

**ГОСУДАРСТВЕННОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ ВЫСШЕГО
ПРОФЕССИОНАЛЬНОГО ОБРАЗОВАНИЯ
«Сибирский государственный медицинский университет
Федерального агентства по здравоохранению
и социальному развитию»**

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**ПРАКТИКУМ ПО АНГЛИЙСКОМУ ЯЗЫКУ ДЛЯ
СТУДЕНТОВ ФАРМАЦЕВТИЧЕСКОГО ФАКУЛЬТЕТА**

Учебно-методическое пособие

Томск
Сибирский государственный медицинский университет
2009

УДК 811.111:615.1](075.8)
ББК Ш143.21-9+Р11(2)р88я7
К 901

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К 901 Кулешова М.В. Практикум по английскому языку для студентов фармацевтического факультета: учебно-методическое пособие. - Томск: СибГМУ, 2009. – 84 с.

Пособие составлено в соответствии с утверждённой рабочей программой по учебной дисциплине «иностраные языки» для студентов фармацевтического факультета (специальность 060108 «Фармация»).

Данное учебное пособие предназначено для обучения студентов дневного и заочного отделений фармацевтического факультета. Целью данного пособия является: привить учащимся навыки чтения и понимания оригинальной литературы, связанной с широким профилем фармацевтических ВУЗов, подвести их к беспереводному пониманию читаемого, научить делать краткие сообщения в пределах изученного материала.

Утверждено и рекомендовано к печати на заседании объединённого учёного совета факультетов клинической психологии, психотерапии и социальной работы, экономики и управления в здравоохранении (протокол № 7 от 10 ноября 2008 г.) и Центральным методическим советом СибГМУ (протокол № 7 от 18 ноября 2008 г.)

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ПРЕДИСЛОВИЕ

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Практикум адресован в первую очередь студентам фармацевтических вузов и факультетов, изучающим базовый двухгодичный курс английского языка. Издание также рекомендуется для использования при обучении аспирантов и соискателей в курсе подготовки к сдаче экзамена кандидатского минимума по английскому языку. Пособие может заинтересовать широкий круг специалистов-фармацевтов, желающих свободно владеть навыками работы с англоязычной научной литературой.

Пособие состоит из десяти уроков и каждый урок делится на следующие разделы:

1. Подготовительные упражнения
2. Текст
3. Упражнения к тексту
4. Грамматические упражнения
5. Тесты для контроля знаний.

УРОК I

Текст: Pharmacy

Грамматика: to be, to have Simple tenses.

Подготовительные упражнения:

упр. I. Прочтите и переведите слова, используя знания латинского языка.

pharmacy, medicine, drug, compound, dispense, analyse, pharmacist, medicine, physician, prescribe, prescription, ingredient, manufacture, phenomenon, analysis.

упр. II. Соотнесите английские эквиваленты с русскими:

drug	фармацевтическая практика
	емкость, предусмотренная рецептом
dispensing	лекарство
practice of pharmacy	расфасовка
medicinal substance	лекарственное вещество
official description	фармакопейное описание
they lose to attract moisture	они теряют свойства
prescription container	притягивать влагу

Прочтите и переведите текст:

PRACTICE OF PHARMACY

Pharmacy is the science which treats of medicinal substances. 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.⁵ 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.

Physics is that science which treats of the phenomena associated with matter in general, especially its relation to energy. It generally treats of the constitution and properties of matter, mechanics, sound and light, heat, optics, electricity and magnetism.

Chemistry is that science which explains the composition of matter and the transformations which it undergoes. It has many divisions such as General Chemistry, dealing with basic principles and inorganic substances, Organic Chemistry, or the chemistry of carbon compounds, Qualitative Analysis, Quantitative Analysis, Physical Chemistry, Biochemistry and many other fields.

Botany is the science that treats of plants with reference to their structure, functions and classification.

Pharmacognosy is the science which embraces the history, source, cultivation, collection, preparation, distribution, identification, composition, purity and preservation of drugs of vegetable and animal origin.

Pharmacology is broadly defined as the science of drugs.

A Pharmacopoeia is a book containing a list of medicinal substances with description, tests and formulas for preparing preparations. The pharmacopoeial names of chemical substances do not always represent their chemical composition.

Упражнения:

упр. I. Найдите в тексте английские эквиваленты:

способ составления лекарственных веществ; способ расфасовки лекарственных веществ; заниматься фармацевтической практикой; готовые вещества; высокий профессиональный уровень; знание разных предметов; структура вещества; состав вещества; физические характеристики; порошок; измельченный в порошок.

упр. II. Дополните предложения словами из текста:

1. Both services demand ... knowledge and ... standards.

a) usual; b) prescribed; c) special; d) general; e) professional.

2. General chemistry deals with ... principles and ... substances.

a) physical; b) organic; c) basic; d) inorganic.

3. Pharmacognosy embraces the history and preservation of drugs ... origin.

a) vegetable; b) animal; c) chemical; d) medical.

4. The official description usual includes its ... properties.

a) general; b) physical; c) specific.

5. The ... names of chemical substances do not always represent their chemical composition.

a) general; b) specific; c) pharmacopoeial

упр. III. Задайте вопросы к подчёркнутым словам:

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

упр. IV. Ответьте на вопросы кратко:

1. Does pharmacy treat of medicinal substances? 2. Does the pharmacist compound and dispense medicines? 3. Does physics treat of the constitution and properties of matter? 4. Does pharmacopoeia contain a list of medicinal substances? 5. Does the official description include physical properties of the substances? 6. Do chemicals attract moisture?

Ознакомьтесь с теорией “to be”, “to have” и “Simple Tenses” в методическом пособии “Грамматика английского языка” и выполните упражнения по грамматике:

упр. I. Найдите предложения в простых временах:

1. We observe how the salts are dissolving in water. 2. Water has appreciable amounts of dissolved salts. 3. He makes experiments at every lesson. 4. We shall use all 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.

упр. II. Выберите правильную форму глагола “to be”

a) is; b) are; c) was; d) were; e) am

1. There ... 15 students in our group.

2. There ... two meetings last week.
3. Yesterday there ... the lecture in anatomy.
4. I ... talking over the phone when the porter knocked the door.
5. There ... many illustrated books in chemistry.
6. Who ... speaking?
7. I ... very sorry.
8. Our class ... over.

упр. III. Выберите правильную форму глагола “to have”:

1. My sister ... a toothache.
2. We ... special equipment in our laboratory.
3. Each medical college ... a chemical laboratory.
4. I ... the exam in organic chemistry last week.
5. Tomorrow I ... the test in Latin.

