitabs, Fervex, Cod liver oil.

Модель:

I think /don't think/ you should	Я думаю (не думаю), что вам следует …
You'd better (do)	Вы бы лучше …
I advise you (to do)	Я советую Вам …
Thank you so/very/ much for your advice	Большое спасибо за совет …
You are welcome	Пожалуйста
It's nothing	Ничего

Используйте:

1) to take a powder for … ;
2) to take a tablet (a half tablet) three times a day;
3) to take the pill after (during, before) meal;
4) to take some milk after the pill;
5) to put the ointment on … ;
6) to keep the suppositories in a cool place;
7) to shake the bottle with the mixture before use;
8) to keep the drops in a dark place;
9) to wash the medicine dropper before (after) use;
10) to drop five drops;
11) to take a tablespoonful on an empty stomach;
12) to read the doctor's instruction before giving the solution;
13) to keep the ampules in a dark place;
14) to gargle the throat three times a day.

14. Скажите по-английски.

1. Возьмите ампулы с витамином В.
2. Примите две столовых ложки этой микстуры.
3. Взболтайте микстуру пред употреблением.
4. Примите эти капли с молоком.
5. Дайте рецепт, пожалуйста.
6. Выпишите лекарство от головной боли.
7. Храните свечи и растворы в темном и прохладном месте.
8. Не принимайте эти порошки на голодный желудок.

15. Переведите предложения на английский язык.

1. Врач сказал мне принимать эти порошки после еды.
2. В рецептурном отделе лекарства готовятся согласно рецепту.
3. В аптеке есть два отдела, не так ли?
4. В каком отделе можно купить лекарства без рецепта?
5. Только в аптеке можно купить патентованные лекарства.

6. Фальшивые лекарства могут причинить серьезный вред здоровью.
7. Рекламные компании на ТВ и радио побуждают людей заниматься самолечением.
8. В аптеке продают не только лекарства, но и предметы, необходимые для медицинского ухода и личной гигиены.
9. Очень важно соблюдать дозировку, указанную на этикетке.
10. Существуют различные лекарственные формы: таблетки, порошки, мази, микстуры, капли, растворы в ампулах для инъекций, пилюли.

16. Вы на практике в аптеке, фармацевт заболел. Составьте список препаратов, стоящих на полках, и напишите свою собственную инструкцию по применению препарата.

17. Прослушайте диалоги и воспроизведите их.

Customer: Can I have some sleeping-draught, please?
Chemist: I can let you have it only if you hand in a prescription.
Customer: Here is one.
Chemist: I can have this made up for you in an hour's time.
Customer: All right. And what about these powders?
Chemist: Your powders will be ready in an hour too.
*
Doctor: You followed my prescriptions of course.
Patient: Indeed I did not, doctor, for I should have broken my neck.
Doctor: Broken your neck?
Patient: Yes, for I threw your prescription out of a third floor window.
*
A: What can I do for you?
B: I have a bad headache. Have you anything for headache?
A: Certainly. Here are tablets. They will give you an instant relief.
B: Thank you very much.
A: That's all right.
*
A: Have you anything for cough?
B: Here is a very effective cough mixture.
A: Will you tell me how I must take it?

B: Certainly. You must take a tablespoonful of this mixture beforemeal. You should keep it in a cool place and don't forget to shake it before using.

18. Составьте свои собственные диалоги.

19. Прочтите и переведите тексты.

BE CAREFUL WITH MEDICINE AT HOME

1. Keep the medicine in a locked box, on a separate shelf beyond the reach of children.

2. Read the label before you open the bottle or box. Read the instructions and dose carefully.

3. Shake the bottle with liquids or the last dose can be too strong.

4. Keep the medicine in a cold place.

THE PRESCRIPTION ON THE DOOR

A man fell ill and the doctor was sent for. The doctor came. He examined the patient and then he asked for a pen, ink and paper as he wanted to write a prescription. But there were no such things in the house, so the patient's wife went out to take them from somebody. She was absent for a long time and the doctor took a piece of coal, wrote the prescription on the door with it and went away. Nobody in the house could read or write Latin. So they took the door off its hinges, carried it to the chemist's shop and got the medicine.

20. • Скажите, каким пациентам Вы бы прописали лекарство, представленное в тексте, и обоснуйте свое мнение.
• Скажите, каким пациентам Вы бы не прописали лекарство, представленное в тексте, и объясните почему.
• Скажите, о чем бы Вы предупредили (предостерегли) пациента, прописывая данные лекарства.

PANADOL TABLETS

Description

Panadol Tablets are designed in an easy to swallow slim shape and have been specially formulated to provide effective relief from pain.

Each Panadol Tablet contains: Paracetamol Ph. Eur. 500 mg.

Indications

Panadol is suitable for headache, migraine, backache, rheumatic and muscular pains, neuralgia, toothache, and period pains. Panadol also relieves discomfort in colds, influenza, sore throats and helps to reduce temperature.

Dosage

ADULTS: 2 tablets up to four times daily.

- Dose should not be repeated more frequently than every four hours.
- No more than four doses should be given in 24 hours. CHILDREN (6-12 years): ½ to 1 tablet up to 4 times daily.
- Dose should not be repeated more frequently than every 4 hours and only 4 doses should be given in 24 hours.
- **Not suitable for children under 6 years of age.**

Cautionary notes

Do not exceed the stated dose. If symptoms persist, consult your doctor. Do not give to children for more than 3 days without consulting a doctor. For professional advice on medicines, consult your pharmacist.

Keep out of the reach of children.

ANDREW'S ANSWER

Description

Andrews Answer is a special formulation to help wherever it hurts after "over-indulgence". A pain reliever to work quickly on your headache, and an antacid to settle your stomach. All in a refreshing effervescent lemon flavoured drink.

Each 8g sachet contains:	
Paracetamol Ph. Eur	1000 mg
Caffeine Ph. Eur	60 mg
Sodium Bicarbonate Ph. Eur	1408 mg
In an effervescent base containing:	
Citric acid Ph. Eur	1185 mg
Dextrose Ph. Eur	4000 mg

Indications

Andrews Answer is for the relief of headache with upset stomach particularly if associated with over-indulgence in food and drink.

Directions

Each sachet contains a complete dose. Dissolve the contents of one sachet in a glass of water, stir and drink when the effervescence subsides.

Dosage

ADULTS: 1 sachet.

Do not take more then 4 sachets in 24 hours. Andrews Answer contains a full 1g dose of paracetamol, so do not take other pain relievers within 4 hours.

Not to be given to children under 18 years of age.

Cautionary notes

Do not exceed the stated dose. If symptoms persist consult your doctor.

Keep out of the reach of children.

COLDREX TABLETS

Description

Coldrex Tablets are particularly effective against the symptoms of cold and flu because they are made to the special Coldrex formula. They contain the full recommended dose of paracetamol to ease aches and pains and to lower your temperature. There's phenylephrine to clear a stuffy nose. We've also added caffeine, a mild stimulant to keep you going through your cold, and vitamin C – an essential vitamin your body often lacks during colds and flu.

Each Coldrex Tablet contains:

Paracetamol Ph. Eur	500 mg
Phenylephrine Hydrochloride Ph. Eur	5 mg
Caffeine Ph. Eur	25 mg
Terpin Hydrate B.P.C	20 mg
Vitamin C (Ascorbic Acid)	30 mg

Indications

Coldrex Tablets are indicated for the relief of the symptoms of cold and flu.

Directions

At the first signs of cold or flu, take Coldrex Tablets with water or a warm drink. To obtain maximum relief take Coldrex for the full course of your cold.

Dosage

ADULTS: Take 2 tablets up to 4 times a day.
CHILDREN: 6–12 years: Take 1 tablet up to 4 times a day.
Not suitable for children under 6 years of age.

Precautions

Not to be given to children under 6 years of age except on medical advice.

Do not exceed the stated dose.

Some medicines do not combine. If you are receiving medicine from your Doctor, ask his advice before taking Coldrex. If symptoms persist consult your Doctor.

Store in a dry place.

Keep out of the reach of children.

ТЕСТОВЫЕ ЗАДАНИЯ

Выберите один правильный ответ.

1. IN CASE OF HEALTH PROBLEMS ONE SHOULD
   1) go to the pharmacy
   2) cure oneself
   3) see a doctor

2. YOU GO TO THE PHARMACY TO
   1) buy all the necessary drugs
   2) buy food stuff
   3) see your friend

3. IN THE DRUG STORE THERE ARE

1) drug cabinets, open shelves and the fridge
2) two departments for selling drugs: a prescription department and a chemist's department
3) a hall for visitors and working rooms

4. AT THE CHEMIST'S DEPARTMENT ONE CAN BUY

1) poisonous drugs
2) OTC drugs and things necessary for medical care
3) strong effective drugs

5. AT THE PRESCRIPTION DEPARTMENT ONE CAN BUY

1) OTC drugs and things necessary for medical care
2) strong effective drugs and order drugs according to prescription
3) tooth brushes and tooth pastes

6. THE DOSE TO BE TAKEN IS INDICATED

1) on the drug cabinet
2) in the cheque
3) on the label

7. ONE MUST KEEP MIXTURES AND SOLUTIONS

1) in a dark and cool place
2) in a warm place
3) in the light

8. A BROAD MASS ADVERTISING COMPANY ON TV AND RADIO INFLUENCES PEOPLE SOMETIMES IN A NEGATIVE WAY BECAUSE THEY

1) get a consultation from highly-qualified physicians
2) buy counterfeit drugs dangerous to health
3) buy real medicines of high quality

9. ANTIBIOTICS ARE TAKEN TO CONTROL

1) inflammation
2) high blood pressure
3) headache

10. PAIN KILLERS ARE PRESCRIBED TO TREAT
    1) cough
    2) diarrhea
    3) toothache

11. OINTMENTS ARE
    1) rubbed into the skin
    2) taken orally
    3) given in injections

12. LAXATIVES ARE USED TO TREAT
    1) injuries
    2) constipation
    3) lung diseases

13. PANADOL TABLETS ARE EFFECTIVE IN
    1) reducing temperature
    2) controlling high blood pressure
    3) arresting hemorrhage

14. IF SYMPTOMS PERSIST
    1) continue self-treatment
    2) discontinue treatment
    3) consult a doctor

15. MEDICINES MUST BE
    1) given to children without a prescription
    2) kept out of the reach of children
    3) given to children in the dose for adults

ТЕМА 10

В ПОЛИКЛИНИКЕ

1. Слушайте и повторяйте за преподавателем следующие слова:

adult, out-patient, to include, regime, clerk, to apply, administration, thoroughly, visual, percussion, physician, measure, breathlessness, procedure, cystoscopy.

2. Ознакомьтесь со следующими словами и тексту:

unit	– структура, единица, подразделение
out-patient	– амбулаторный больной
condition	– состояние
physician	– врач
complain	– жалоба
sputum	– мокрота
edema	– отечность
vomiting	– рвота
dizziness	– головокружение
to apply	– применять; обращаться к кому-либо (to)
to include	– включать
to measure	– измерять
to carry on	– проводить
to determine	– определять
to establish	– устанавливать
to relieve	– облегчать
since	– с тех пор как
adult	– взрослый
strict	– строгий
thorough	– тщательный

visual	– визуальный
evident	– очевидный
powerful	– мощный
according to	– в соответствии с
by means of	– посредством чего-либо
for instance	– например
a district doctor	– участковый врач
bed regime	– постельный режим
consulting room	– приемный кабинет
visual examination	– визуальный осмотр
instrumental study	– инструментальное обследование
to establish a diagnosis	– поставить диагноз
round of visits	– обход больных на дому

3. Найдите в цепи данных слов пары, имеющие сходное значение:

a consulting room, for example, to carry on, to use, to measure, a doctor, to determine, for instance, to apply, to take, a reception room, to perform, to establish, a physician.

4. Определите в каждом ряду слов то слово, которое не связано по смыслу с другими словами ряда:

1) palpation, percussion, auscultation, administration, visual examination;

2) edema, fever, headache, cough, hemorrhage, procedure;

3) fluorography, vomiting, cystoscopy, electrocardiogram, X-ray examination;

4) consulting room, operating room, equipment, X-ray room, physiotherapy room;

5) registering clerk, cardiologist, neurologist, surgeon, therapeutist.

5. Прочтите и переведите текст.

AT THE POLYCLINIC

In Russia the basic medical unit is the polyclinic. There are polyclinics for adult population and for children. About 3 thousand patients are admitted daily.

Doctors of different specialities work at the polyclinic, for instance, surgeons, therapeutists, neurologists, cardiologists, doctors of eye diseases, ear, throat and nose diseases and so on.

There are different consulting rooms, which have the best and modern equipment. In the X-ray room there is a powerful apparatus by means of which one can see pathological changes of inner organs. With the help of fluorography it is possible to provide a mass prophylactic examination of the population. In the room of physiotherapy the patients get treatment prescribed by the doctor.

Out-patients are seen at the polyclinic by district doctors. The working day of a district doctor begins at 9 a.m. It includes consultation at the polyclinic and a round of visits to the district. The district doctor visits those patients who are seriously ill and have to follow a strict bed regime.

When patients come to the polyclinic they have to apply to the registry first. The registering clerk asks your name, address, age and occupation and finds your patient's card. The result of the examination, the diagnosis of the disease, the administration of the doctor, the course of the disease and the patient's condition after the treatment are written down in the card.

Sometimes a patient has to wait for the turn to enter the doctor's consulting room.

The district doctor must examine any patient thoroughly. A number of different procedures are used to establish a diagnosis: history-taking, physical examination, laboratory studies, instrumental studies and others. Physical examination includes visual examination, palpation, percussion, and auscultation. During the medical examination a physician usually asks his patient what he complains of and according to the complaints carries on the examination. A physician listens to the patient's heart and lungs and measures his blood pressure, and if necessary asks the patient to take his temperature. Laboratory studies consist of urinalysis, blood, sputum and other analyses. There is a great number of instrumental studies, for

example, taking electrocardiogram or cystoscopy. All these tests help a physician make a correct diagnosis and administer a proper treatment.

The symptoms are very important for determining a disease, e.g., breathlessness, edema, cough, vomiting, fever, hemorrhage, headache and others. The symptoms which are determined by study are called objective, since they are evident only to the patient.

In our country any physician does all necessary in order to cure a patient or, at least, to relieve his condition.

6. В компьютере произошел сбой, и он выдал отдельные слова вместо предложений. Помогите их восстановить.