упр. IV. Выберите глагольную форму для перевода на английский язык:

1. Мы сдаем экзамены два раза в год.
a) take; b) are taking; c) will take.
2. Я учусь в медицинском университете на фармацевтическом факультете.
a) study; b) studied; c) have studied.
3. Он выполнил эксперимент два часа назад.
a) had carried out; b) carried out; c) carries.
4. В прошлом году у нас была практика на ботанической станции.
a) has; b) have; c) had.
5. В конце каждого года мы будем сдавать несколько экзаменов.
a) will take; b) takes; c) took.
6. Химическая реакция меняет состав и характерные свойства вещества.
a) will change; b) changes; c) changed.

упр. V. Выберите вспомогательный глагол:

1. ... you go to the library yesterday?
a) do; b) did; c) does; d) is; e) was.
2. Where ... you usually make experiments?
a) does; b) do; c) did; d) is; e) was.

3. When... you take examination in chemistry?

a) shall; b) will; c) did; d) does; e) do.

4. When... the lesson begin?

a) do; b) was; c) were; d) does; e) did.

5. ... they work at the chemist's shop in future?

a) do; b) will; c) does; d) did; e) was.

УРОК II

Текст: “Water”
Грамматика: Simple Tenses.

Подготовительные упражнения:

упр. I. Прочтите и запомните следующие слова:

а) u[ʌ] – thus, rust, substance, abundance, combustion.

u, eu, ui [ju:] – use, product distribute, neutron, nucleous.

ure [juə] – pure, impure, secure.

упр. II. Подберите пары синонимов:

to be sure, a great deal of, vapour, sufficiently, of course, a lot of, enough, fit, steam, suitable.

упр. III. Подберите пары антонимов:

impossible, wrong, undesirable, difficult, solid, possible, right, easy, liquid, desirable.

упр. IV. Подберите русские эквиваленты, соответствующие английским словам:

abundance	хорошо известно
fail to settle	отвечать требованиям
fundamental	распространение
has many points of interest	большой
to meet needs	удалить
to remove	несомненно
to be sure	не оседают
a matter of common observation	интересна во многих отношениях

Прочтите и переведите текст:

«Water»

The abundance of water in liquid, solid and gaseous state is a matter of common observation. Not only is water the most abundant

compound, but it is also very important for life. To be sure, life would be impossible without water.

From the chemical point of view water has many points of interest, for it enters into chemical reactions which are of fundamental importance. Not only does water react with many substances, but it has also a marked influence upon many chemical reactions.

For many purposes it is desirable that water should be pure. The purest natural water is rain. It would be wrong, however, to consider it as being really pure. Nor is ground water pure. It contains a great deal of impurities which fail to settle. Dissolved substances do not settle, nor do they evaporate with water, which makes their removal difficult.

One of the most important problems is to obtain water sufficiently pure to meet our needs⁸. The choice as to what process is to be used for purification of water depends upon the uses for which it is interested as well as the impurities it contains. Water used for steam boilers should be free from substances that cause corrosion and scale formation. Water for washing should, not contain substances that react with soap. When water is to be used for drinking it is necessary that the microbes which it may contain should be killed. To achieve this water which is to be purified is thoroughly filtered. Another way to purify water is to boil it.

None of these methods is fit for producing pure water in the chemical sense, since most of the soluble salts are unaffected by the treatment. To remove these and to prepare chemically pure water suitable for scientific use, we take advantage of the fact that water is easily changed to steam while most of the dissolved substances as already mentioned are not volatile. By condensing the steam, we are thus able to remove all the impurities except volatile. This process is called distillation. Distilled water has many uses, both in the laboratory and in industry, when even small quantities of impurities would be undesirable.

Упражнения:

упр. I. ОТВЕТИТЕ НА ВОПРОСЫ:

1. In what states does water occur?
2. Why is the water so important for life?
3. Why is not ground water pure?
4. What kind of water should be used for drinking?
5. What methods are used for purifying water?
6. Where is distilled water used?

упр. II. Переведите предложения с помощью данных английских слов:

1. Вода вступает во многие химические реакции. 2. Пузырьки растворенного воздуха улетучиваются из кипящего раствора. 3. Можно доказать, что воздух – это смесь. 4. Воздух можно разложить на составляющие его части. 5. Все газы сжигаются при температуре выше 273° .

1. Water; bubbles of “dissolved air”; one; air; all gases.

2. liquefy; can prove; escape; enters; can be separated.

3. Air to be a mixture; into a great deal of chemical reaction; into its components; from the boiling solutions; at temperature above 273° .

упр. III. Переведите с английского языка на русский:

a marked influence, for many purposes, to fail, to settle, to be of fundamental importance, from the chemical point of view, to have many points of interest, to take advantage of.

“Simple Tenses”

Ознакомьтесь с теорией “Simple Tenses” в методическом пособии «Грамматика английского языка» и выполните упражнения по грамматике:

упр. I. Поставьте предложения в вопросительную форму в простом настоящем времени.

Model: 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.

упр. II. Выберите правильные предложения:

a) She carries out experiments last week;

She carries out experiments every week;

b) I graduated from the pharmaceutical faculty in 3 years;

I shall graduate from the pharmaceutical faculty in 3 years;

c) Chemistry very important for the students of the pharmaceutical faculty;

Chemistry is very important for the students of the pharmaceutical faculty;

d) What specialists pharmaceutical faculty prepare?
What specialists does pharmaceutical faculty prepare?

упр. III. Постройте отрицания выбрав правильную форму:

- 1) This element ... occur in nature in free state.
a) do not; b) does not.
- 2) He ... a member of the analytical chemistry circle.
a) is not; b) do not; c) are not.
- 3) This substance ... act as a catalyst.
a) do not; b) are not; c) does not.
- 4) They ... a new reagent in their experiment.
a) does not use; b) did not use; c) is not used.
- 5) We ... this metal with sulphuric acid to obtain hydrogen yesterday.
a) did not treat; b) do not treat; c) does not treat.
- 6) The researchers ... new substances last week.
a) did not obtain; b) does not obtain; c) were not obtain.

Тест

Test your grammar

Test I. Present Simple.

1. How much ... this sweater cost?
2. How much ... this sweater?
a) is; b) does; c) do
3. It ... rainy in summer.
4. It ... often rain in summer
a) don't; b) doesn't; c) isn't.
5. I ... stay at home on Sundays.
6. I ... at home on Sundays.
a) am not; b) doesn't; c) don't.
7. He ... have much money.
8. He ... rich.
a) isn't; b) doesn't; c) don't.
9. May and her sister ... live in Rome.
- 10 May and his sister ... in Rome.
a) aren't; b) doesn't; c) don't.
11. Pat's mother ... teach students.
12. Pat's mother ... a teacher.

a) isn't; b) doesn't; c) don't.

13. It ... cost much to stay at that hotel.

14. That hotel ... expensive.

a) doesn't; b) isn't; c) don't.

Keys Test I

1) does 3) c 5) c 7) b 9) c 11) b 13) a

2) is 4) b 6) a 8) a 10) a 12) a 14) b

Test 2. Past Simple.

1. There isn't a cloud in the sky, but it (be) cloudy in the morning.
2. Mrs. Clay usually finishes her work at half past three, but she (finish) it later yesterday afternoon.
3. Every day I help Mom about the house, but last week I was very busy with my exam so I (not/help) her much.
4. Tom isn't playing tennis tomorrow afternoon he (not play) tennis yesterday.
5. We generally have lunch at 12.30, but yesterday we (have lunch) later.
6. Now my brother smokes a lot but he (not smoke) before.
7. The Frasers live in a four-room apartment but last year they (live) in a small house in the country.
8. I don't eat meat at all, but the other day I visited my friends and (eat) pork there.
9. My Dad always goes to work by car, but last week he (go) to work on foot.
10. the weather is nice today, but it (be) bad yesterday.
11. We rarely watch television, but last week we (watch) a lot of interesting programmes.
12. Do you often see Tom? – Not often, but I (see) him at the party the other day.
13. I (get) to the market myself last time, but now I don't remember how to get there.

Test 3. Future Simple.

1. I'm tired, I (go) to bed.
2. It's late. I think I (take) a taxi.
3. ... I (answer) the question?
4. We don't know their address. What we (do)?
5. Our test (not/take) long.
6. I'm afraid they (not/wait) for us.
7. Draw (come) to the party tomorrow?
8. You (arrive) in Paris tomorrow evening.
9. The boy (remember) this day all his life.
10. Perhaps they (buy) a new house this year.
11. He (be) fourteen next year.
12. I'm not sure I (find) him at the hotel.
13. We (not/book) the tickets in advance.
14. Do you think it (rain)?
15. Everybody thinks they (not/get) married.
16. There (not/be) any wars in the world.
17. Dad (present) Mag a personal computer.
18. ... there (be) drugs for every kind of disease in 50 years time?

УРОК III

Текст: Compounds of sodium and potassium.
Грамматика: Simple Tenses in Passive Voice.

Подготовительные упражнения

упр. I. Выучите произношения следующих слов:

alkali	['ælkəlaɪ]
lithium	['liθiəm]
sodium	['sədiəm]
potassium	[pə'tæsɪəm]
rubidium	['ru:biðiəm]
caesium	['si:ziəm]
oxygen	['ɒksɪdʒ(ə)n]
hydrogen	['haɪdrɪdʒ(ə)n]
hydroxides	[haɪ'drɔksaɪds]
chloride	['klɔ:rid]

упр. II. Образуйте существительные с помощью суффикса -tion.

Model: eliminate – elimination.

Oxidate, distribute, calculate, concentrate, precipitate, titrate, indicate.

упр. III. Соотнесите английские эквиваленты с русскими:

precipitation	окисление
concentrate	распределение
oxidation	насыщать
decompose	расчет
distribution	осадок
indicate	указывать
saturate	сконцентрировать
calculation	разлагать на части

Прочтите и переведите текст.

COMPOUNDS OF SODIUM AND POTASSIUM

The alkali metals - lithium, sodium, potassium, rubidium, and caesium - which fall in Group I of the Periodic Classification, are the most strongly electro-positive elements known. They are all univalent, and their compounds are soluble in water. The metals themselves are distinguished by their great affinity¹ for oxygen. They undergo oxidation rapidly on exposure to air, and decompose water readily in the cold, with evolution of hydrogen and formation of soluble, strongly alkaline hydroxides. All these characteristics are most marked in caesium, and least in lithium.

Sodium and potassium compounds are widely distributed and abundant. Lithium compounds are found in comparatively small quantities, and rubidium and caesium are decidedly rare elements. The compounds of sodium and potassium are very widely employed in pharmacy, and corresponding compounds of the two metals are similar in therapeutic action.

Compounds of sodium. The chief naturally occurring compound of sodium is the chloride, NaCl, which is present in sea-water to the extent of 2 to 3 per cent, and is also found as rock salt. The manufacture of sodium carbonate, sodium bicarbonate, and sodium hydroxide forms the chief branch of the great alkali industry. Most of the sodium salts used in pharmacy are made from the carbonate or hydroxide.

Sodium hydroxide. Contains not less than 95.0 per cent of total alkali, calculated as NaOH, and not more than 2.5 per cent of Na₂CO₃. Sodium hydroxide is manufactured by heating sodium carbonate with water and lime in large iron tanks.

Most of the sodium carbonate produced at the present day is manufactured by the ammonia-soda process.. The principle of the method is simple. Strong brine containing a high concentration of ammonia is passed through a "carbonating tower"⁴ where it is saturated with carbon dioxide under pressure. The ammonia and carbon dioxide decomposition with the sodium chloride causes the precipitation of sodium bicarbonate, which is not very soluble in water, and is still less soluble in brine.

Notes:

1. affinity – химическое сродство. Здесь: эти металлы распознаются по их свойству легко соединяться с кислородом.
2. on exposure to air – под действие воздуха.
3. iron tanks – металлические емкости.
4. carbonating tower – углеродная колонка.

Упражнения:

упр. I. Найдите правильные утверждения:

1. The alkali metals in Group I of the Periodic Classification are the most strongly electro-positive elements known.
2. All of them don't undergo oxidation rapidly on exposure to air and decompose water readily in the cold.
3. All of the characteristics are most marked in caesium and potassium.
4. The manufacture of sodium carbonate, sodium bicarbonate and sodium hydroxide forms the chief branch of the great alkali industry.
5. The ammonia and carbon dioxide decomposition with the sodium chloride causes the precipitation of sodium bicarbonate, which is very soluble in water.

упр. II. Переведите предложения с помощью данных английских эквивалентов:

1. Щелочные металлы быстро окисляются под действие воздуха.
 2. Соединения натрия и калия очень распространены в природе.
 3. Соединения лития находятся в очень небольшом количестве.
 4. Гидроксид натрия получают нагреванием карбоната натрия с водой и известью в больших металлических емкостях.
 5. Разложение аммиака и двуокиси углерода вызывает осаждение бикарбоната натрия.
1. The alkali metals; the ammonia and carbon dioxide decomposition; lithium compounds; sodium and potassium compounds.
 2. Sodium hydroxide; are widely distributed; is manufactured by; causes; are found.
 3. Undergo oxidation rapidly; the precipitation of sodium bicarbonate; on exposure to air; in nature; heating sodium carbonate

with water and lime in large iron tanks; in comparatively small quantities.

упр. III. Ответьте на вопросы:

1. Are lithium, sodium, potassium and caesium the alkali metals?
2. Do these metals fall in Group 2 of the Periodic Classification?
3. These metals undergo oxidation rapidly on exposure to air, don't they?
4. Are most of the sodium salts used in pharmacy made from the carbonate and hydroxide?
5. Is the principle of the manufacturing method difficult?