1. The, polyclinic, in, basic, Russia, medical, the, unit, is.

2. Day, doctor, at, working, district, the, 9 a.m., begins, of, a.

3. Visits, the, patients, are, district, ill, those, doctor, who, seriously.

4. Any, district, must, patient, doctor, examine, the, thoroughly.

5. A, number, is, great, studies, there, of, instrumental.

6. To, complaints, the physician, on, the, carries, according, a, examination.

7. Evident, the, are, subjective, only, symptoms, patient, to.

8. By, treatment, patients, room, of, the, physiotherapy, the, get, doctor, the, prescribed, in.

7. Какие слова по смыслу могут быть употреблены в следующих предложениях.

1. There are polyclinics for … and for children.

2. It includes consultation at the polyclinic and … to the district.

3. The registering clerk asks … and finds your patient's card.

4. Sometimes a patient has to wait … to enter the doctor's consulting room.

5. There is a great number of instrumental studies, for example, … .

6. The symptoms which are determined by study are called … .

7. With the help of fluorography it is possible to provide a … .

8. In our country any physician does all necessary in order … .

8. Ответьте на вопросы к тексту.

1. What is the basic medical unit in Russia?

2. Who works at the polyclinic?

3. What helps to provide a mass prophylactic examination of the population?

4. What does the working day of a district doctor include?

5. What kind of information is written down in a patient's card?

6. What does physical examination include?

7. What do laboratory studies consist of?

8. How are the symptoms determined by study called?

9. Which symptoms are evident only to the patient?

9. Определите (на основании данного текста), верна ли следующая информация, если информация неверна, дайте правильные ответы, используя выражения согласия или несогласия.

Agreement:	**Disagreement:**
I agree with you	I disagree with you
This is right	This is wrong
Quite so	Of course not

1. In Russia the basic medical unit is the hospital.

2. Out-patients are seen at the polyclinic by district doctors.

3. A physician carries on the examination according to the findings of the analyses.

4. To make a correct diagnosis the district doctor must examine any patient thoroughly.

5. Laboratory studies consist of endoscopy and cystoscopy.

6. Symptoms are very important for determining a disease.

7. By means of an X-ray apparatus one can see pathological changes of inner organs.

8. Such symptoms as headache or dizziness are objective.

9. The patient's card contains all possible information about the patient.

10. In the fluorography room patients get a course of physiotherapy prescribed by the doctor.

11. Only therapeutists work at the polyclinic.

12. The final aim of any physician is to cure a patient or to relieve his condition.

10. Проинсценируйте следующие микродиалоги, заменив выделенные слова подходящими по смыслу словами, данными в скобках.

– What is your *name*? (age, address, occupation, place of employment)

– What do you *complain of*? (to suffer from)

– In what case is an *electrocardiogram* made? (sputum analysis, urinalysis, fluorography)

11. Какие вопросы были поставлены к следующим высказываниям.

1. – How many … ?

– About three thousand patients are admitted daily.

2. – Where … ?

– In the room of physiotherapy the patients get the prescribed treatment.

3. – When …?

– The working day of the district doctor begins at 9 a.m.

4. – What patients…?

– The district doctor visits those patients who are seriously ill.

5. – What…?

– The patient's condition after the treatment is written down in the patient's card.

6. – Who…?

– A physician usually asks his patients about the complaints.

7. – What…?

– All these tests help a physician to make a correct diagnosis.

12. Расскажите об обязанностях участкового врача, используя модальный глагол “must” или его эквивалент “to have to” и следующие выражения:

- проводить обследование согласно жалобам;
- обследовать пациентов тщательно;
- ставить правильный диагноз;
- назначить соответствующее лечение;
- вылечить пациента;
- облегчить состояние больного.

13. В беседе со своим другом узнайте, как его обследовал участковый врач.

Модель: *– Did the physician take your temperature?*

– Yes, he did. The physician took my temperature.

14. Врач ведет прием больного, а медсестра, записывая результаты обследования, уточняет информацию с помощью вопросов.

Модель: *1. – The patient's temperature is …*

– What is the patient's temperature?

– The patient's temperature is 38,5 °C.

2. – Palpation reveals …

– What does palpation reveal?

– Palpation reveals abdominal pains.

Используйте следующие слова:

pulse, blood pressure, skin colour, auscultation, percussion, faint, high, pale, moist rales, bad inflammation, to complain of, vomiting.

15. Составьте рассказы согласно следующим ситуациям.

1. Опишите, как участковый врач проводит свой рабочий день.
2. Опишите работу поликлиники.

3. Один из ваших друзей поступает в университет и должен пройти медицинский осмотр. Вы его уже прошли. Расскажите, что ему нужно делать.

16. Прочтите и переведите диалог.

CHARLES CATCHES COLD

Mary: Hello, Charles! What's the matter with you? You don't look very well.

Charles: Oh, I feel quite ill. I have a cold in the head and a sore throat.

Mary: Then you'd better go to bed and take your temperature. I'll get you a hot-water bottle. And don't go near the children, or they'll catch it.

Charles: Don't you think you'd better call in a doctor?

Mary: For a cold in the head? He'll think we're mad.

Charles: Your are not very sympathetic, are you?

Mary: All right. I'll ring up the doctor. Now go to bed. (Charles goes away looking very miserable. Mary goes to the telephone and dials the doctor's number).

Voice: This is the registering clerk.

Mary: Can I make an appointment with Dr. Brown?

Voice: He is out on his rounds just now. Can I take a message?

Mary: Yes, please. Would you ask him to come round to Mr. Charles Smith's as soon as he can?

Voice: Very good, m'm. What address, please?

Mary: The Laurels, Pingshead Road.

Voice: Right, m'm. I'll give him the message. (Mary puts back the receiver and goes upstairs).

17. Прочтите диалог и текст, переведите.

Son: Father, shall I be an ear specialist or a tooth specialist?

Father: Choose the teeth, my boy, everyone has thirty-two of them but only two ears.

A young man was sitting in the waiting-room of a doctor. There were other patients, sitting on the chairs around. Some had a cough, some has a cold and some had a headache. They all looked gloomy, except for the young man who was reading an exciting story in a magazine. Just then the doctor came out to say he was ready to examine the next patient. The young man rose and went into the doctor's consulting room. Before the young man could say a word the doctor said: “Strip to the waist, lie down on the couch, I'll listen to your heart”. “But …”, the young man tried to speak. “Let me see your throat”, ordered the doctor. The doctor examined the patient thoroughly and then said, “Well, young man, you are not ill at all”, “I know, I am not”, said the young man. “I've just come to get some prescription for my old uncle”.

ТЕСТОВЫЕ ЗАДАНИЯ

Выберите один правильный вариант.

1. WITH THE HELP OF FLUOROGRAPHY IT IS POSSIBLE TO PROVIDE A
    1) thorough investigation of a disease
    2) possible cause of a disease
    3) mass prophylactic examination of the population

2. WHEN PATIENTS COME TO THE POLYCLINIC THEY HAVE TO APPLY TO THE … FIRST
    1) dean’s office
    2) registry
    3) head doctor

3. DURING THE MEDICAL EXAMINATION A PHYSICIAN USUALLY ASKS HIS PATIENT WHAT
    1) the weather is like
    2) troubles he has
    3) he complains of

4. THE SYMPTOMS WHICH ARE DETERMINED BY STUDY ARE CALLED … ONES
    1) subjective

2) essential
3) objective

5. IN RUSSIA THE BASIC MEDICAL UNIT IS THE
1) polyclinic
2) dispensary
3) drug store

6. DURING THE MEDICAL EXAMINATION A PHYSICIAN LISTENS TO
1) the nurse
2) the patient's lungs and heart
3) classical music

7. LABORATORY STUDIES CONSIST OF
1) endoscopy, urinalysis, blood, sputum and other analyses
2) cystoscopy, blood and sputum analyses
3) urinalysis, blood, sputum and other analyses

8. THE PATIENTS WHO ARE SERIOUSLY ILL HAVE TO FOLLOW
1) a definite policy
2) some restrictions
3) a strict bed regime

9. THE RESULTS OF THE EXAMINATION, THE DIAGNOSIS OF THE DISEASE, THE ADMINISTRATION OF THE DOCTOR, THE COURSE OF THE DISEASE AND THE PATIENT'S CONDITION AFTER THE TREATMENT ARE WRITTEN DOWN IN
1) a postal card
2) the patient's card
3) a birthday card

10. THE WORKING DAY OF A DISTRICT DOCTOR INCLUDES CONSULTATION AT THE POLYCLINIC AND A ROUND OF
1) talks with the head doctor
2) visits to the friends
3) visits to the district

11. IN THE ROOM OF PHYSIOTHERAPY THE PATIENTS GET
1) some advice from the district doctor

2) treatment prescribed by the nurse
3) treatment prescribed by the physician

12. PHYSICAL EXAMINATION INCLUDES
1) visual examination, palpation, percussion, and administration
2) mass prophylactic examination, palpation, percussion, and auscultation
3) visual examination, palpation, percussion, and auscultation

13. THE SYMPTOMS ARE VERY IMPORTANT FOR … A DISEASE
1) curing
2) determining
3) preventing

14. PALPATION REVEALS
1) abdominal pains
2) blood pressure
3) pulse

15. ALL THE TESTS HELP A PHYSICIAN MAKE A
1) bargain
2) fortune
3) correct diagnosis

ТЕМА 11

ЛЕКАРСТВЕННЫЕ РАСТЕНИЯ

Grammar: Perfect Tenses in Active Voice

1. Ознакомьтесь со следующими словами, запомните их значения.

а) слова, называющие части растений:

root [ru:t] корень
rhizome [´raızoum] корневище
stem [stem] стебель, ствол
seed [si:d] семя
inflorescence [ınflɔ'resəns] соцветие
bark [bɑ:k] кора
fruit [fru:t] плод
top [tɔp] верхушка, верхний конец

б) слова, обозначающие вкус или запах растений, плодов и т.д.:

distinct [dıs'tiŋkt] отчетливый, особый
spicy ['spaısı] пряный, острый
bitter ['bıtə] горький
agreeable [ə'ɡrıəbl] приятный
peculiar [pı'kju:lıə] специфический, своеобразный
sweet [swi:t] сладкий, душистый
mucilaginous [mju:sı'lədʒınəs] слизистый, клейкий
astringent [ə'strındʒənt] вяжущий
pungent ['pʌndʒənt] острый, едкий, пикантный
acrid ['əekrıd] едкий, раздражающий
nauseous ['nɔ:sjəs] тошнотворный

в) слова, обозначающие форму и цвет растений, плодов и т.д.:

shape [ʃeıp] форма, вид
round [raund] круглый

oblong [´ɔblɔŋ]	продолговатый, удлиненный
elliptic (al) [ı'lıptık(əl)]	эллиптический
broad [brɔ:d]	широкий
pale [peıl]	бледный

г) слова, связанные с процессом созревания и сбора растений, плодов и т.д.:

pollination [pɔlı'ne'ʃn]	опыление
ripen ['raıpən]	зреть, созревать
moisture ['mɔıstʃə]	влажность, влага
harvest ['hɑ:vıst]	уборка, сбор (урожая)
mature [mə'tjuə]	зрелый, спелый

д) общенаучные слова:

source [sɔ:s]	источник
certain [´sə:tn]	определенный
proper [´prɔpə]	надлежащий, подходящий
maintain [men'teın]	поддерживать, сохранять
degree [dı'ɡrr:]	степень, ступень
available [ə'veıləbl]	доступный, имеющийся
sort [sɔ:t]	сортировать, классифицировать
compare [kəm'pɛə]	сравнивать
true [tru:]	правильный, точный, истинный
slight [slaıt]	незначительный, слабый

2. Прочитайте названия некоторых цветковых растений и ответьте на вопрос: Which of these flowers do you like best of all?

Lily of the valley (ландыш), chamomile [´kæməmaıl] (ромашка), garlic (чеснок), rose (роза), tulip (тюльпан), snowdrop (подснежник), opium poppy (мак снотворный).

3. Ответьте на вопросы, используя словарь упражнения 1.

1. What parts of the plant may have odour? 2. What colour is the bark? 3. Do all plants have roots and rhizomes? 4. Does every plant produce fruits? 5. Does every plant produce seeds? 6. Where are flowers usually situated? 7. What taste of fruit do you like more?

4. Заполните пропуски словами, соответствующими данным определениям.

1. The season when fruits or vegetables are gathered is called … . 2. The full-grown plant is called … . 3. The part of a plant which grows under the surface of the earth is called … .4. A great number of small flowers which grow together is called … . 5. The plant which is used in medicine is called … . 6. To separate things of one class from things of another class means … .7. A small objet produced by a flowering plant from which another plant may grow is called … .

5. Ответьте на следующие вопросы.

1. Do you like the food to be very or slightly salty? 2. Do you like bitter apples or sweet ones? 3. Is it possible or not to determine a pungent taste? 4. What season do you like more – autumn when fruits ripen or spring when first flowers appear? 5. Do botanists collect fully matured seeds or unripe ones? 6. Are you acquainted with the technique of gathering herbs or their cultivation? 7. Did you gather plants with roots and rhizomes or the overground part of them? 8. What is more difficult: to maintain a high temperature or a low one during the experiment?

6. Прочитайте внимательно следующие отрывки текста и скажите, какие в них описываются растения *(rose, wild pansy, lily of the valley*).

a) The flowers open between April and October. The plant grows in the field. This plant is found throughout Europe and Siberia. The flowers are tricolor. (Tricolor means consisting of three colours: the yellow, the purple and the black.) The plant is annual, with thick roots and rhizomes of 8-23 cm long.

b) This species has a short flowering season from June to July. The fruit becomes mature very quickly and may be seen on the plant until the following January. The plant has a very pleasant odour. Volatile oils which

give the odour to this plant are widely used in perfumery. There are many species of the plant which grow wild and cultivated throughout the world. The plant was originally cultivated in Iran and then in China; through Turkey it came to Europe. The plant may be of various colours but the most widely distributed is a rose colour.

c) The flowers open from April to June and have a very sweet odour. This plant grows throughout Europe and in Russia. It is found in the forests. During the latest period it has decreased in number and is already enlisted in the Red Book of our country. It is used in medicine in the treatment of cardiac diseases.

Each plant has from six to twelve flowers in an inflorescence. The flowers are small, of white colour, leaves 5-12 cm long, and grow in pairs.

7. Прочтите и переведите следующий текст.

TEXT A. **MEDICINAL PLANTS**

Since time immemorial man has known about the medicinal properties of plants and widely used them for all practical purposes. At present the attention to medicinal plants as natural sources of drugs has greatly increased. Ten thousand plant detectives try to find new plants possessing medicinal properties on five continents and all the seas.

Different parts of the plant may be used for medicinal purposes: roots and rhizomes, fruits and seeds, flowers and inflorescences, stems and leaves. All these parts are collected in a certain period of time.

It is well known that the proper time of harvesting or collecting plants and herbs is during that period when active constituents of the plant are highest in their number and quality. Roots and rhizomes are collected in autumm after the vegetative processes have finished. Bark is collected in the spring before these processes begin. Leaves and flowering tops are collected when photosynthesis is most active which is usually about the time of flowering and before the maturing of the fruit and seed. Flowers are collected in the time of pollination. Fruits may be collected either before or after the ripening period. Seeds may be collected when fully matured.

Proper storage and preservation are important factors in maintaining a high degree of quality of the medicinal plants. Thus, too much moisture increases the weight of the material, decreases the amount of active

constituents. Air and light affect drugs, which are strongly coloured, producing changes in constituents. The oxygen of air increases oxidation of the constituents of drugs.

All parts of the plant differ as to the shape, taste, colour, odour and pharmacological activity. Thus, the usual shapes for fruits and seeds are globular, elliptical, ovoid, conical, etc.

The odour of a drug of plant origin may be either distinct or indistinct, depending upon the amount of volatile constituents the drug possesses. It is described as aromatic, balsamic, spicy, camphorous, etc. When it is difficult to compare the odour with other substances it is described as characteristic.

According to taste substances may be classified into four groups: 1) those possessing a true taste, such as acid, sweet, alkaline, bitter; 2) those possessing no taste and thus are tasteless; 3) those possessing a characteristic odour which gives name to the so-called “taste”. They may be grouped broadly into those which are agreeable or pleasant (aromatic, balsamic, spicy) and disagreeable or unpleasant (alliaceous, camphorous, etc); 4) those giving certain sensation to the tongue. Such substances may be classified as mucilaginous, oily, astringent, pungent, acrid, nauseous.

The taste, colour and odour of drugs are officially standardized with the help of the description of the lightness and strength of the colour. Reserpine is described as “a white or pale to slightly yellowish, odourless, crystalline powder”. Olive oil is described as “a pale yellow liquid which sometimes has a greenish tint”; rhizome and roots of valerian as “light brown or yellow brown, odour strong and peculiar, taste-spicy, sweetish-bitterish”.

Pharmacological activity of certain drugs is established using different tests and methods, such as chemical tests for the determination of presence of inorganic elements, a chemical analysis for the determination of the official activity, chromatographic study separates and analyses constituents and inert materials occurring in drugs, etc.

8. Закончите предложения.

1. Flowers are collected … . 2. Bark is collected in spring before … . 3. Roots and rhizomes are collected in autumm after … . 4. Man has known about the medicinal properties of plants since … . 5. Ten thousand plant detectives try to find new plants which … . 6. Fruits may be collected

either before or after … . 7. Seeds may be collected when … . 8. Odour is described as characteristic when … .

9. Вставьте вместо пропусков необходимые по смыслу слова (*liquid, effect, agreeable, shape, affect, disease, volatile*).

1. The odour of rose is described as … . 2. The usual … for fruits or seeds is globular. 3. The odour of a drug of plant origin depends upon the amount of … constituents. 4. Olive oil is described as a pale yellow … which sometimes has a greenish tint. 5. The psychological … of opium plant was known to the ancient population of many south-eastern countries. 6. Garlic is used in the treatment of many … in a pure state or as a compound or mixture. 7. Due to modern laboratories it can be shown how garlic … microbes.

10. Употребите глагол в скобках в соответствующем времени группы Indefinite или Perfect.

1. In Bulgaria and in the Caucasus there is a great number of people who (to live) to the age of 100 and are still active. 2. Investigations by Russian scientists on the activity of garlic (to make) garlic oil very popular since that time. 3. Experiments on the medicinal properties of plants (to show) that some of their constituents are very active against microbes. 4. Last season our botanical station (to pay) special attention to the proper storage of herbs. 5. Second-year roots usually (to contain) a high proportion of alkaloids. 6. By 1906 a Russian botanist Tswett (to publish) a description of the technique for separating pigments of green leaves.

11. Обсудите текст, ответив на вопросы.

1. What facts prove that the attention to the medicinal properties of plants has greatly increased at present? 2. How can you define fruits and seeds? Roots and rhizomes? 3. What period do we call “proper time of harvesting”? 4. Are different parts of plants and herbs gathered at different period? Give some examples. 5. Why is it necessary to gather medicinal plants at proper time? 6. What factors affect the amount and quality of plant constituents? 7. What are the usual shapes of fruits and seeds? 8. What odour do we call “characteristic”? 9. Into what groups are medicinal herbs divided according to taste? 10. How is pharmacological activity of certain drugs established?

12. Прочитайте заглавие текста В и скажите, о чем в нем пойдет речь. Прочитайте и переведите текст.

TEXT B. **NATURE'S MEDICINES**

1. My own interest in herbs began many years ago when I worked on a ranch and noticed that many of the ranchers and their families had often used various plants in the treatment of certain diseases. This made a deep impression on me and when I moved to the city I began searching for herb books and other related literature in order to learn as much as possible about use and history of medicinal plants. After reading and studying the available material I spent several years collecting rare, old, out-of-print medical herbals[1] and made the acquaintance of many herbalists. I made several large albums containing the information learned from these herbalists and then began sorting the material and comparing it with the information contained in the current published materials and out-of-print medical herbals.

2. Many of our most useful drugs were known in antiquity long before the development of sciences. For example, the word “opium” comes from Greek. It is described as the dried material from unripe seed capsules of the opium poppy, ***papaversomniferum.*** The alkaloids of opium constitute about 25 % weight, and there are over 20 of them. However, only four – morphine, codeine, papaverine, and noscapine (narcotine) – have medicinal uses. Opium relieves pain and promotes sleep and induces a general feeling of peace and well-being. Its psychological effects were known to the ancient Babylonians[2] and it was used in Egypt. In ancient Greek and Rome cultures it was used as a sleeping drug.

In 1803 a German pharmacist, Sertürner isolated the chief alkaloid from opium and called it morphia (after Morpheus, the Greek god of dreams)[3]. Sertürner showed by experiments on dogs that most of the narcotic activity of opium was dependent upon morphine. It was the first alkaloid that was isolated from a plant. Shortly after strychnine, caffeine, atropine, etc. were separated as pure crystalline alkaloids.

3. The next widely used plant that was known to man 5000 years ago is garlic. At present it is used in the treatment of many diseases in a pure state or as a compound or mixture.

Garlic was well known in ancient Egypt and thousands of slaves working on the great Cheops pyramid[4] used garlic in food daily.

In Bulgaria there is a surprising number of people who reach the age of 100 and are still active and working. In that country it is a common practice[5] among the ordinary people to eat garlic regularly.

Dioscorides, a Greek physician of the second century who accompanied the Roman armies[6] as their official physician prescribed garlic for all lung and intestinal diseases[7] occurring among the soldiers. Hippocrates added that it was effective as a laxative and diuretic[8].

During World War II, thousands of tons of garlic were bought by the British government for treating the wounds of soldiers.

Investigations by Russian scientists have made garlic oil so popular in their country that it is named as Russian Penicillin.

Due to modern laboratories it can now be shown exactly how garlic affects microbes.

It is well known that garlic is therapeutically useful for the following purposes: it is a powerful agent in preventing diphtheria, typhus, tuberculosis, pneumonia; it is useful in all respiratory infections, especially in symptoms of a dry hacking cough[9], in colds[10], asthma and bronchitis and in many other cases. It is an excellent nerve tonic.

Notes

[1] out-of-print medical herbals – букинистические книги о лечебных травах

[2] ancient Babylonians – древние жители Вавилонии

[3] Morpheus [´mɔ:fjus], greek god of dreams – морфей, в греческой мифологии бог сновидений

[4] Cheops pyramid [´ki:ɔps'pɪrəmɪd] – пирамида Хеопса

[5] it is a common practice – принято

[6] who accompanied the Roman armies – который сопровождал римские армии

[7] lung and intestinal diseases – легочные и кишечные заболевания

[8] laxative and diuretic – слабительное и мочегонное средство

[9] hacking cough ['hækɪŋ'kɔ:f] – частый, короткий кашель, покашливание

[10] incolds – при простудах

13. Закончите предложения, подобрав подходящую по смыслу фразу или словосочетание, которые наиболее полно отражают содержание текста.

1. The first part of text B deals with

a) the history of medicinal plants;

b) the information contained in the published materials;

c) the author's interest in the botany of medicinal plants.

2. The second part of text B deals with

a) the medicinal effects of some plants

b) the history of opium;

c) the narcotic activity of opium.

3. The third part of text B deals with

a) the cultivation of garlic;

b) the use of garlic with the medicinal purposes;

c) the effect of garlic in the treatment of certain diseases.

14. Определите, какие из данных предложений являются законченными и после них можно поставить точку, закончите незавершенные предложения.

1. Dioscorides, a Greek physician of the second century who accompanied the Roman armies

2. Dioscorides, a Greek physician of the second century accompanied the Roman armies

3. Dioscorides, a Greek physician of the second century who accompanied the Roman armies and was their official physician

4. Dioscorides, the official physician of the Roman armies, who accompanied them as their official physician prescribed

5. The British government bought for treating the wounds of soldiers

6. Investigations on garlic made by Russian scientists

15. Ответьте на вопросы и выскажите свою точку зрения по данным проблемам.

1. Is the idea of the text about the use of medicinal plants modern? 2. Is it news to you that many centuries ago garlic was used as a drug? 3. How long have people used opium alkaloids as a drug? 4. Are opium alkaloids always used as a drug at present? 5. Isopiumpoppycultivatedinourcountry?

16. Расскажите о лекарственных растениях по плану.

1. Medicinal plants as a source of drugs.

2. The attention to medicinal plants has increased in the present period.

3. The use of different parts of plants for medicinal purposes.

4. Proper storage and preservation of medicinal plants.

5. Taste, colour and odour and their role in the description of plants.

6. Examples of medicinal plants known to you and their use in medicine.

17. Вставьте вместо пропусков слова активного словаря.

1. All parts of every plant differ as to … … . 2. … and … are the parts of the plant which can grow deeply into the earth. 3. Little children like more … food than salty. 4. During storage too much … can increase the weight of the drug and affect its active constituents. 5. When photosynthesis in plants is most active … begins. 6. A certain degree of moisture is … during long storage of medicinal herbs. 7. Unripe seeds and fruits are used with medicinal … only in certain cases. 8. Many centuries ago nature was considered as a … of drugs. 9. Some people use … as daily food.

18. Переведите следующие предложения на английский язык.

1. Многие лекарственные растения, такие как ландыш, мак снотворный, чеснок, ромашка широко используются в медицинской практике. 2. Благодаря исследованию русских ученых масло чеснока назвали «русским пенициллином». 3. Известно, что только четыре алкалоида мака снотворного используются в лечебных целях. 4. Многие старинные книги и гербарии содержат информацию, которая используется и в настоящее время. 5. Если мы собираем

лекарственные травы, то нужно хорошо знать период сбора каждого растения и его частей. 6. Многие растения имеют приятный запах, но горький, вяжущий вкус. 7. Созревшие плоды имеют специфический цвет, запах и вкус.

19. Поставьте глагол в скобках в соответствующее время группы Indefinite или Perfect. Переведите предложения на русский язык.

1. The alkaloid of opium (to constitute) about 25 % by weight. 2. The attention to natural sources of drugs (to increase) at present. 3. Since ancient times man (to use) different parts of plants for medicinal purposes. 4. By the time of harvesting the amount of active constituents (to become) the highest. 5. Botanists (to collect) the leaves of this plant before the maturing of fruits and seeds. 6. Since the war the instituteof medicinal and aromatic plants in Moscow (to develop) and (to bring into use) some 60 medicinal preparations. 7. The specialists recommend a clinical use of the drug as it already (to pass) necessary laboratory investigations. 8. We studied the methods of storing new medicinal herbs after we (to carry on) their cultivation.

20. Прочитайте и переведите текст со словарем.

HERBS

Under “herbs” are meant the dried overground parts of herbaceous plants consisting of foliiferous and floriferous stems[1]. Herbs are collected mostly during the period of full flowering, in some cases prior to flowering or at the time of fruit-bearing[2]; herbs with gradually blossoming inflorescences[3] are gathered at the time of the utmost flowering; in this case they may carry flowers and fruits in different stages of development. The way of gathering herbs is different for different species; in some only tops are garhered, in others – the entire overground parts, with only the thick lower stems being rejected;[4] in some herbs after threshing only the flowers and leaves are used. Some herbs are gathered with the roots.

Identity of entire herbs is determined by their external appearance.[5] In cut and threshed material whole flowers and fruits are chosen and their shape and characteristics are examined using a lens. Leaves, when required, and powders, as a rule, are examined microscopically.

Description. Determined in dry herbs is[6] the colour, odour at trituration, character of leaf venation and pubescence of various parts of

the plant. The structure of the fruits is examined with the naked eye, or through a magnifying glass; the length of the stem and the size of flowers or flower heads are measured. After rapid steeping of the herb in hot water it is flattened out on a glass plate to determine the leaf arrangement.[7]

Microscopical Examination. Whole and cut material.[8]

In herbs only the leaves are examined microscopically.

Powder. Elements of the stem, flower, seeds and fruits occur in the powder of herbs[9]. features characteristic of stem parts are larger vessels, fibres and epidermis (peel) cell with straight lateral walls. Flower elements most commonly occurring in powder are occasionally scraps of nipple-shaped epidermis of the petals[10]; other flower parts are hard to distinguish. Fruits and seeds of herbs in powder form are characterized by fragments of various layers of the pericarp, the seed coat[11] (epidermis, mechanical tissue[12], pigment cells, hairs or their fragments) and parenchyma cells (slime, aleuron and starch grains[13]). As a rule powders contain an insignificant amount of fruit and seed elements.

Reactions of Quality. These reactions serve as an additional method for identification.

Quantitative Data. The following data are determined in herbs:

1) moisture content (at normal moisture content up to 14 per cent the herb stems easily break, but do not bend, while leaves and flowers easily crumble);

2) total ash and ash insoluble in 10 per cent hydrochloric (when required);

3) size and admissible adminixtures[14];

4) extractive matter (when required);

5) amount of active constituents (when required). The material is stored in dry, well-ventilated premises, in a place protected from light; in drugstores – in boxes provided with lids, 15 some hydroscopical herbs – in tins or jars with tight-fitting lids, 16 when necessary – sealed with paraffin. Prior to filling, jars should be dried at 60-70 ºC. Poisonous herbs are stored with the observation of special rules.