Ознакомьтесь с темой "Simple Tenses in Passive Voice" в методическом пособии «Грамматика английского языка» и выполните упражнения:

упр. I. Выберите правильную форму сказуемого Present, Past and Future Simple

1. The compounds of sodium and potassium very widely (to employ) in pharmacy.
a) will be employed; b) are employed; c) were employed.
2. The methods (to introduce) pharmaceutical industry some years ago.
a) is introduce; b) were introduced; c) was introduced.
3. The experiment (to carry out) in two months.
a) is carried out; b) was carried out; c) will be carried out.
4. I think the reaction (to follow) by temperature rise.
a) are followed; b) will be followed; c) is followed.
5. Most of the sodium salts (to use) in the future.
a) are used; b) were used; c) will be used.

упр. II. Составьте предложения в Simple Passive:

Model: to be written – The letter was written by him yesterday.

- 1) to be found; 2) to be distributed; 3) to be used; 4) to be called; 5) to be manufactured.

упр. III. Выберите правильную форму сказуемого:

1. Many experiments ... by pharmaceutical students yesterday.
a) was carried out; b) has been carried out; c) were carried out.

2. At the end of our practice many medicinal plants ... at the botanical stations.

a) has collected; b) were collected; c) collected.

3. Pharmacy ... as the science of recognizing, identifying, selecting, preparing and compounding substance.

a) is defined; b) defines; c) defined.

4. Some preparations ... to primitive men.

a) is known; b) will be known; c) were known.

5. It is known that morphine ... from opium in 1906.

a) was isolated; b) isolated; c) has been isolated.

упр. IV. Найдите предложения в Simple Passive:

1) He arranged elements according to definite system. 2) Water for washing contains some substance. 3) Most of the sodium salts which are used in pharmacy are made from carbonate or hydroxide. 4) Mendeleev D.I. was a great scientist. 5) Chloride was found in rock and is also present in sea-water. 6) Sodium and potassium compounds are of same importance for alkali industry.

УРОК IV

Текст: Aspirin.

Грамматика: Imperative sentences. Modal verbs.

Подготовительные упражнения

упр. I. Прочтите следующие химические измерения:

1/2 – a half;

2/3 – two-thirds

4/9 – four-ninths

0.5 gm – naught point five grams

0.01 % – naught point two naught one percent

2 ml – two milliliters

6⁰ – six degrees Centigrade

0⁰ – zero

-2⁰ – minus two degrees; two degrees below zero

+3 – plus three degrees; three degrees above zero

mol. vol. – molecular volume

упр. II. Распределите слова по группам в соответствии с их суффиксами:

verb	noun	adjective
-ate-	-ment-	-able-
-y-	-ency-	-ae-
-en-	-ion-	-ive-
-fy-	-ion-	-ant-
	-er-	-y-
	-age-	-ant-
	-y-	-y-
		-tue-

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.

упр. III. Соотнесите английские эквиваленты с русскими:

storage	доводить водой до 15 мл.
test for identity	нейтрализованный по фенолфталеину
property	взболтать
make up with water to 15 ml	свойство
neutralized	against хранение
phenolphthalein	
shake	проба на идентичность
standard solution	окислять
cool	стандартный раствор
acidify	охлаждать
ammonium ferric alum	тяжелые металлы
heavy metals	двойная соль аммония и железа

Прочтите и переведите 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). 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 phenolphthalein⁴ 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.

упр. I. Переведите глаголы в повелительных предложениях:

to boil, to dissolve, to acidify, to shake, to filter, to dilute, to cool, to add.

Model: (взболтайте) the contents of the flask for a minute – shake the contents of the flask for a minute.

1) (Разбавьте) the filtrate to 1 liter and stir it in an orange-coloured bottle. 2) (Окислите) the contents by the addition of 25 ml of dilute hydrochloric acid. 3) (Вскипятите) 0.5 gm of the preparation in 5 ml of sodium hydroxide solution for 3 minute. 4) (Добавьте) to both cylinders 1 ml of 0.5 per cent acid solution of ammonium ferric alum. 5) (Растворите) 0.1 gm of picric acid in water solution. 6) (Охлаждайте и профильтруйте) the obtained solution.

упр. II. Дополните предложения, используя данные 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 ...

упр. III. Выберите правильный ответ:

1. Is aspirin readily soluble?
a) Yes it is. b) No it doesn't.
- 2) Does the solution possess any about?
a) Yes, he is; b) Yes, it does.
- 3) A white crystalline precipitate appears, doesn't it?
a) Yes, it is; b) Yes, it does.
- 4) Is the assay made at a temperature not above 40⁰ C?
a) Yes, it is; b) No, it doesn't; c) No, it isn't.
- 5) The melting point is 133 – 136, isn't it?
a) No, it doesn't; b) Yes, it is.

Ознакомьтесь с темой «Modal verbs» в методическом пособии «Грамматика английского языка» и выполните упражнения.

упр. I. Переведите слова в скобках, используя модальные глаголы.

- a) may; b) must; c) should.
1. Let's wait for her. She (возможность) be on her way.
 2. You (следовало) have started the treatment earlier.
 3. You (нельзя) not smoke.
 4. The doctor (должно быть) be making a round of the district.
 5. Your sister often complains of a headache. She (следует) consult a neurologist.
 6. This patient (возможно) have already undergone the necessary examination.
 7. One (нужно) stay in bed and follow the prescribed treatment not to get complications.
 8. (Можно) I listen to your heart?
 9. You (должен) take the medicine regularly to be well again.
 10. You (должен) begin to take care of your health from childhood.

упр. II. Дополните предложения соответствующими модальными глаголами:

1. Yesterday the students ... purify the solution.

2. He ... give an example of a light heavy element.
3. ... all salts dissolve in water?
4. The teacher told us what substances ... accelerate biochemical processes.
5. Next time we ... to alter the experimental conditions.
6. In an hour the students ... to slow down this reaction.

упр. III. Заполните пропуски модальными глаголами.

1. We ... treat the material with alcohol.
2. Next time you ... repeat the experiment.
3. You ... prepare everything necessary for the experiment.
4. We ... regulate the temperature conditions.
5. To obtain the desired results our students ... to change the experimental conditions.
6. In your work you ... use the chemically pure substances.

Тест

Test your grammar.

Test I. Special questions.

1. After lunch you phoned someone
 - A. Who rang you.
 - B. Who did you ring?
2. The policemen is interviewing the robber.
 - A. Who is interviewing the robber?
 - B. Who is the robber interviewing?
3. ... is it from here to St. Petersburg?
 - A. How far.
 - B. How long.
4. ... would you like to drink?
 - A. Which.
 - B. What.
5. ... of brothers Grimm was the eldest?
 - A. Who.
 - B. What.
6. It's so cold today ... put on your warm coat?
 - A. Why you haven't.
 - B. Why haven't you.
7. ... birthday is it today? It's Janet birthday today, she is 19.
 - A. Which.

- B. Whom.
- C. What.
- D. Whose.

8. ... does it cost to stay at the Hilton Hotel?

- A. How many.
- B. How much.
- C. What.

9. ... is Pam's sister? She's a secretary at our college.

- A. What.
- B. Who.
- C. Where.