Notes

[1] foliferous and floriferous stems – листоносные и цветоносные стебли

[2] fruit-bearing – плодоносный

[3] gradually blossoming inflorescences – постепенно распускающиеся соцветия

[4] with only the thick lower stems being rejected – причем, отбрасываются только нижние толстые части стебля

[5] appearance – внешний вид

[6] determined in dry herbsis – определяющим в сухих травах является

[7] leaf arrangement – структура листа

[8] whole and cut material – сырье

[9] herbs – лекарственные травы

[10] scraps of nipple-shaped epidermis of the petals – обрывки (кусочки) сосочковидного эпидермального слоя лепестков

[11] coat – оболочка

[12] tissue – ткань

[13] starch grains – крахмальные гранулы

[14] size and admissible admixtures – измельченность и допустимые примеси.

21. Прочитайте и переведите следующий текст на русский язык.

RHIZOME AND ROOTS OF VALERIAN

Gathered in the autumn, cleaned from earth[1], washed and dried. Rhizome together with roots of the cultivated or wild perennial herbaceous plant Valeriana officinalis[2] is widely used in medicine

Description. The rhizome is short, thick, vertical, 2-4 cm long 1-3 cm thick, with a loose pith, often hollow inside. The rhizome gives rise on all sides to numerous, thin, adventitious roots.[3] The overground stems are cut off the very base[4]. The roots are usually 6-15 cm long (sometimes longer) and about 2 mm in diameter. The break of the rhizome and roots is corneous, light brown, on the outside the roots are yellow-brown, smooth and brittle, odour strong and peculiar; taste is spicy, sweetish-bitterish[5]. Cut raw material consists of pieces of rhizome 1-8 mm long and pieces of roots 1-20 mm long.

Microscopical Examination. A transverse section of the rhizome shows a pith surrounded by one and more seldom, two rings of vascular bundles. Groups of stone cells[6] occur in the pith; old rhizome often has no

pith (hollow rhizomes). The parenchyma cells of the cortex contain numerous small starch grains 3-20 mmn[7] in size (more frequently 9). A transverse section shows the roots to have a primary structure.[8] There is a subepidermal laver of hypodermal cells: the cells of the hypoderm are large than those of the epidermis, they contain drops of ethereal oil. Sometimes drops of ethereal oil are found in the cells of the cortical parenchyma. [9] A wide primary cortex is separated by a layer of endoderm from the central cylinder; the cells of the cortical parenchyma are filled with starch grains. The powder is medium-grained, gray-brown sifting through a 0.2 mm mesh-sieve.[10] Under the microscope an abundance of starch grains, fragments of parenchyma with starch, fragments of vessels, occasional stone cells are seen.

Storage. Rhizome and roots of Valerian are kept in drugstores in closed boxes or tins; in warehouses – in bales and bags.

Notes

[1] earth – почва

[2] ValerianaOfficinalis – латинское название по фармакопеи для слова Valerian

[3] the rhizome gives rise on all sides to numerous, thin adventitious roots – корневище дает отростки во все стороны многочисленными тонкими побочными корнями

[4] base – основание

[5] sweetish-bitterish – сладко-горький

[6] cells – клетки

[7] mmn – сокращенное millimicron – миллимикрон

[8] a transverse section shows the roots to have a primary structure. The roots to have – конструкция «винительный падеж с инфинитивом» на русский язык переводится придаточным дополнительным предложением. – Поперечный разрез показывает, что корни имеют первичную структуру.

[9] cortical parenchyma – паренхима коры

[10] the powder is medium-grained, gray-brown, sifting through a 0.2 mm mesh-sieve – порошок средней зернистости, серовато-коричневый, просеивающийся через сито с размером ячейки в 0,2 мм.

22. Прочитайте и переведите текст со словарем.

HERB OF LILY OF THE VALLEY

Overground parts of the wild perennial plant lily of the valley[1] are gathered at the time of flowering.

Description. Two kinds of raw material are distinguished: flowers (inflorescence), leaves and grass. Leaves with long sheaths, separate or conjugate[2], oval oblong-elliptical; acuminate, entire, glabrous on both sides, with arching venation[3], green, petioles often yellowish. The leaf is 10-20 cm long, 3-8 cm wide. Flower scapes are naked, light green, triangular or half rounded in cross-section, terminating in a unilateral loose raceme[4]. Flowers with a simple perianth on bent flower stems, emerging from the axils of shirt, filmy, lanceolate bracts[5]. The corolla-like perianth[6] is bell shaped, stamens on short filaments fixed at the base of the perianth. The superior ovary is globular, trilocular. Odour-faint.

Cut Raw material. Pieces of flower scapes, leaves and whole flowers from 1 to 10 mm in size.

Microscopical Examination. When examining the leaf from the surface it shows on both sides epidermis (skin) cells stretched along the leaf axis. Cells of the “lying” palisade tissue[7] are seen under the upper epidermis stretched horizontally and situated cross wisely in relation to the length of the leaf[8], which is characteristic of the lily of the valley leaves.

Notes

[1] lily of the valley – ландыш

[2] separate or conjugate – отдельные или сопряженные

[3] arching venation – дугообразное жилкование

[4] terminating in aunilateral looseraceme – оканчивающийся односторонним полым соцветием

[5] axils of shirt, filmy, lanceolatebracts – пазухи пленчатых ланцетовидных прицветников

[6] corolla-like perianth – венчикообразное околоцветие

[7] cellsofthe “lying” palisadetissue – клетки «лежачей» палисадной или столбчатой ткани

[8] situated cross wisely in relation to the length of the leaf – расположенные поперечно по отношению к длине листа.

ТЕСТОВЫЕ ЗАДАНИЯ

Выберите один правильный ответ.

1. THE FIRST ISOLATED FROM A PLANT ALKALOID WAS
    1) codeine
    2) papaverine
    3) morphine

2. THE OVERGROUND PART OF THE PLANT IS
    1) stem
    2) root
    3) rhizome

3. DURING WORLD WAR II ... WAS USED FOR TREATING THE WOUNDS OF SOLDIERS
    1) lily of the valley
    2) garlic
    3) poppy

4. IT HAS BEEN FOUND THAT OPIUM
    1) relieves pain
    2) stops bleeding
    3) increases hemoglobin level

5. THE ODOUR OF ROSE IS DESCRIBED AS
    1) unpleasant
    2) agreeable
    3) volatile

6. THE ODOUR IS DESCRIBED AS CHARACTERISTIC WHEN ... TO COMPARE WITH OTHER SUBSTANCES. IT IS
    1) easy
    2) important
    3) difficult

7. LEAVES OF THE PLANT ARE COLLECTED IN SPRING BEFORE THE FIRST ... APPEAR
    1) inflorescences
    2) roots

3) rhizomes

8. THE CHEMIST ... ALREADY THE RESULTS OF THE REACTION OF SULPHURIC ACID WITH POTASSIUM
    1) obtained
    2) obtains
    3) has obtained

9. SCIENTISTS ... MORE THAN 70 CHEMICAL ELEMENTS IN THE HUMAN ORGANISM
    1) will detect
    2) have detected
    3) detects

10. THE CHEMISTS OF THE PAST ... THIR SENSE ORGANS AS THE ANALYTICAL INSTRUMENTS
    1) used
    2) have used
    3) use

11. THE SUBSTANCE ... IN THE NITRIC ACID BY THE END OF THE EXPERIMENT
    1) dissolves
    2) dissolve
    3) will have dissolved

12. FAHRENHEIT ... A NEW SCALE INTO THE EXPERIMENTAL WORK IN THE 13^{TH} CENTURY
    1) had introduced
    2) introduced
    3) has introduced

13. LABORATORY WORKERS ALWAYS ... LARGE AMOUNTS OF DISTILLED WATER BY DISTILLATION
    1) obtain
    2) have obtained
    3) had obtained

14. THIS ELEMENT ... IN NATURE IN FREE STATE
    1) occurred
    2) occurs
    3) has occurred

15. THE STUDENTS ... A SERIES OF EXPERIMENTS TO FIND SOLUTION TO THE PROBLEM
    1) performs
    2) has performed
    3) performed

16. IF THE OVERGROUND PART OF A PLANT HAS LEAVES IT IS CALLED
    1) foliferous
    2) floriferous
    3) fascinating

17. THE WAY OF GATHERING HERBS IS
    1) different
    2) the same
    3) difficult

18. THE IDENTITY OF HERBS IS DETERMINED BY
    1) external look
    2) internal look
    3) cut

19. OVERGROUND PARTS OF LILY OF THE VALLEY ARE GATHERED
    1) after flowering
    2) when flowering
    3) before flowering

20. THEY DISTINGUISH … OF RAW MATERIAL OF LILY OF THE VALLEY
    1) three kinds
    2) one kind
    3) two kinds

ТЕМА 12

ЛЕКАРСТВЕННЫЕ ПРЕПАРАТЫ

1. Обратите внимание на произношение следующих слов:

muscle
allergy
hypersensitivity
congenital
deficiency
precaution
trivial

2. Ознакомьтесь со следующими словами к тексту. Запомните их значения:

spasmodic pain	– спазматическая боль
severe	– очень сильный, тяжёлый
reinforce	– усиливать
cramp	– судорога, спазм
trivial condition	– обычное состояние (нетяжелое)
hypersensitivity	– сверхчувствительность
allergy	– аллергия
congenital	– врожденный
deficiency	– недостаток, дефицит
to sneeze	– чихать
reddening	– покраснение
deterioration	– ухудшение
imminent shock	– угроза шока
prolonged period	– продолжительный период

to avoid – избегать
emergency procedures – неотложные меры
to provide relief – облегчить
urinary retention – задержка мочи
to discontinue – прекратить, остановить
collapse state – состояние коллапса
respiratory infection – инфекция дыхательных путей
to cause – вызывать, причинять
perspiration – потоотделение
precaution – предосторожность
obstruction – закупорка

3. Определите, к какой части речи относятся следующие слова. Переведите их на русский язык:

suited, running, hypersensitivity, congenital, deterioration, respiratory, provides, obstruction, invariably.

4. Образуйте новые слова с помощью суффиксов и приставок. Определите их значение:

- ory : respiration, inflammation;
- able: inject, vary, suit;
- ive: effect, act;

un – : necessary, expected, effective;

dis – : order, continue.

5. Прочтите и переведите следующий текст.

BARALGIN

Properties

Baralgin is ideally suited for the treatment of spasmodic pain because of its rapid and sustained antispasmodic effect on the smooth muscles. Even in very severe forms of spasmodic pain Baralgin almost invariably renders the administration of opium alkaloids unnecessary.

Indications

Acute and chronic severe spasmodic pain, such as cramps in the gastrointestinal region, the billiary tract, kidneys and lower urinary tract. The preparation should not be used in trivial conditions.

Contraindications

Pyrazolone allergy, collapse states, hepatic porphyria, congenital glucose-b-phosphate-dehydrogenase deficiency, urinary retention, gastrointestinal obstruction.

Precautions

Patients suffering from bronchial asthma or chronic respiratory infections and patients with hypersensitivity reactions also to substances other than drugs belong to a risk group. They should consult a doctor before taking such drugs. The same applies to patients who react to alcohol, even to small amounts with sneezing, running eyes and severe facial reddening.

Side effects

If there is an unexpected deterioration in the patient's general condition, if there is fever or if painful mucous membrane changes occur especially in the mouth and throat, it is essential to discontinue Baralgin immediately and consult the doctor. The signs of imminent shock may appear already during the injection. In this case interrupt the injection and immediately adopt standard emergency procedures for shock treatment.

Special notes

Analgetics must not be used in high doses over prolonged periods of time without the doctor's advice. Patients in whom Baralgin has caused a hypersensitivity reaction of any type should avoid future use of all pyrazolone-containing preparations.

6. Составьте предложения из данных слов:

1) used, analgetics, in, doses, not, over, must, high, periods, be, prolonged, of, time;

2) injection, the signs, during, of, appear, shock, may, the, already;

3) hypersensitivity, patient, belong, reactions, with, other, to, than, substances, drugs, group, a, risk, to.

7. Ответьте на вопросы.

1. What are the indications for Baralgin?
2. What effect does Baralgin produce on smooth muscles?
3. Who must avoid the use of Baralgin?
4. Can people use analgetics in high doses over prolonged periods of time without the doctor's advice?
5. What must the doctor do in case of imminent shock?
6. What are the contraindications?
7. Can the people with hypersensitivity reactions take Baralgin?
8. Must the patients with deterioration in their condition discontinue Baralgin or not?
9. Is it dangerous to take Baralgin if there is fever or painful mucous membrane changes?

8. Дополните вопросы.

1. Is Baralgin … ?

   Yes, it is. Because of its rapid and sustained antispasmodic effect on smooth muscles.

2. What … for this drug?

   Acute and chronic severe spasmodic pain in gastrointestinal region.

3. Who … ?

   Patients with hypersensitivity reactions to pyrozolone-containing preparationns.

4. When … ?

   In case of imminent shock, interrupt the injection and adopt emergency procedures for shock treatment.

9. Переведите следующие предложения на английский язык.

1. Больные, страдающие бронхиальной астмой или хроническими инфекциями дыхательных путей, относятся к группе риска. 2. Больные, у которых Баралгин вызвал гиперчувствительность любого типа, должны избегать последующего применения препаратов, содержащих пиразолон. 3. Баралгин идеально подходит

для лечения спазматической боли из-за его быстрого и продолжительного воздействия на гладкую мускулатуру.

10. Определите, в каком залоге употреблены глаголы в следующих предложениях. Переведите предложения на русский язык.

1. Baralgin is ideally suited for the treatment of spasmodic pain. 2. The signs of imminent shock may appear already during the injection. 3. Analgetics must not be used in high doses over prolonged periods of time without the doctor's advice. 4. Patients in whom Baralgin has caused a hypersensitivity reaction of any type should avoid future use of all pyrazolone – contaiming preparations.

11. Выберите нужную форму глагола.

1. Clinical features of shock (observe, are observed) in rare occasions following parenteral administration. 2. Side effects such as dryness of the mouth, a decrease in perspiration, accelerated heart rate (see, are seen) never while taking Baralgin. 3. During intravenous injection Baralgin (administer, is administered) slowly. 4. A substance with parasympatholytic action (reinforces, is reinforced) the spasmolytic effect.

12. Расскажите о свойствах Баралгина с помощью данных словосочетаний:

to be suited, spasmodic pain, antispasmodic effect, severe forms, smooth muscles.

13. Прочтите и переведите следующий текст.

ASPIRIN

Description and properties. White crystals of a slightly acid odour and taste. Sparingly soluble in water, readily soluble in alcohol, solutions of sodium hydroxide and sodium carbonate.

Tests for identity[1]. Boil 0.5 gm of the preparation in 5 ml of sodium hydroxide solution for 3 minutes, cool and acidify with dilute sulphuric acid. A white crystalline precipitate appears. The solution possesses the odour of acetic acid.

The melting point is 133–136 (the rate of the rise of temperature is 4–6° per minute).