10. You can have a photo ... one would you like?

- A. What.
- B. Which.

11. Tell me something about Fred's wife. Oh, she's about 25, she's pretty and friendly.

- A. What is she?
- B. What does she like?
- C. What is she like?
- D. Who is she?

12. – ... will it take me to learn English?

– I think you'll be able to speak in another few months.

- A. How much.
- B. How long.
- C. What.

13. Bob and Alice got married in 1991.

- A. How long.
- B. When.

Test 2. Modal verbs.

1. You will ... speak Spanish in another few months.

- A. can. C. be able to
- B. have D. ought

2. I'd like ... skate.

- A. to can C. to have to
- B. to be able to D. could

3. Nobody answers the phone. They ... be out.

- A. should C. can
- B. would D. must

4. I'm sorry, I ... have phoned to tell you I was coming.
 A. should C. had to
 B. ought D. could
5. To my mind, the government ... take care of old people.
 A. ought C. must
 B. need to D. may
6. I ... get up early on Mondays.
 A. am able C. must
 B. have to D. may
7. The policeman told the woman she ... worry.
 A. needn't C. couldn't
 B. needn't to D. mustn't
8. ... you mind passing me the salt?
 A. will C. could
 B. should D. would
9. As ... you remember, I was always interested in scientific experiments.
 A. may C. must
 B. hav to D. ought to
- 10 Little children like books with large print. They ... read them more easily.
 A. should C. can
 B. must D. have to
11. I speak to Jane, please?
 A. could C. must
 B. shall D. ought
12. My dentist says I ... eat so many sweets.
 A. needn't C. ought not
 B. mustn't D. shouldn't
13. – Why hasn't Mr. Grill got in touch with us?
 – I don't quite know. It ... be that he has lost our phone number.
 A. may C. must
 B. ought D. should
14. – Liz seems to be avoiding you.
 – I can't tell you for certain she... have been hurt by my words about her boyfriend.
 A. should C. might
 B. must D. needn't

Keys

Test 1.

- | | |
|-------|--------|
| 1. B. | 8. B. |
| 2. A. | 9. A. |
| 3. A. | 10. B. |
| 4. B. | 11. C. |
| 5. C. | 12. B. |
| 6. B. | 13. C. |
| 7. D. | |

Test 2.

- | | |
|-------|--------|
| 1. C. | 8. D. |
| 2. B. | 9. A. |
| 3. D. | 10. C. |
| 4. B. | 11. A. |
| 5. C. | 12. D. |
| 6. B. | 13. A. |
| 7. A. | 14. C. |

УРОК V

Текст: Chemistry and human health.
Грамматика: Simple and Progressive Tenses
in Active and Passive Voices.

Подготовительные упражнения

упр. I. Прочтите и переведите предложения, используя данные словосочетания:

according to – согласно в соответствии

1. According to the theory of atomic disintegration, ordinary atoms are supposed to be a small intricate systems linked by tremendous power.

2. Elements are classified according to their valence and also according to many other properties.

3. Mendelejev arranged the elements according to their magnitude of their atomic weight.

a great deal – много

1. Water contains a great deal of impurities which fail to settle.

2. Now we know a great deal of about the structure of atoms.

as compared – в сравнении

1. The electrons and the nucleus are very small as compared with the size of the atom.

2. Oxygen is twice as soluble as compared to nitrogen.

3. Hydrofluoric acid is a relatively weak acid as compared with the binary acids of the other elements.

упр. II. Сгруппируйте слова в соответствии с частью речи:

nouns	adjective	verb
-y-	-able-	-ize-
-ure-	-al-	-ate-
-tion-	-ous-	-en-
-ance-	-ant-	
	-ic-	

various, mixture, important, valuable, characterize, application, electrolytic, difficulty, instance, solubility, differentiate, abundance, penetrate, inorganic.

упр. III. Найдите подлежащие в предложениях:

1. The fine traditions of Russian chemistry date back to the period when the foundation of the Russian chemical science was laid.

a) traditions b) date, c) foundation.

2. The objects of modern chemical sciences deal with range from celestial bodies to microorganisms.

a) objects; b) science; c) range.

упр. IV. Подберите русские эквиваленты для подчёркнутых слов:

1) Numerous trends of modern chemical science largely determine the prospects of world science and technology.

a) велико; b) в основном; c) во многом.

2) Geochemistry can hardly be called a trend of 20th century chemistry, but rather a hybrid science of geology and chemistry.

a) трудно; b) тяжело; c) едва ли.

упр. V. Определите сказуемое в главных предложениях:

1) The physical laws that underline the architecture of the Periodic System are strict.

a) underline; b) are strict.

2) The Periodic Table came under furious attack, for much in it required explanation.

a) required; b) came; c) attack.

3) He found the properties of every eightth element to resemble those of the first one.

a) resemble; b) found.

4) The scientist investigated the methods of simplified and speedy analyses which had been discovered many years ago.

a) investigated; b) had been discovered.

упр. VI. Выберите ряд, где все слова являются прилагательными:

a) furious, different, unexpected, high, pride, bird.

b) skeptical, unfamiliar, precise, number, law.

c) essential, artificial, successful, easier, happy, mysterious.

Прочтите текст и выполните упражнения

CHEMISTRY AND HUMAN HEALTH

Plastics, synthetic fibres and materials are becoming firmly established in medicine, helping physicians to combat many diseases. Chemistry in the health services stands for highly effective medicines, blood substitutes, artificial organs, plastic teeth, hearing aids, etc. Today over 3,000 medical items are made from polymers in our country.

Plastics are used especially widely in orthopaedy. Artificial fingers and hands are formed from elastic plastics.

Otharyngologists, using the experience of their Czechoslovak colleagues, are making an artificial middle ear (среднее ухо) out of plastic. It consists of an eardrum (барабанная перепонка) made of a polymer, with a special feeler which conveys the oscillations to the internal ear. This artificial eardrum improves hearing very much. Patients who previously could only hear words spoken from a distance of 20 - 30 cm, can hear ordinary conversation 10-12 metres away from them, after an artificial middle ear is installed.

Chemistry is widely employed in dentistry. Plastic teeth are durable, comfortable, light, hygienic and retain the colour of natural teeth. The Kharkov plant for making dentistry materials has developed a highly effective self-hardening plastic for making artificial teeth. Plastics as hard as metals are produced for fillings (пломбы). They are nearly natural in colour and become very firmly attached to the tooth. These fillings will never fall out.

Chemistry gives our people not only modern machinery, additional millions of tons of grain and agricultural products, but it also assists our doctors in their noble work of prolonging human life and of maintainins man's health and ability to work.

упр. I. Выберите утверждения, соответствующие тексту :

1. Chemistry is widely employed now and we can't imagine our life without it.

a) true; b) false.

2. Plastics do much harm to human health and we try to avoid its usage in our life.

a) true; b) false.