Tests for purity. Dissolve 0.3 gm of the preparation in 5 ml of alcohol and add 25 ml of water (test solution). Place 15 ml of this solution in a cylinder, 5 ml of the same solution in another cylinder. Add to the latter 1 ml of 0.01 per cent aqueous solution of salicylic acid, 2 ml of alcohol, and make up with water to 15 ml (standard solution).[2] Add to both cylinders 1 ml of a 0.2 per cent acid solution of ammonium ferric alum.[3] The colouration of the tested solution should not be more intensive than that of the standard solution what corresponds to a free salicylic acid content in the preparation of not more than 0.1 per cent. Shake 1 gm of the preparation with 20 ml of water during 1 minute and filter. 10 ml of this filtrate should not contain more chlorides than 10 ml of this standard solution, i.e. not more than 0.004 per cent in the preparation. The sulphate content of 10 ml of the same filtrate should not be more than in 10 ml of the standard solution, i.e. not more than 0.02 per cent in the preparation. The contents of sulphate ash of the preparation should not exceed 0.1 per cent and should not contain more heavy metals than in 10 ml of the standard solution, i.e. not more than 0.001 per cent in the preparation.

Assay. Dissolve 0.5 gm of the preparation accurately weighed in 10 ml of alcohol neutralized against phenolphthalein[4] and titrate with 0.1 N solution of sodium hydroxide to pink colouration using the same indicator.

1 ml of 0.1 N solution of sodium hydroxide is equivalent to 0.01802 gm of acetyl-salicylic acid. The preparation should contain not less than 99.5 per cent of acetyl-salicylic acid.

The assay is to be made at a temperature not above 20 °C.

Storage. In well stoppered jars.

Notes

[1] test for identity – проба (испытание) на идентичность

[2] make up with water to 15 ml (standard solution) – доводить водой до 15 мл (стандартный раствор)

[3] ammonium ferric alum – двойная соль сернокислого аммония и сернокислого железа (железо-аммониевые квасцы)

[4] neutralized against phenolphthalein – нейтрализованный по фенолфталеину

14. Назовите исходную форму следующих существительных:

observer, indicator, visitor, dictator, collector, worker, conductor, investigator, inventor, teacher, experimenter.

15. Назовите суффиксы следующих слов:

slightly, solution, aqueous, correspondence, colourless, appearance, noticeable, yellowish, acidity, hydrochloric, powdery, purity, alcoholic, freshly, preparation, dissolve, readily, carbonate, sulphuric, colouration, filtrate, neutralized.

16. Сгруппируйте следующие слова по частям речи:

to solve, solution, soluble; to prepare, preparation, preparatory; to precipitate, precipitation, precipitant; to add, addition, additional, additionally; colour, colouration, colouring; accurately, accurate, accuracy; intensive, intensity, intensively.

17. Выберите из списка соответствующий глагол и поставьте его в повелительное наклонение:

to boil, to dissolve, to acidify, to shake, to filter, to dilute, to cool, to add.

1. (Взболтайте) the contents of the flask for a minute. 2. (Давайте разбавим) the filtrate to 1 litre and stir it in an orange-coloured bottle. 3. (Окислите) the contents by the addition of 25 ml of dilute hydrochloric acid. 4. (Давайте вскипятим) 0.5 gm of the preparation in 5 ml of sodium hydroxide solution for 3 minutes. 5. (Добавьте) to both cylinders 1 ml of 0.2 per cent acid solution of ammonium ferric alum. 6. (Давайте растворим) 0.1 gm of picric acid in water-solution. 7. (Охладите и профильтруйте) the obtained solution.

18. Прочтите предложения и вставьте соответствующий модальный глагол или его эквивалент.

1. The ammonia … be stored in liquid form in metal cylinders. 2. Phenolphthalein … be taken as an example of a typical indicator. 3. The proposed method … determine ampicillin in pure form or in capsules. 4. The substance of which the melting-point … to be determined is dried. 5. A different method … be used in determining the melting-points of oily

substances. 6. Care … be taken when using sulphuric acid in a melting-point apparatus.

19. Образуйте степени сравнения следующих прилагательных:

difficult, much, few, bad, many, accurate, big, wide, large, high, clean

20. Прочтите предложения и переведите на английский язык прилагательные, данные в скобках.

1. Ammonium sulphate is (самая важная) commercial ammonium salt. 2. The difference between duplicates was always (меньше) than 0.5 %. 3. The rate of the former reaction in the presence of an excess of air oxygen is 5 times (больше) than the latter one. 4. The colouration obtained should not be (более) intensive than that of the standard solution. 5. Cyclic acids are (более трудные) for isolation.

21. Объедините следующие пары простых предложений в одно сложное при помощи союзов if или when.

A change of colour is observed. We repeat the test. → If a change of colour is observed we repeat the test.

1. A catalytic agent, manganese dioxide, is present. The reaction is not slow. 2. The mixture contains less than 16 per cent of oxygen. More time is required for completing the reaction. 3. The water surface is colder than the dew-point temperature. Evaporation is negative and condensation begins. 4. Calcium hydroxide is treated with hydrochloric acid. Aluminium and iron are precipitated as hydroxides (test for aluminium). 5. A few drops of alcohol are warmed with a solution of potassium dichromate. The solution changes from orange to green. 6. A little starch is mixed with the potassium iodide. The paper will appear blue.

22. Вместо пропусков вставьте соответствующие слова:

acid, a cylinder, minutes, colouration, sodium carbonate, solution, water.

1. Aspirin is sparingly soluble in water, readily soluble in … . 2. The solution possesses the odour of acetic … . 3. The colouration of the tested solution should not be more intensive than that of the standard … . 4. Let's place 15 ml of this solution in … . 5. 0.5 gm of the preparation is boiled in 5 ml of sodium hydroxide solution for 3 … . 6. We shake 1 gm of the

preparation with 20 ml of … . 7. The preparation is titrated with 0.1 N solution of sodium hydroxide to pink … .

23. Найдите в тексте эквиваленты следующих словосочетаний:

содержание свободной салициловой кислоты; белый кристаллический осадок; слегка кислый вкус; легко растворим в спирте; водный раствор; хорошо закрытые банки; тяжелые металлы; разбавленная серная кислота; точно взвешенный.

24. Переведите на английский язык.

1. Аспирин слабо растворим в воде, но легко растворим в спирте.

2. Препарат охлаждается и окисляется разбавленной серной кислотой. 3. Давайте растворим 0,3 г препарата в 5 мл спирта. 4. Добавьте к этому раствору 25 мл воды и поместите полученный раствор в цилиндр. 5. Аспирин хранится в хорошо закупоренных банках. 6. Выполняя пробу на идентичность, мы должны вскипятить 0,5 г препарата в 5 мл раствора гидроокиси натрия. 7. Окрашивание испытуемого раствора не должно быть очень интенсивным.

25. Ответьте на следующие вопросы.

1. In what substances is aspirin readily soluble?
2. What precipitate appears when testing aspirin for identity?
3. What odour does the solution possess?
4. What is the melting point of aspirin?
5. What substances are taken to carry out tests for purity?
6. Is the total solution placed in the same cylinder?
7. What is added to both cylinders?
8. What can you say about the colouration of the tested solution?
9. How much acetyl-salicylic acid should the preparation contain?
10. At what temperature is the assay to be made?

ТЕСТОВЫЕ ЗАДАНИЯ

Выберите один правильный ответ.

1. BARALGIN PRODUCES AN ... EFFECT
    1) antibacterial
    2) antispasmodic
    3) antiinflammatory

2. BARALGIN PRODUCES A RAPID EFFECT ON THE ... MUSCLES
    1) smooth
    2) striated
    3) motor

3. THE PREPARATION SHOULD BE USED IN
    1) trivial conditions
    2) pyrozolone allergy
    3) severe spasmodic pain

4. CONTRAINDICATIONS TO THE PREPARATION ARE
    1) cramps in the gastrointestinal tract
    2) urinary retention and gastrointestinal obstruction
    3) acute spasmodic pain in the billiary tract

5. BARALGIN PRODUCES A ... AND ... ANTISPASMODIC EFFECT ON SMOOTH MUSCLES
    1) slow and short
    2) rapid and sustained
    3) instant and short

6. ONE OF THE SIDE EFFECTS OF BARALGIN IS
    1) gastrointestinal obstruction
    2) hepatic porphyria
    3) imminent shock

7. PATIENTS WITH ... SHOULD AVOID THE USE OF THE DRUG
    1) hypersensitivity reaction
    2) severe forms of spasmodic pain
    3) no allergic reaction

8. PATIENTS SUFFERING FROM ... BELONG TO A RISK GROUP
    1) cardiac diseases
    2) pyrozolone allergy
    3) trivial conditions

9. ASPIRIN HAS … TASTE
    1) bitter
    2) neutral
    3) sour

10. WATER … DISSOLVES ASPIRIN
    1) sparingly
    2) easily
    3) rather hard

11. ASPIRIN IS MELTED AT
    1) less then 130 ^{0}C
    2) more then 130 ^{0}C
    3) 130 ^{0}C sharp

12. DURING THE TEST FOR PURITY THE COLOUR OF THE TESTED SOLUTION
    1) is more intensive then that of the standard solution
    2) should not be more intensive than that of the standard solution
    3) is less intensive then that of the standard solution

13. THE CONTENT OF SULPHATE OF 10 ML OF THE SAME FILTRATE
    1) is more than in 10 ml of the standard solution
    2) is less than in 10 ml of the standard solution
    3) should not be more than in 10 ml of the standard solution

14. THE CONTENTS OF SULPHATE ASH OF THE PREPARATION
    1) must more than 0.1 per cent
    2) must be more than 0.001 per cent in the preparation
    3) should not be more than 0.1 per cent

15. THE ASSAY IS TO BE MADE AT
    1) more than 20 °C
    2) not more than 20 °C
    3) 20 °C

ГРАММАТИЧЕСКИЙ СПРАВОЧНИК

Формы английского глагола

Формы английского глагола делятся на личные и неличные.

Личные формы глагола выражают: лицо – 1-е, 2-е, 3-е, число (единственное и множественное), наклонение (изъявительное, сослагательное, повелительное), время (настоящее, прошедшее, будущее) и залог (действительный и страдательный).

Личные формы глагола служат в предложении сказуемым и согласуются с подлежащим в лице и числе.

К неличным формам глагола относятся: неопределенная форма глагола/ инфинитив (Infinitive), причастие I (Participle I), причастие II (Participle II) и герундий (Gerund). Они не выражают лицо, число, время и наклонение и поэтому не могут выполнять функцию сказуемого.

К основным формам английского глагола относятся:

1. Infinitive
2. Past Indefinite
3. Participle II
4. Participle I

Infinitive употребляется для образования:

1) причастия прошедшего времени стандартных (правильных) глаголов;
2) причастия настоящего времени;
3) времен группы Indefinite (Simple).

Причастие прошедшего времени (Participle II) употребляется для образования:

1) времен группы Perfect;
2) Passive Voice.

Причастие настоящего времени (Participle I) употребляется для образования:

1) времен группы Continuous.

По способу образования Past Indefinite и Participle II глаголы делятся на стандартные и нестандартные.

Стандартные (правильные) глаголы **(Regular Verbs)** образуют Past Indefinite и Participle II путем прибавления к основе инфинитива (без частицы **to**) суффика ***-ed*** для всех лиц единственного и множественного числа.

Нестандартные (неправильные) глаголы **(Irregular Verbs)** образуют Past Indefinite и Participle II различными способами, и их следует заучивать наизусть.

Причастие настоящего времени (Participle I) образуется путем прибавления к основе инфинитива суффикса ***-ing*** .

Основные формы глагола

I форма Infinitive (Неопределённая форма глагола)	**II форма** Глагол в простом прошедшем времени The Past Indefinite Tense	**III форма** Причастие прошедшего времени Participle II (Past Participle)	**IV форма** Причастие настоящего времени Participle I (Present Participle)
to ask	ask**ed**	ask**ed**	ask**ing**
to carr**y**	carr**ied**	carr**ied**	carr**ying**
to cry	cried	cried	cry**ing**
to play	played	played	play**ing**
to die	died	died	d**ying**
to refer	refe**rr**ed	refe**rr**ed	refe**rr**ing
to go	went	gone	go**ing**
to bring	brought	brought	bring**ing**
to put	put	put	pu**tt**ing
to cut	cut	cut	cu**tt**ing
to have	had	had	hav**ing**
to leave	left	left	leav**ing**

PRESENT INDEFINITE (SIMPLE) TENSE
ACTIVE VOICE

Образование: ***Infinitive*** без частицы ***to*** во всех лицах, кроме 3-го лица единственного числа, принимающего окончание ***-s (-es,*** если инфинитив оканчивается на гласную – ***o*** или согласные ***-sh, -ss, -x, -ch, -tch.*** E.g. She/he goes, washes, passes, catches, teaches***).*** *Вопросительная и отрицательная* формы – при помощи ***Do/does*** и ***not (n't)***;
e.g. Do you swim well? – Yes, I do. (No, I don't). But he doesn't swim well.

Употребляется:

1. Для обозначения простых фактов и общих истин:
e.g. Water ***boils*** at 100 degrees Celsium.

2. Для выражения повседневных, повторяющихся действий, привычек, обычаев:
e.g. I ***have*** a cup of coffee every morning.
We always ***see*** the New Year at home.

Наречия: ***always, often, seldom, sometimes, never, hardly, even never*** (почти никогда) ***nearly always*** (почти всегда), ***usually, generally*** (как правило) и т.д.
Наречия обычно → перед глаголом. В предложениях с "to be" чаще после форм этого глагола.
e.g. I ***am*** never late to the classes.

3. Для выражения будущего действия:
а) с глаголами движения: *to come, to arrive*-прибывать, *to leave*-уезжать, *to go*-уходить и т.д. В этом случае будущее действие выражено либо наречием времени (*tomorrow, soon*), либо контекстом:
e.g. What time ***does*** the train ***arrive*** in Moscow?
John ***leaves*** for Moscow next week (soon).
б) в условных и временных обстоятельственных предложениях после союзов:***if*** **–** если, ***in case –*** в случае, ***supposing***-предположим, ***unless*** – если не, ***when*** – когда, ***before*** – перед, ***till (until) –*** пока (пока не), ***as soon as –*** как только, ***provided*** – если только, ***while*** – пока и др. (В соответствующих русских предложениях глагол – в будущем времени).

e.g. If I ***answer*** well, ***I'll get*** a "five".
We'***ll miss*** the train unless we ***hurry***.
When I ***come*** home, I'***ll have*** my dinner.
We'***ll start*** as soon as you ***are*** ready.

4. Для обозначения действий, совершающихся в момент речи, с глаголами восприятия (*to see, to hear*), умственной деятельности (*to understand, to know*), чувства (*to love, to hate, to like, to prefer*), обладания (*to belong, to contain, to possess* – обладать, владеть)
e.g. I ***see*** you well.
I ***understand*** what you mean.
I ***like*** strong tea.
This book ***belongs*** to me.

PAST INDEFINITE (SIMPLE) TENSE
ACTIVE VOICE

Образование: при помощи второй формы глагола (правильные глаголы – инфинитив + ***ed).***

Употребляется:

1. Для обозначения действий, происходивших в прошлом, как завершившихся так и не завершившихся в прошлом, но не связанных с настоящим.
Обстоятельства времени: yesterday, last week, on Sunday, in 1990, the otter day (на днях).
Наречие "***ago***" – *a month ago, many years ago, long ago*(давно), not long ago (недавно).
Переводится глаголами в прошедшем времени, совершенного и несовершенного вида.

2. Для описания ряда последовательных действий в прошлом.
e.g. Mr. West ***came up*** to the house, ***took*** the key out of his pocket and ***opened*** the door.
Для описания ряда последовательных действий в прошлом используется также ***used(to)+ Infinitive.***

e.g. Last year we ***used to go*** to the skating rink on Sundays.

В прошлом году мы ***(обычно) ходили*** на каток по воскресеньям.

FUTURE INDEFINITE (SIMPLE) TENSE ACTIVE VOICE

Образование: вспомогательные глаголы **shall/will (‘ll) + Infinitive**

Употребляется для выражения *одновременного или повторяющегося обычного действия или ряда последовательных действий в будущем.*

e.g. *Next year I **shall finish** school.*

Обстоятельства времени: **tomorrow, next week (year), in a week, in a few days, one of these days** – на днях.

e.g. *One of these days we **shall go** to the country.*

*На днях мы **поедем** за город.*

Примечание. Future Indefinite не употребляется в придаточных предложениях времени и условия после союзов: **when** *когда***, as soon as** *как только***, if** *если***, unless** *если не* и др. В этих предложениях будущее действие выражается глаголами в Present Indefinite, которые на русский язык переводятся глаголами в будущем времени.

e.g. If he ***comes*** to the country, we’***ll go*** skiing.

Если он ***приедет*** в деревню, мы ***пойдём*** кататься на лыжах.

INDEFINITE (SIMPLE) TENSE PASSIVE VOICE

Употребляется для выражения действий, указанных в действительном залоге, но совершающихся над лицом или предметом, являющимся подлежащим в предложении.

Образование: “to be” + Participle II, где “to be” изменяется по лицам, числам и временам.

Глагольная форма в Passive voice переводится на русский язык:

1. Русскими возвратными глаголами на ***-ся, -сь***; например *строятся/строились, оперировался.*
2. Глаголом-сказуемым в неопределённо-личном предложении.

Например: *Операции выполняют успешно.*

3. Сочетанием глагола «быть» и русского краткого страдательного причастия. Например: *был прооперирован, будет обследован.*
4. Предложением с глаголом в действительном залоге. При этом подлежащее в русском предложении соответствует в английском предложному дополнению с предлогом **by:**

e.g. A liar is believed **by** nobody. Лжецу никто не верит.

Continuous Tense
PRESENT CONTINUOUS (PROGRESSIVE) TENSE
ACTIVE VOICE

Образование: глагол **to be + Participle I,** где**"to be"** изменяется по лицам, числам и временам, то есть **am/is/are + Participle I.**

Употребляется:

1. Для выражения незавершенного действия, протекающего в данный момент, в момент речи или в настоящий период времени.

Обстоятельства времени**:** ***now, right now, at this moment***-сейчас, в данный момент, ***today***-сегодня, ***this week(month, year)*** и т.д., или ситуация.

e.g. We ***are having*** an English class right now. It is noon. I ***am sitting*** in the park, some children ***are playing*** with a ball, an old man ***is reading*** a paper.

Перевод: **глаголами несовершенного вида**.

Примечание. Глаголы чувственного восприятия (***to see, to hear***), умственной деятельности (***to know, to understand, to forget***), чувств (***to like, to love, to hate***), желание (***to want, to wish***), принадлежности (***to belong, to possess, to cost***-стоить), глагол ***"to be"*** как смысловой глагол (*быть, являться, находиться*) не употребляются в Present Continuous.

Значение длительного процесса, происходящего в данный момент, эти глаголы передают глагольными формами Present Indefinite Tense.

e.g. ***Do*** you ***hear*** what he ***is saying***.

2. Для выражения будущего действия, когда налицо намерение совершить действие или уверенность в его совершении. Наречия, указывающие на будущее действие: *tomorrow, soon* или контексты.
This plane ***is arriving*** in London at 7.00 tonight.

3. Сочетание Present Continuous глагола ***to go*** с ***Infinitive*** часто употребляется для выражения намерения совершить действие или уверенности в его совершении.
e.g. I ***am going to work*** in summer.

PAST CONTINUOUS (PROGRESSIVE) TENSE
ACTIVE VOICE

Образование: was/were + Participle I.

Употребляется:

1. Для выражения незаконченного действия, протекавшего (длившегося) в определенный момент в прошлом, который обозначен либо обстоятельствами времени, либо другим действием в прошлом.
e.g. *I **was writing** a letter at 5 o'clock.*
*I **was writing** a letter when you **came.***

2. Для выражения длительного действия, протекавшего в определенный период времени в прошлом (***from 6 to 7, all day long last Saturday, the whole day yesterday*** и т.д.)
e.g. *I **was writing** a composition the whole day yesterday.*

3. Past Continuous употребляется для выражения одновременных действий, протекавших в прошлом в один и тот же момент.
e.g. *As I **was taking** a shower, mother **was cooking** breakfast.*

FUTURE CONTINUOUS (PROGRESSIVE) TENSE
ACTIVE VOICE

Выражает будущее действие в процессе его совершения, т.е. незаконченное длительное действие. **Образование: shall/will(‘ll) be + Participle I.**

Употребляется:

1. Для выражения длительного действия, которое начнется до определенного момента в будущем и все еще будет продолжаться, длиться в этот момент. На него будут указывать обстоятельства времени с предлогом ***at***: at 5 o'clock, at that moment, at midnight.
e.g. At ten o'clock tomorrow morning he will be having an examination.

2. Для выражения длительного действия, которое будет совершаться в определенный период времени в будущем.
e.g. I'll be reading the whole day tomorrow.

3. Для выражения намерения совершить действие в будущем или уверенности в его совершении.
e.g. *I* ***shall be working*** *tonight.* *Я* ***собираюсь поработать*** *сегодня вечером.*

CONTINUOUS (PROGRESSIVE) TENSE
PASSIVE VOICE

Образование: “to be” + being + Participle II, где **“to be”** изменяется по лицам, числам и временам.

Present Continuous Tense – **am/is/are + being + Participle II**
Past Continuous Tense – **was/were + being + Participle II**

Примечание. Глагольная форма страдательного залога **будущего времени** для *Continuous Tense* отсутствует.

Употребляется для выражения действий, указанных в действительном залоге, но совершающихся или совершавшихся над лицом или предметом, являющимся подлежащим в предложении.
e.g. The operation ***is being performed*** *now.*
At 5 o’clock yesterday evening the letter ***was being written*** *by him.*

PRESENT PERFECT TENSE
ACTIVE VOICE

Образование: “to have/has” + Participle II

Употребляется:

1. Для выражения действия, завершившегося к моменту речи, поэтому иногда называется преднастоящим. Время действия не указывается, оно не имеет значения, т.к. важен сам факт совершения действия к настоящему моменту или его результат.

e.g. *He **has** just **left** for the university.* — *Он только что **ушёл** в университет.* (Его здесь нет.)

Если время действия указано, то употребляется Past Indefinite(Simple) Tense.

*e.g. Ann **read** this book last month.* — *Аня **прочитала** эту книгу в прошлом месяце.*

В этом значении Present Perfect часто употребляется с наречиями ***"just"–*** *только что*, ***"already"****-уже*, , ***lately/recently*** *– недавно*, ***of late*** *– в последнее время,* а в отрицательных и вопросительных предложениях ***"yet"****-еще/уже.*

e.g. *The mail **has** just **come**.* — *Почта только что пришла.*

*I **have seen** many pictures lately (of late).* — *В последнее время я **посмотрел** много картин.*

*I **haven’t seen** her yet.* — *Я ее еще не видел.*

***Has** it **stopped** raining yet?* — *Дождь уже **кончился**?*

2. Для выражения действия, которое завершилось, но тот период, в котором оно происходило, еще продолжается и может быть обозначен обстоятельством времени ***today***-сегодня, ***this week***-на этой неделе (...year, ...century).

e.g. *I **have seen** the film twice this week.* — *Я дважды **видел** этот фильм.*

3. Для выражения действия, которое началось в прошлом, продолжалось до настоящего времени и протекает в настоящем, т.е. действия, которое охватывает целый период времени, включающий и настоящий момент.

e.g. *I **have known** him all my life.* *Я **знаю** его всю жизнь.* (= Я знал его раньше и знаю сейчас.)

*I **have** always **been** in love with you.* *Я всегда вас **любил**.*

Глагол в Present Perfect в этом значении переводится на русский язык глаголом настоящего времени. В этом значении Present Perfect употребляется с глаголами, с которыми невозможен Present Perfect Continuous – ***to see, to hear***, etc. Глаголы ***to live, to study, to work*** и др., выражающие процесс могут употребляться как в Present Perfect, так и в Present Perfect Continuous.

e.g. *I **have worked (have been working)** at my report since early morning.* *Я **работаю** над докладом с утра.*

Примечания. *Present Perfect* может употребляться с наречиями, обозначающими частотность действия или выражающими неопределенность времени действия: ***always, often, never, ever, seldom, hardly ever*** *почти никогда*, которые также употребляются со всей группой форм Indefinite(Simple) – Present Indefinite, Past Indefinite и Future Indefinite.

e.g. *I **have** never **seen** this man.* *Я никогда не видел этого человека.*

***Have** you ever **been** to the USA?* *Ты когда-либо был в США?*

Present Perfect употребляется, когда начало действия в прошлом передаётся посредством ***since***, выступающим:

1. В качестве союза ***с тех пор как*** e.g. *I **have lived** in this city since my family moved here in 1980. Я **живу** в этом городе, с тех пор как моя семья переехала сюда в 1980 г.*
2. В качестве наречия: e.g. *We moved to Tomsk 20 years ago. We **have lived** here since. Мы **переехали** в Томск 20 лет назад. С тех пор мы **живём** здесь.*
3. В качестве предлога: e.g. *They **have lived** in Moscow since 1960.*

*Они **живут** в Москве с 1960 г.*

В этих случаях вопросы к обстоятельству времени образуются при помощи ***since when*** *с каких пор* или ***how long*** *сколько времени.* Например: *Since when (How long) **has** he **lived** in Tomsk? С каких пор (Сколько времени) он живёт в Томске?*

Весь период времени, охватываемый действием глагола в *Present Perfect* – от прошлого до настоящего включительно, может передаваться предлогом ***for***

e.g. *They **have worked** at the plant*	*Они **работают** на заводе*
***for** 10 years.*	*(в течение) **10 лет.***

PAST PERFECT TENSE
ACTIVE VOICE

Образование: had + Participle II

Употребляется:

1. Для выражения прошедшего действия, которое уже совершилось до определенного момента в прошлом. Этот момент указывается обстоятельством времени: ***by 5 o'clock, by Saturday, by that time, by the end of the year…***

e.g. *I **had cleaned** the apartment*	К пяти часам я ***убрала***
by 5 o'clock.	квартиру.
*I **had** never **seen** him*	Я никогда его ***не видела***
before yesterday.	до вчерашнего дня.

2. Для выражения действия, которое завершилось раньше другого действия в прошлом, выраженного глаголом в Past Indefinite.

e.g. They ***had*** already ***gone*** when	Они уже ***ушли***,
I ***arrived***.	когда я ***пришёл***.

Past Perfect часто употребляется в *придаточном предложении* после союза ***after*** *после того как*:

e.g. *After she **had done** her homework, she **went** out for a walk.*

*After she **had taken** a pill,*
*she **felt** better.*

*После того как она **приняла** таблетку, ей **стало** легче.*

Past Perfect употребляется в *главном предложении* с придаточным, начинающимся с союза ***before*** *прежде чем / до того как:*

e.g. *I **had** already **cleaned** the flat before my mother **came** home.*

*Я **убрала** квартиру, до того как мама **пришла**.*

FUTURE PERFECT TENSE
ACTIVE VOICE

Образование: shall/will/'ll + have + Participle II

Употребляется для выражения будущего действия, которое закончится до определенного момента в будущем (предбудущее). Момент в будущем может быть выражен:

1. Обстоятельством времени с предлогом by (***by 5 o'clock, by the end of the year*** и др.).

e.g. *They **will have read** the book by tomorrow.*

*К завтрашнему дню они **прочтут** эту книгу.*

2. Другим будущим действием, выраженным *Present Indefinite* в придаточном предложении времени с такими союзами как ***before*** *до того как****, when*** *когда****:***

e.g. *When we **meet** next time, I'**ll have read** this book.*

*Когда мы **встретимся** в следующий раз, я уже **прочитаю** эту книгу.*

*I'**ll have read** this book before we **meet**.*

*Я **прочту** эту книгу до того, как мы **встретимся.***

PERFECT TENSE
PASSIVE VOICE

Образование: have + been + Participle II, где **"to have"** изменяется по лицам, числам и временам:

Present Perfect, Passive Voice have/has + been + Participle II

Past Perfect, Passive Voice had + been + Participle II

Future Perfect, Passive Voice shall/will/'ll + have+been + Participle II

Употребляется для выражения действий, указанных в действительном залоге над лицом или предметом, являющимся подлежащим в предложении.

e.g. *The operation **has** already **been performed**.* — *Операция уже **выполнена**.*

*The examination **had been performed** by 12 a.m. yesterday.* — *Осмотр был **выполнен** к 12 часам дня вчера.*

*The research **will have been carried out** by next Monday.* — *Исследование **будет выполнено** к следующему понедельнику.*

PRESENT PERFECT CONTINUOUS TENSE
ACTIVE VOICE

Образование: have/has been + Participle I

Употребляется:

1. Чтобы подчеркнуть *длительный* характер действия, которое началось в прошлом и продолжается в настоящем:

e.g. *I **have been waiting** for almost twenty minutes, but he's still busy.* — *Я **жду** уже почти 20 минут, но он всё ещё занят.*

Начало действия обозначено предлогом /союзом/наречием ***since** с тех пор (как):*

e.g. *He **has been learning** Anatomy since 3 o'clock (since morning, since I came home).* — *Он **учит** анатомию с трёх часов (с утра, с тех пор как я пришла домой).*

Период времени, в течение которого происходило действие, может быть выражено предлогом ***for*** со словосочетанием или наречием в функции обстоятельства времени (***all day long**-весь день*, ***the whole month** – целый месяц*, ***lately** – недавно, за последнее время*, ***recently** недавно* – и др.):

e.g. *He **has been examining** the patient for 30 minutes (for a long time).* — *Он **осматривает** пациента (уже) 30 минут (в течение длительного времени).*

*I **have been learning** English for a long time.* — *Я давно **учу** английский.*

Вопрос к обстоятельству времени в этом случае начинается с ***how long*** *сколько времени, как долго.*

e.g. **How long *have*** *you* ***been sitting*** *here?* — **Сколько (как долго)** *ты уже здесь **сидишь**?*

Если в момент речи действие, выраженное сказуемым, ещё продолжается, глагол в *Present Perfect Continuous* переводится на русский язык глаголом *несовершенного вида в настоящем времени.*

2.Чтобы подчеркнуть, что, хотя длительное действие только что завершилось, результат его на лицо:

e.g. *"What's the matter? Why are you out of breath?"* — *Что случилось? Почему ты запыхался?*

*"I'**ve been running** all the way."* — *Я **бежал** всю дорогу.*

e.g. *"Your eyes are red. Have you been crying?"* — *У тебя красные глаза. Ты плакала?*

*"No? I **have been cutting** onions."* — *Нет, я **резала** лук.*

Если действие, которое длилось какое-то время, к моменту речи уже закончилось, глагол в *Present Perfect Continuous* переводится на русский язык глаголом *несовершенного вида в прошедшем времени.*

PAST PERFECT CONTINUOUS TENSE
ACTIVE VOICE

Образование: had been + Participle I

Употребляется:

1. Для выражения действия, которое началось ранее другого прошедшего действия, выраженного Past Simple, и еще продолжалось в момент его совершения в прошлом.