3. Plastics, synthetic fibres help physicians to combat many diseases.

a) true; b) false.

4. Chemistry assists our doctors in their noble work and maintains man's ability to work.

a) true; b) false.

упр. II. Выберите соответствующий вспомогательный глагол:

1) ... chemistry help the doctors to prolong human life?

a) do; b) does; c) is.

2) Plastics are used especially widely in orthopaedy,?

a) isn't it; b) don't they; c) aren't they.

3. ... many medical items made from polymers in our country?

a) is; b) were, c) are.

4. What ... widely used in dentistry?

a) do; b) are; c) is.

упр. III. Образуйте степени сравнения прилагательных:

Model 1: large – larger – the largest:

wide, high, clean, few, clever,

Model 2: difficult – more difficult – the most difficult:

important, interesting, accurate, comfortable.

упр. IV. Ответьте кратко:

1) Do we widely use chemical materials in our life?

a) No, they don't; b) Yes it is; c) yes, we do.

2) Does chemistry give the possibility to grow million of tons of grain?

a) Yes, it has; b) Yes, it does; c) Yes, it is.

3) Are highly effective medicine, blood substance, artificial organs, plastic teeth, hearing aids made with the help of chemical materials?

a) Yeas they do; b) Yes they are; c) No it didn't.

4. Can we imagine our life without chemistry?

a) Yes we can; b) No we don't; c) No we can't.

Ознакомьтесь с темой “Progressive Tenses” в методическом пособии «Грамматика Английского языка» и выполните упражнения.

упр. I. Подчеркните предложения в продолженных временах.

1) We observe now 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) He calculated the amounts of substance contained in water. 5) We made many important observations last year. 6) The analyst is determining the properties of the ore now.

упр. II. Заполните пропуски соответствующим глаголом:

1. Water ... abundantly in minerals.
a) is occurring; b) occure; c) occurred.
2. He ... water into a test-lube now.
a) pours; b) poured; c) is pouring.
- 3) The students ... in the experiment at present.
a) take part; b) are taking part; c) took part.
- 4) Water ... an important constituent of the earth's atmosphere.
a) are; b) was; c) is.
- 5) The analyst ... still in the laboratory.
a) was working; b) work; c) is working.
- 6) When I entered the room the students ... their work.
a) finished; b) are finishing; c) were finishing.

упр. III. Выберите правильную форму глагола:

1. Мы сдаем экзамены 3 раза в год.
a) take; b) are taking.
- 2) Сейчас я учусь в медицинском университете на фармацевтическом факультете.
a) study; b) am studying.
- 3) Он выполнил эксперимент 2 часа назад.
a) was carried out; b) carried out.
4. В прошлом году в это время у нас была практика в ботаническом саду.
a) had; b) were having.
5. Сейчас он нагревает крахмал с разбавленной серной кислотой.
a) heat; b) is heating.

6. Не ходите туда! Там, в химической лаборатории исследователи проводят опасный эксперимент.

a) perform; b) are performing.

7. Они проводят эксперименты с различными химическими соединениями каждую неделю.

a) make; b) are making.

8. Мы использовали новое оборудование на прошлой неделе.

a) were using; b) used.

упр. IV. Дополните предложения соответствующим наречием:

1) I am mixing compounds.

a) right now; b) for two days; c) every day.

2) We have lectures in botany.

a) since morning; b) now; c) every week.

3) He passed a credit test in chemistry.

a) tomorrow; b) today; c) yesterday.

4) We are doing exercises.

a) today; b) at the moment; c) usually.

5) We finished the last experiment in chemical laboratory.

a) now; b) sometimes; c) two days ago.

упр. V. Измените глаголы в Present, Past and Future Continuous:

Model: he plans – he is planning.

he does, they are asked, they make, he found, we will finish, the test was taken.

Тест

Now test your grammar.

Test 1. Present Simple / Present Progressive.

A – right;

B – wrong.

1. Tom is in his room. He plays the piano.

2. Jill is speaking five languages.

3. I am looking for my glasses. Where are they?

4. My brother is smoking 20 cigarettes a day.

5. I am not understanding what he is speaking about.

6. John is tired, so he has a short sleep.

7. The man in the dark grey coat is looking like Tom Jarrett.

8. He doesn't like Ballroom dancing.

9. I'm looking out of the window, but I'm not seeing him.
10. I'm remembering that holiday we had in France a few year ago.
11. How much is it costing to send a letter to Paris?
12. My parents are never drinking strong coffee.
13. I hate big cities.
14. The play is beginning at half past seven.
15. What are you thinking of that novel?
16. What are you thinking about?
17. I am hoping Mad comes out of hospital soon.

Test 2. Present Simple / Present Progressive.

1. It (often / rain) in this part of the world.
A. is often raining.
B. often rains.
2. Take your umbrella. It (rain) cats and dogs
A. rains.
B. is raining.
3. Granny is in the kitchen. She (make) a plum-cake.
A. is making.
B. makes.
4. My wife (often / make) plum-cakes.
A. is often making.
B. often makes.
5. Can you phone a bit later, please? Jane (have a bath).
A. is having a bath.
B. has a bath.
6. Run downstairs. Your sister (wait) for you.
A. is waiting.
B. waits.
7. I don't know Spanish, but I (learn) it now.
A. am learning.
B. learn.
8. John (still / work) in the garden.
A. is still working.
B. still works.
9. Dad (usually / work) on Saturdays.
A. is usually working.
B. usually works.
10. Usually I (have coffee) in the morning, but now I (drink) tea.

- A. am having coffee. A. drink
 B. have coffee B. am drinking
11. We (sometimes / go) to the cinema.
 A. are sometimes going.
 B. sometimes go.
12. What she (do)? – She is a secretary at our college.
 A. is she doing.
 B. she does.
 C. does she do.
13. Why you (sit) at my desk? Could you take you place, please?
 A. why you are sitting.
 B. why do you sit.
 C. why are you sitting.
14. We've got tickets, and tomorrow evening we (go) to the cinema.
 A. go.
 B. are going.
15. – ... you (do) anything tomorrow afternoon?
 – I (play) tennis with my friend.
 A. are you doing A. am playing
 B. do you do B. play.

Test 3. Past Progressive/ Past Simple.

1. I saw a light in your window as I (pass) by.
 A. passed.
 B. was passing.
2. Yesterday as I was walking down Cherry Lane, I (meet) Thomas, an old friend of mine.
 A. met.
 B. was meeting.
3. Liz's elder brother said that he (go) to enter Leeds University.
 A. went.
 B. was going.
4. While my son (wait) for call, somebody knocked at the door.
 A. waited.
 B. was waiting.
5. We (just / talk) about him when he suddenly (come) in.
 A. just talked. A. came in.
 B. were just talking. B. was coming in.
6. Yesterday while dad (shave) he (cut) himself slightly.

8. A.
9. B, don't see.
- 10 B, remember.
11. B, does it cost.
12. B, never drink.
13. A.
14. B, begins.
15. B, do you think.
16. A.
17. B, I hope Mag comes out / will come out of hospital soon.