При этом указан период времени, в течение которого длительное действие совершалось (***for some time*** *в течение какого-то времени,* ***for two hours*** *в течение двух часов* и т. д. …)

e.g. *When I came, he **had been sleeping** for an hour.* — *Когда я пришёл, он **спал** уже час.*

I thought ***he had been sleeping*** *since 3 o'clock.*

Я подумал, что он ***спит*** *с трёх часов.*

(В этом значении предлог ***for*** указывает на период времени, в который это действие длилось, а ***since*** – на то, с какого момента оно начало развиваться.)

2. Для выражения длительного прошедшего действия, которое закончилось непосредственно перед моментом наступления другого прошедшего действия:

e.g. *He felt tired when he came home as he* ***had been working*** *on the report.*

Он чувствовал себя очень когда пришел домой, так как ***работал*** *над докладом.*

(До того как он пришел домой, он в течение какого-то времени работал над докладом.)

FUTURE PERFECT CONTINUOUS TENSE ACTIVE VOICE

Образование: shall/will have been + Participle I

Будущее перфектно-длительное (Future Perfect Continuous) **употребляется** для выражения длительного будущего действия, которое начнется ранее другого будущего действия или момента и будет продолжаться в этот момент.

e.g. *By tonight I'****ll have been working*** *for seven hours.*

Сегодня к вечеру я ***буду работать*** *уже семь часов.*

Может употребляться только с глаголами, которые сами по себе выражают длительное действие, такими, как: ***to study*** *изучать,* ***to work*** *работать,* ***to travel*** *путешествовать,* ***to write*** *писать,* ***to listen*** *слушать,* ***to watch*** *наблюдать* и т. д.

e.g. *"How long* ***will*** *you* ***have been working*** *by tonight?"*

– Сколько ты уже ***будешь работать*** *к вечеру?*

"When you return home at five o'clock"

– Когда вы вернётесь домой в пять

*"I **shall have been working***	***– Я буду работать** в*
for seven hours."	*течение семи часов.*

REVISION

Translate the sentences paying attention to tenses:

1. It has been raining since morning.
2. I have not seen you for ages. What have you been doing lately?
3. We had been discussing our summer plans for an hour when he came.
4. I have a feeling that I have been bothering him much lately.
5. He has been trying to explain our plan to you for an hour, and you aren't listening to him.
6. When I saw him, his clothes were dirty as he had been working in the garden since morning.
7. The boys had been fixing the bicycle for more than two hours when the father came and said that they had fixed it wrongly.
8. His brother has been teaching at school since 2001.
9. He had been looking at me closely for some time before he came up and asked if we had met before.
10. He says he has been traveling much recently.
11. He had been working at the plant for about five years when the war broke out.
12. She hadn't finished the article by Saturday though she had been working at it since Monday.
13. She was very tired as she had been walking the whole day.

Modal Verbs

Модальные глаголы не обозначают действия или состояния, а передают отношение говорящего к действию, выраженному инфинитивом.

Modal verb + Infinitive = **сложное глагольное модальное сказуемое.**

Infinitive в сочетании с модальным глаголом употребляется без **«to»**, за исключением глагола ***ought*** (**to**).

Всего 10 модальных глаголов: ***can, may, must, should, would, shall, will, ought to, need, dare***. Наиболее употребительны следующие модальные глаголы ***can, may, must, should ought to, need.***

Глаголы ***to be*** и ***to have*** могут употребляться в модальном значении.

Особенности модальных глаголов:

1. Modal verbs не изменяются по лицам и не имеют *-s (-es)* в 3 лице единственного числа.
2. У них нет неличных форм глагола – инфинитива, причастия и герундия.
3. За исключением глаголов can (could) и may (might) modal verbs имеют только одну форму.
4. Infinitive после modal verbs без «to» (ought исключение).
5. В вопросительных и отрицательных предложениях они употребляются без вспомогательных глаголов.

Все modal verbs имеют 2 отрицательные формы: полную и краткую.

may not – mayn't
must not – mustn't
should not – shouldn't cannot can't
would not – wouldn't
need not – needn't
cannot – can't

Can (could)

Значения:

1. *Способность, умение* выполнять действие, выраженное инфинитивом. В этом значении ***can*** переводится ***мочь, уметь.***

I ***can*** swim.

Эквивалент *to be able to do smth.*

I hope she ***will*** soon ***be able to write***.	Надеюсь, скоро она **сумеет писать.**

2. *Разрешение* выполнить действие (в вопросительном и утвердительном предложениях)

e.g. You ***can go*** now.	Теперь вы **можете** идти.
Can I ***take*** the book?	**Могу** я (**можно** мне) взять книгу?

В этом значении в современном английском языке глагол ***can*** более употребителен, чем ***may.***

3. *Запрет* совершить действие (в отрицательных предложениях)

e.g. You ***can't play*** football indoors. **Нельзя** играть в футбол в помещении.

4. *Просьба* (в вопросительном предложении) ***could*** – для более вежливого обращения

e.g. ***Can*** I ***have*** an apple? **Дайте, пожалуйста**, яблоко.

Could you ***help*** me Не **могли бы** вы мне **помочь**? (Помогите, пожалуйста?)

5. *Сомнение, удивление* (отрицательное, вопросительное предложение)

e.g. It ***can't be*** true. **Не может быть**, чтобы это была правда.

Can he ***have gone?*** **Неужели** он **ушёл**?

(Perfect Infinitive указывает на то, что действие относится к прошлому).

May (might)

Значения:

1. *Разрешение* произвести действие (в утвердительных и вопросительных предложениях с употреблением неперфектного инфинитива общего вида)

You ***may go***. **Можете (можешь)** идти.

May I ***help*** you? **Разрешите** вам помочь?

Для выражения разрешения, относящегося к будущему, употребляется словосочетание **to be allowed (to):**

e.g. I think they ***will be allowed*** to go with us. Я думаю, им **разрешат поехать** с нами.

2. *Запрещение* производить действие (отрицательное предложение)

You ***may*** not ***come*** here.

Не смейте сюда **приходить**.

3. *Предположение* (может быть…), *неуверенность* (возможно…) в утвердительных и отрицательных предложениях. В этом значении синонимами **may** являются **perhaps** или **may be.**

They ***may be arriving***. **Может быть**, они **подъезжают**.

They ***may not have arrived***. **Возможно**, они **не приехали.**

Употребление might:

1. В соответствии с правилом согласования времён в *придаточном дополнительном* предложении:

e.g. She said that he ***might take*** her book. — Она сказала, что он **может взять** её книгу.

2. В сложно-подчинённом предложении

а) с *придаточным уступительным*

e.g. However hard he ***might try***, he will never be at the head of the class. — Как бы он ни старался, он никогда не будет первым учеником в классе.

б) с *придаточным цели*

e.g. I gave him my exercises so that he ***might correct*** them. — Я дал ему свои упражнения, чтобы он их проверил.

3. *Упрёк* в утвердительном предложении:

e.g. You ***might help*** me. — Ты **мог бы** мне **помочь**.

Must

Значения:

1. *Долженствование, необходимость* произвести действие в настоящем или будущем (в утвердительных и вопросительных предложениях)

e.g. I ***must go***. — Мне **надо идти**.

В отрицательных предложениях для передачи отсутствия необходимости употребляется другой модальный глагол**:**

e.g. ***Must*** I ***go*** there? — – Мне **нужно пойти** туда?

No, you ***needn't***. — – Нет, **не нужно**.

Эквиваленты ***MUST:***

have (to Infinitive) употребляется для выражения *необходимости* совершить действие *в силу определённых обстоятельств*, соответствует русскому *приходится, пришлось*:

e.g. I ***shall have to get up*** early not to miss the train. — Мне **придётся** рано **встать**, чтобы не опоздать на поезд.

I ***had to ask*** for help. Мне **пришлось просить** о помощи.

to be (to infinitive) употребляется для выражения *необходимости* совершить действие согласно *предыдущей договорённости* или *заранее намеченному плану*:

e.g. They ***are to come*** at 5 o'clock. Они **должны прийти** в пять.

I ***was to meet*** Mother at 3 o'clock. Я **должен был встретить** маму в три часа.

2. *Запрещение* производить действие:

e.g. You ***mustn't do*** it! **Не смей** это **делать!**

3. *Вероятность, уверенность в то, что действие совершается или совершилось, предположения, близкого к уверенности* и соответствует русским «*вероятно», «должно быть», «наверное», «очевидно».*

e.g. He ***must have read*** the book. **Вероятно** (**должно быть, наверное**, и **очевидно**) он **прочел** книгу.

It must ***have been raining*** when you left **Очевидно (вероятно),** когда ты уходила, **шел дождь.**

Should и ought (to)

Эти модальные глаголы очень близки по значению и поэтому могут рассматриваться вместе.

Значения:

1. *Совет* в утвердительном, отрицательном предложении:

e.g. You ***should (ought to) see*** a doctor. Вам **следует показаться** врачу.

You ***shouldn't (oughtn't to) go*** there. Тебе **не следует** туда **ходить.**

2. *Моральное обязательство* совершить действие:

e.g. You ***ought to be*** very serious about your homework. — Тебе **следует относиться** очень серьёзно к своим домашним заданиям.

3. *Порицание прошлого действия, упрёк* в предложениях с перфектным инфинитивом:

e.g. You ***should(ought to) have helped*** me. — Тебе **следовало** мне **помочь**.

NEED

Выражает *необходимость выполнить действие*.

1. В отрицательных предложениях выражает *отсутствие* такой *необходимости*:

e.g. You ***needn't do*** it now. — Сейчас **не нужно** это **делать**. (**Можно не делать** это сейчас.)

She ***needn't go*** there. — Ей **не нужно** туда **ходить**.

2. В вопросительных предложениях выражает *сомнение в целесообразности действия*, при этом говорящий дает отрицательный ответ. Это значение соответствует русскому «*нужно*».

e.g. ***Need*** she ***come*** to your place? — **Нужно** ей **приехать** к тебе?

She ***needn't come*** to me. — Ей **не нужно приезжать** ко мне.

3. Сочетание перфектного инфинитива с отрицательной формой модального глагола **need** означает**,** что действие было произведено, но оно было не нужно, переводится на русский словами «*зря, незачем было*»:

e.g. Tom ***needn't have hurried***. The train was late. — **Зря** Том **торопился**. Поезд опоздал.

Примечание:

Глагол **need** может употребляться как смысловой глагол в значении «*иметь потребность, нуждаться в ком-то или в чём-то»*. В этом случае при образовании вопросительной и отрицательной форм используется вспомогательный глагол **do (does, did)**:

e.g. He ***needs*** a new pair of shoes. Ему **нужна** новая обувь.
I ***don't need*** you. Ты мне **не нужен.**
Do you ***need*** me? Я вам **нужен**?

DARE

Означает *иметь (не иметь) мужество сделать что-нибудь.*
Глагол *dare* так же как и глагол *need* имеет некоторые особенности, которые отличают его от других модальных глаголов.

В вопросительной и отрицательной формах глагол *dare* может использовать вспомогательный глагол *do/does/ did,* иметь окончание -*s* в третьем лице единственного числа настоящего неопределенного (простого) времени, а также ***to****-Infinitive.*
Но как и любой модальный глагол, *dare* может употребляться *без* вспомогательного глагола в вопросительной и отрицательной форме, *без* окончания -*s* в третьем лице единственного числа настоящего неопределенного (простого) времени, а также иметь *Infinitive без* частицы ***to.***
Dare имеет две формы – *dare* для настоящего времени и *dared* для прошедшего времени и употребляется только с неперфектными простыми инфинитивами (*Indefinite Infinitives).*
Главным образом *dare* употребляется в вопросительных и отрицательных предложениях. Однако мы часто в разговорной речи употребляем клише *I dare say (Смею сказать/Полагаю)* синонимично фразе *I suppose.*

e.g. How ***dare*** you **talk** to me like that! Как ты **смеешь говорить** со мной в таком тоне!

This is a story he ***dare not write*** down. Это история, которую он **не осмеливается записать.**

He ***did not dare to meet*** his uncle. Он **не посмел встретить** своего дядю.

WILL

Will не чисто модальный глагол. Он почти всегда совмещает своё модальное значение с отнесением действия к будущему, т.е. со своей функцией вспомогательного глагола во всех формах будущего времени.

В сочетании с неперфектным инфинитивом **will** выражает:

1. *Желание, намерение*

e.g. I ***will write*** as soon as I can. — *Я* **непременно напишу**, как только смогу.

I ***will come*** whether you like it or not. — *Я* **всё равно приду**, хочешь ты или нет.

2. *Отказ* совершить действие (в отрицательных предложениях):

e.g. I ***won't do*** it again. — **Ни за что не буду делать** это снова.

3. *Вежливую просьбу:*

e.g. ***Will*** you ***pass*** the salt, please? — **Передайте**, пожалуйста, соль.

Форма **would** в этом значении передаёт более вежливую просьбу:

e.g. Would you pass the salt, please?

WOULD

1. **Would** в качестве модального глагола употребляется для выражения *предположения, желания, совета* и переводится на русский язык сказуемым в сослагательном наклонении:

e.g. It ***would be*** dangerous to delay the operation. — **Было бы** опасно откладывать операцию.

2. **Would** (обычно в отрицательной форме) употребляется со всеми лицами для выражения *упорного нежелания совершить действие*, обозначенное инфинитивом:

e.g. The nurse told the patients not to leave the ward, but they ***wouldn't*** listen. — Медсестра просила больных не выходить из палаты, но они **не желали** ничего слушать.

3. **Would** (наряду с **should**) употребляется в оборотах I would like, we would believe/think/consider, I would suggest, переводимых на русский язык как *мне бы хотелось, мы считали бы, я бы предложил.*

SHALL

Модальный глагол **shall** всегда совмещает своё модальное значение долженствования с отнесённостью к будущему времени, которое выражает вспомогательный глагол **shall.**

Shall как модальный глагол имеет значения:

1. *Долженствование* в утвердительном и вопросительном предложениях во 2-ом и 3-м лице:

e.g. You ***shall bring*** me your papers tomorrow. — Вы **должны принести** мне ваши письменные работы завтра.

2. *Запрос* на указание в отношении дальнейших действий. В этом случае на русский язык переводится неопределённой формой русского глагола.

e.g. ***Shall*** we ***begin***? — Нам **начинать?**

3. *Угроза, предостережение*:

e.g. He ***shall be punished*** for it. — Он **будет наказан** за это.

She ***shall pay*** for it. — Она **заплатит** за это.

ОТВЕТЫ К ТЕСТОВЫМ ЗАДАНИЯМ

ТЕМА 1
НАШ УНИВЕРСИТЕТ

Номер задания	Номер ответа	Номер задания	Номер ответа
1	2	9	1
2	2	10	2
3	1	11	2
4	2	12	1
5	2	13	1
6	3	14	2
7	1	15	1
8	2		

ТЕМА 2
РАБОЧИЙ ДЕНЬ СТУДЕНТА-МЕДИКА

Номер задания	Номер ответа	Номер задания	Номер ответа
1	2	6	2
2	1	7	1
3	1	8	2
4	3	9	3
5	3	10	2

ТЕМА 3
ФАРМАЦИЯ КАК НАУКА

Номер задания	Номер ответа	Номер задания	Номер ответа
1	2	8	1
2	2	9	3
3	1	10	1
4	3	11	3
5	1	12	1
6	1	13	3
7	2		

ТЕМА 4
ХИМИЧЕСКИЕ ЭЛЕМЕНТЫ

Номер задания	Номер ответа	Номер задания	Номер ответа
1	1	11	2
2	2	12	1
3	3	13	2
4	2	14	1
5	1	15	3
6	2	16	1
7	3	17	2
8	2	18	3
9	1	19	1
10	3		

ТЕМА 5
МЕСТО ХИМИИ В СОВРЕМЕННОЙ ЖИЗНИ

Номер задания	Номер ответа	Номер задания	Номер ответа
1	3	9	2
2	2	10	3
3	3	11	3
4	3	12	3
5	1	13	2
6	2	14	1
7	3	15	3
8	3		

ТЕМА 6
ПЕРИОДИЧЕСКАЯ ТАБЛИЦА И ПЕРИОДИЧЕСКИЙ ЗАКОН

Номер задания	Номер ответа	Номер задания	Номер ответа
1	2	9	3
2	3	10	1
3	1	11	2
4	2	12	3
5	1	13	1
6	2	14	3
7	3	15	2
8	3		

ТЕМА 7
В ХИМИЧЕСКОЙ ЛАБОРАТОРИИ

Номер задания	Номер ответа	Номер задания	Номер ответа
1	2	9	3
2	1	10	2
3	3	11	1
4	2	12	2
5	3	13	3
6	3	14	3
7	3	15	2
8	2		

ТЕМА 8
АНАТОМИЯ ЧЕЛОВЕКА

Номер задания	Номер ответа	Номер задания	Номер ответа
1	3	9	3
2	3	10	1
3	1	11	1
4	2	12	1
5	3	13	3
6	2	14	2
7	1	15	3
8	2		

ТЕМА 9
АПТЕКА

Номер задания	Номер ответа	Номер задания	Номер ответа
1	3	9	1
2	1	10	3
3	2	11	1
4	2	12	2
5	2	13	1
6	3	14	3
7	1	15	2
8	2		

ТЕМА 10
В ПОЛИКЛИНИКЕ

Номер задания	Номер ответа	Номер задания	Номер ответа
1	3	9	2
2	2	10	3
3	3	11	3
4	3	12	3
5	1	13	2
6	2	14	1
7	3	15	3
8	3		

ТЕМА 11
ЛЕКАРСТВЕННЫЕ РАСТЕНИЯ

Номер задания	Номер ответа	Номер задания	Номер ответа
1	3	11	3
2	1	12	3
3	2	13	1
4	1	14	2
5	2	15	3
6	3	16	1
7	1	17	1
8	3	18	1
9	2	19	2
10	1	20	3

ТЕМА 12
ЛЕКАРСТВЕННЫЕ ПРЕПАРАТЫ

Номер задания	Номер ответа	Номер задания	Номер ответа
1	2	9	3
2	1	10	1
3	3	11	2
4	2	12	2
5	2	13	3
6	3	14	3
7	1	15	2
8	2		

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ПРИЛОЖЕНИЯ

ПРИЛОЖЕНИЕ 1

IRREGULAR VERBS

Base form	Past Simple	Past Participle
arise	arose	arisen
be	was/were	been
become	became	become
begin	began	begun
break	broke	broken
bring	brought	brought
build	built	built
buy	bought	bought
catch	caught	caught
choose	chose	chosen
come	came	come
cost	cost	cost
cut	cut	cut
dig	dug	dug
do	did	done
drink	drank	drunk
eat	ate	eaten
fall	fell	fallen
feel	felt	felt
fight	fought	fought
find	found	found
fly	flew	flown
forget	forgot	forgotten
get	got	got
give	gave	given
go	went	gone
grow	grew	grown
have	had	had
hear	heard	heard
keep	kept	kept
know	knew	known
lead	led	led
learn	learnt/learned	learnt/learned

leave	left	left
light	lit	lit
lose	lost	lost
make	made	made
meet	met	met
pay	paid	paid
put	put	put
read	read	read
run	ran	run
say	said	said
see	saw	seen
sell	sold	sold
send	sent	sent
shut	shut	shut
sit	sat	sat
sleep	slept	slept
speak	spoke	spoken
spend	spent	spent
stand	stood	stood
take	took	taken
tell	told	told
think	thought	thought
understand	understood	understood
wake	woke	woken
wear	wore	worn
win	won	won
write	wrote	written

ПРИЛОЖЕНИЕ 2

HOW TO READ CHEMICAL FORMULAS AND EQUATIONS

CH4 +2O2 → CO + 2H2O [ˊsiːˊeɪtʃˊfɔːˊplʌsˊtuːˊmɔlɪkjuːlz əvˊouˊtuːˊgɪvzˊsiːˊouˊplʌsˊtuːˊmɔlɪkjuːlz əvˊeɪtʃˊtuːˊou]

H + NaHCO3 → Na + H2CO3 → Na + H2O + CO2 [ˊhaɪdrədʒənˊaɪənˊplʌsˊenˊerˊeɪtʃˊsiːˊouˊθriːˊgɪvzˊneɪtrɪəmˊaɪənˊplʌsˊeɪtʃˊtuːˊsiːˊouˊθriːˊgɪvzˊneɪtrɪəmˊaɪənˊplʌsˊeɪtʃˊtuːˊouˊplʌsˊsiːˊouˊtuː]

4HCl + O2 = 2Cl2 + 2H2O [ˊfɔːˊmɔlɪkjuːlz əvˊeɪtʃˊsiːˊelˊplʌsˊouˊtuːˊgɪvzˊtuːˊmɔlɪkjuːlz əvˊstˊelˊəndˊtuː ˊmɔlɪkjuːlz əvˊeɪtʃˊtuːˊou]

AcOH ↔AcO+ H

[ˊeɪ ˊsiːˊouˊeɪtʃ ˊfɔːm zən dɪzˊfɔːm dfrəm ˊeɪ ˊsiː ˊɔksɪdʒən ˊaɪən ˊplʌs ˊhaɪdrɪdʒən ˊaɪən]

AcO – acyloxy ion

ПРИЛОЖЕНИЕ 3

THE LIST OF CHEMICAL ELEMENTS WITH TRANSCRIPTION

Ag – argentum [ɑ:´dʒentəm] = silver [´sılvə] серебро

Al – aluminium [ælju´mınıəm] алюминий
Ar – argon [´ɑ:gɔn] аргон
As – arsenic [´α:s(ə)nık] мышьяк
Au – aurum [´ɔ:rəm]= gold [gould] золото
Ba – barium [b´ε(ə)rıəm] барий
Be – beryllium [bə´rılıəm] бериллий
Bi – bismuth [´bızməθ] висмут
B – boron [´bɔ:rɔn] бор
Br – bromine [´broumi:n] бром
C – carbon [´kα:bən] углерод
Ca – calcium [´kælsıəm] кальций
Ce – cerium [´sı(ə)rıəm] церий
Cd – cadmium [´kædmıəm] кадмий
Cl – chlorine [´klɔ:ri:n] хлор
Co – cobalt [´koubɔ:lt] кобальт
Cr – chromium [´kroumıəm] хром
Cs – caesium [´si:zıəm] цезий
Cu – copper [´kɔpə] медь
F – fluorine [´flu(ə)ri:n] фтор
Fe – ferrum [´ferəm] = iron [´aıən] железо
Ga – gallium [´gælıəm] галлий
Ge – germanium [´dʒə:meınıəm] германий
H – hydrogen [´haıdrədʒən] водород
He – helium [´hi:lıəm]
Hg – hydrargyrum [haı´dra:dʒırəm] = mercury [´mə:kjurı] ртуть
I – iodine [´aıədi:n] йод
Ir – iridium [ı´rıdıəm] иридий
K – kalium [´keılıəm] калий = potassium [pə´taesıəm] калий
Li – lithium [´lıθıəm]литий
Mg – magnesium [maeg´ni:zıəm] магний
Mn – manganese [mæŋgə´ni:z] марганец

Mo – molybdenum [mə´lıbdənəm] молибден
N – nitrogen [´naıtrədʒ(ə)n] азот
Na – natrium [´neıtrıəm] = sodium [´soudıəm] натрий
Ne – neon [´ni:ɔn] неон
Ni – nickel [´nık(ə)l] никель
O – oxygen [´ɔksıdʒ(ə)n] кислород
P – phosphorus [´fɔsf(ə)rəs] фосфор
Pb – plumbum [´plʌmbəm] = lead [led] свинец
Pt – platinum [´plætınəm] платина
Pu – plutonium [plu:´tounıəm] плутоний
Ra – radium [´reıdıəm] радий
Rb – rubidium [ru:´bıdıəm] рубидий
S – sulphur [´sʌlfə] сера
Sb – antimony [´aentımənı] сурьма
Sc – scandium [´skændıəm] скандий
Se – selenium [sı´li:nıəm] селен
Si – silicone [´sılıkoun] кремний
Sn – stannum [´stænəm] = tin [tın] олово
Sr – strontium [´strɔntıəm] стронций
Te – tellurium [tə´l(j)u(ə)rıəm] теллур
Th – thorium [´θɔ:rıəm] торий
Ti – titanium [t(a)ı´teınıəm] титан
U – uranium [ju´reınıəm] уран
W – wolfram [´wulfrəm] = tungsten [´tʌŋstən] вольфрам
Zn – zinc [zıŋk] цинк
Zr – zirconium [zə:´kounıəm] цирконий

ПРИЛОЖЕНИЕ 4

Временные формы в действительном и страдательном залоге

ACTIVE VOICE											
Indefinite (неопределенное)			**Continuous** (длительное)			**Perfect** (завершенное)			**Perfect Continuous** (завершенно-длительное)		
Always, usually, sometimes, often, every day			Now, at 5 o'clock yesterday, when I came			Just, already, yet, ever, never, this weak, by, before			All my life, these two weak, for, since		
Инфинитив			**To be + Participle 1**			**To have + participle 2**			**To have been + Participle 1**		
To ask			To be asking			To have asked			To have been asking		
Действие как факт (обычное повторяющееся)			**Действие как процесс** (незаконченное, длящееся)			**Действие, предшествующее какому-то моменту, связанное с ним**			**Действие, начавшееся в прошлом**		
Present	Past	Future	Present	Past	Future	Present	Past	Future	Present	Past	Future
asks	asked	shall, will ask	am, is, are asking	was, were asking	shall, will be asking	has asked	had asked	shall, will have asked	has been asking	had been asking	shall, will have been asked
I go to the cinema every Sunday	I went to the cinema last Sunday	I shall go to the cinema next Sunday	I am reading now	I was reading from 4 o'clock till 6 o'clock	I shall be doing my homework at 5 o'clock to morrow	I have just written the letter	I had already written the letter when my brother came	I shall have written the letter before my brothers	She has been writing the letter for two hours already	She had been writing the letter for two hours by the time he came	She will have been writing the letter for two hours by time
Я хожу в кино каждое воскре-сенье	Я ходил в кино в прошлое воскре-сенье	Я пойду в кино в следующее воскресенье	Я сейчас читаю	Я читал с 4 до 6 часов	Я буду делать уроки в 5 часов завтра	Я только что написал письмо	Я уже написал письмо, когда пришел мой брат	Я напишу письмо прежде, чем придет мой брат	Она пишет письмо уже два часа	Она писала письмо уже два часа к тому времени, когда он пришел	Она будет писать письмо уже два часа к тому времени, когда он придет

PASSIVE VOICE									
Indefinite (неопределенное)			**Continuous** (длительное)			**Perfect** (завершенное)			
To be + Participle 2			**To be being + Participle 2**			**To have been + Participle 2**			
To be asked			To be being asked			To have been asked			
Present	Past	Future	Present	Past		Present	Past	Future	
Articles are translated every day	Articles were translated every day last year	Articles will be translated tomorrow	Articles are being translated now	Articles were being translated at 5 o'clock		Articles have just been translated	Articles had been translated by the end of the day	Articles will have been translated by the end of the day	
Статьи переводят каждый день	Статьи переводили каждый день в прошлом году	Статьи будут переведены завтра	Статьи сейчас переводят	Статьи переводили в 5 часов вечера		Статьи только что перевели	Статьи перевели к концу дня	Статьи переведут к концу дня	

СОДЕРЖАНИЕ

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