Test 2.

- | | |
|-------|-----------|
| 1. B. | 9. B. |
| 2. B. | 10. B, B. |
| 3. A. | 11. B. |
| 4. B. | 12. C. |
| 5. A. | 13. C. |
| 6. A. | 14. B. |
| 7. A. | 15. A, A. |
| 8. A. | |

Test 3.

1. B.
2. A.
3. B.
4. B.
5. B, A.
6. B, A.
7. B, B.

Test 4.

1. B.
2. A.
3. B.
4. B.
5. A.
6. A.
7. B.

УРОК VI

Текст: Carbohydrates.
Грамматика: Perfect Active and Passive.

Подготовительные упражнения

упр. I. Прочтите и переведите упражнения с данными словосочетаниями:

at least- по крайней мере

1. Arsenic occurs in at least three allotropic forms.
2. There are believed to exist at least two modifications of sulphur.
3. A piece of granite which consists of a mixture of at least four constituents is heterogeneous.

deal with-иметь дело с

1. Both chemistry and physics deal with matter and energy.
2. Qualitative analyses deal with the determination of different kinds of substances.
3. Inorganic chemistry deals with substances obtained directly or indirectly from minerals, ores and similar sources.

упр. II. Образуйте существительные от прилагательных с помощью суффикса- ity-.

Model: complex- complexity

Soluble, responsible, changable, possible, contactible, acid

упр. III. Определите сказуемое в следующих предложениях:

1. Silicon like carbon has the capacity to gain four electrons and form four covalent bonds.

- a) like
- b) has
- c) to gain
- d) to form

2. In many cases the exact role played by silicon, tin and vanadium would remain unknown or unclear.

- a) played
- b) would remain
- c) unknown

3. The remaining 20 elements now thought to be essential for life account for less than 7 per cent of the body's atoms.

- a) remaining
- b) thought to be
- c) account

4. Hydrogen and oxygen account for 88.5 per cent of the human body, hydrogen supplying 63 per cent of the total and oxygen 25.5 per cent.

- a) account
- b) supplying

упр. IV. Сгруппируйте слова в соответствии с частью речи:

noun	adjective	adverb			
ability,	quantitative,	namely,	abundance,	abundant,	inspector,
exactly,	scientific,	incomparably,	infrequently,	variety,	various,
wonderful,	representative,	feature,	foundation,	inexhaustible.	

упр. V. Найдите ряд в котором только прилагательные:

- a) vivid, entire, sensitive, associative, lifeless
- b) cloudless, noticeable, graduate, available, mightly
- c) unexpected, smallness, odourless, immense, specific, synthetic, violate.

Прочтите и переведите текст

Carbohydrates

Carbohydrates are compounds containing the elements of carbon, hydrogen and oxygen, the last two elements being usually present in the proportion in which they are found in water. The group includes sugars of different degrees of complexity and polysaccharides such as starch, inulin and cellulose.

Sugars which contain from three to nine carbon atoms form monosaccharides, those with five and six carbon atoms (pentoses and hexoses) being the most important.

Polysaccharides are derived from sugar molecules by condensation with the elimination of water.

Sugars are readily soluble in water and in general can be induced to crystallize only with difficulty and after careful purification. They

have a sweet taste. Of the polysaccharides inulin is soluble in warm water but the more complex cellulose is insoluble.

All carbohydrates give a violet colour when treated with alphanaphthol followed by concentrated sulphuric acid. The test may be applied either to a solution or in the case of an insoluble carbohydrate to its suspension in water. Some carbohydrates are reducing. Non-reducing carbohydrates such as sucrose and the polysaccharides can be hydrolyzed by boiling for about half an hour or more with a little dilute acid. After neutralizing them with an excess of caustic soda, it will be found that reducing sugars have been produced. Pentose sugars when boiled with concentrated hydrochloric acid containing a little phloroglycinol give a red colour. The process of hydrolysis is a reversible one and more complex carbohydrates are synthesized in the plant from sugar units. In addition there are some relatively rare desoxy sugars which have so far only been found in nature in cardiac glycosides. These desoxy sugars contain one or two oxygen atoms fewer than the corresponding carbohydrates with six carbon atoms. They include rhamnose, digitoxose, and cymarose.

упр. I. Определите правильное утверждение или нет:

1. Carbohydrates are compounds which consist of two elements.
 - a) True
 - b) False
2. Sugars contain from three to nine carbon atoms and are readily soluble in water.
 - a) True
 - b) False
3. Non-reducing carbohydrates such as polysaccharides can't be hydrolyzed by boiling.
 - a) True
 - b) False
4. Polysaccharides are derived from sugar molecules by condensation with the elimination of water.
 - a) True
 - b) False

упр. II. Выберите правильную форму глагола:

1. Today the laboratory (produced, has produced) more complex carbohydrates.
2. They (solved, have solved) that problem two years ago.
3. He just (completed, has completed) his investigation.
4. At present production of synthesized carbohydrates (developed, has developed) into a new industry.
5. She (hasn't worked, didn't work) at this problem since she left the Institute.
6. The method (developed, was developed) at that Institute.

упр. III. Ответьте кратко:

1. Do carbohydrates contain elements of carbon, hydrogen and oxygen?
 - a) Yes, they are .
 - b) Yes, they do.
2. All carbohydrates fall in group of sugars, don't they?
 - a) Yes, they are.
 - b) Yes, they do.
3. Can non-reducing carbohydrates be hydrolyzed by boiling with a little dilute acid?
 - a) Yes, it is..
 - b) Yes, they can.
4. Is the process of hydrolysis of carbohydrates a reversible one?
 - a) No, it isn't.
 - b) Yes, it is.
5. Can polysaccharides be derived from sugar molecules without condensation?
 - a) Yes, they do.
 - b) No, they can't.

Ознакомьтесь с темой Perfect Tenses in Active and Passive Voices в методическом пособии «Грамматика английского языка»

упр. I. Выберите правильную форму сказуемого:

1. *Strophanthi semina* (семена строфанта) (have found, have been found) in Africa.

2. The seeds of strophanthus (have used, have been used) by the natives of East and West Africa.
3. This plant (has cultivated, has been cultivated) in our country.
4. The drug (has obtained, has been obtained) in crystals by concentration.
5. Vitamin C (synthetized, was synthetized) from d-galactose.
6. Certain diseases (treat, are treated) with antibiotics.

упр. II. Измените предложения в Perfect Passive Voice:

Model: A number of authors have shown the stimulation of microsomal enzyme activities- The stimulation of microsomal enzyme activities has been shown by a number of authors.

1. We have tested the efficacy of methotrexate in corticosteroid-resistant polymyositis.
2. People have cultivated corn for many thousands of years.
3. Previous reports have suggested a high degree of correlation between the enzymes.
4. Livingstone noted the use of seeds and extracts of strophanthus by the natives of Africa.

Тест

Test your grammer:

Test 1. Present Perfect or Past Simple.

1. We (not have) a holiday last year.
 - a) didn't have
 - b) haven't had
 - c) hadn't had
2. My parents (be) to the USA many times.
 - a) have been
 - b) were
 - c) have being
3. I (buy) a new dress last week, but I (not wear) it yet.
 - a) bought, haven't worn
 - b) have bought, haven't worn
 - c) had bought, didn't wear
4. ... it (stop) raining yet?
 - a) Did it stop
 - b) Is it stopped
 - c) Has it stopped

5. Don't worry about your letter. I(send) it the day before yesterday.
- sended
 - have sent
 - sent
6. I (lose) my glasses. I (have) them when I came to the college this morning.
- losed, have had
 - have lost, had
 - lost, have
7. When Jill (finish) school ?
- When had Jill finished ..
 - When has Jill finished...
 - When did Jill finish...
8. When I was a child, I (always be late) for school.
- have always been
 - always was late
 - had always been
9. I can't find my umbrella. I think somebody (take) by mistake.
- took
 - takes
 - has taken
10. –Are you tired?
–Yes, a little. I(paint) the ceiling today.
- have painted
 - painted
 - paint
11. We (not see) Peter this week, but we (see) him a couple of weeks ago.
- haven't seen, saw
 - didn't see, saw
 - haven't seen, have seen
12. – Have you got any money?
–Yes, I(borrow) it from my brother.
- borrowed
 - have borrowed
 - did borrow
13. – Where is Jane?
– She (go) to the shops. She will be back soon.
- went

- b) has gone to
 - c) has been to
14. My husband (work) in the bank for three years since 1990 to 1993.
- a) has worked
 - b) had worked
 - c) worked
15. Mom (lose) her car keys, so we have to open the door by force.
- a) has lost
 - b) lost
 - c) losed
16. One of the passengers (die) in that accident.
- a) has died
 - b) died
17. My sister and her husband (be married) since last Christmas.
- a) were married
 - b) have married
 - c) have been married
18. ... the post (come) today?
- a) Did the post come...
 - b) Has the post come...
 - c) Has the post came...

Test 2. Past Perfect or Past Simple.

1. I (wake up) early and got out of bed
- a) woke up
 - b) had woken up
2. I got out of bed an hour later I (wake up).
- a) woke up
 - b) had woken up
3. We were late. The meeting (start) an hour before.
- a) started
 - b) had started
4. She was the most delightful person I (ever meet).
- a) ever met
 - b) had ever met
5. That morning she (dress) (phone) somebody, and went out.
- a) dressed, phoned
 - b) had dressed, had phoned

6. That morning she went out after she (phone) somebody.
a) phoned
b) had phoned
7. He was tired because he (work) hard in the garden all day.
a) worked
b) had worked
8. The sun (set), it (get) dark, and we went home.
a) set, got
b) had set, got
9. The Hills were in hurry, but they (take) a taxi and managed to arrive exactly on time.
a) took
b) had taken
10. The Hills managed to arrive exactly on time because they (take) a taxi.
a) took
b) had taken
11. He said he (break) the lamp post.
a) broke
b) had broken
12. We asked Peter to go with us, but he refused. He (already promise) to play football with his friends.
a) already promised
b) had already promised
13. I saw a nice kitten when I (open) the basket.
a) opened
b) had opened
14. After I (write) all my letters, I went to the kitchen to make coffee.
a) wrote
b) had written
15. She (hardly finish) speaking over the phone when telephone rang again.
a) hardly finished
b) had hardly finished
- Test 3. Past Perfect or Present Perfect.**
1. Aunt Polly punished Tom Sawyer because he ... naughty.
a) has been
b) had been

2. – Why are you looking so unhappy?
- I ... my purse.
 - a) have lost
 - b) had lost
3. Sam was upset because Judy ...
 - a) hasn't come
 - b) hadn't come
4. Mother asked the children if they ... some biscuits for tea.
 - a) has bought
 - b) had bought
5. I ... some photos to be developed. Are they ready?
 - a) has left
 - b) had left
6. Tell Tommy about these wonderful islands. He ... about them.
 - a) has never heard
 - b) had never heard
7. I am so happy to see you again. I ... you since I left Bertks.
 - a) haven't seen
 - b) hadn't seen
8. She said she... him since she left Berks.
 - a) hasn't seen
 - b) hadn't seen

Test 4. Future Perfect or Future Simple.

1. Julia (finish) all the housework by three o'clock and we'll go for a walk.
 - a) will finish
 - b) will have finished
2. I promise I(get) in touch with you if I need your help.
 - a) will get
 - b) will have got
3. We are going to buy a car. By the end of next month our family (save) money for it.
 - a) will save
 - b) will have saved
4. The workers say that they (build up) a district by the beginning of 2000.
 - a) will build up

- b) will have built up
5. He probably never (be) patient.
- a) will probably never be
- b) will probably never have been
6. She (have lunch) by the time we arrive.
- a) will have
- b) will have had
7. If you think it is over, you (see) that I am right.
- a) will see
- b) will have seen

Keys:

Test 1.

- 1.a
2. a
3.a
4.c
5.c
6.b
7.c
8.b
9.c
10.a
11.a
12.b
13.b
14.c
15.a
16.b
17.c
18.b

Test 3.

- 1.b
2.a
3.b
4.b
5.a
6.a
7.a
8.b

Test 2.

- 1.a
2.b
3.b
4.b
5.a
6.b
7.b
8.a
9.a
10.b
11.b
12.b
13.a
14.b
15.b

Test 4.

- 1.b
2.a
3.b
4.b
5.a
6.b
7.a

УРОК VII

Текст:

Solutions.

Грамматика:

Participle I, II.

Подготовительные упражнения

упр. I. Прочтите и переведите предложения с данными словосочетаниями:

for this reason- поэтому

1. Iron doesn't form amalgam directly and for this reason mercury is often kept in iron bottles.

2. Phosphorus is very reactive and for this reason it should never be handled with bare hands.

differ in- различаться в чем –то

differ from- отличаться от

1. Iron dust differs in many ways from iron.

2. X-rays differ from light in many respects.

3. Tellurium differs from selenium more than the latter does from sulphur.

4. There are kinds of lead atoms which differ in atomic weights.

as well as- также как и

as far as- насколько, поскольку

as fast as- по мере того как

as long as- пока

as to, for- что касается, относительно

as much as-почти

1. As far as chemical properties of sulphur are concerned it unites directly with common metals, except gold and platinum.

2. In oxidizing many substances with a solution of iodine, the yellow or brown colour of the iodine fades away as fast as iodine is added until the end point is reached.

3. As long as water evaporates in an open vessel water vapour mingles with the atmosphere because of diffusion.

4. As much as 80 volumes of sulphur dioxide will go to dissolve in one volume of water at room temperature.

5. As to its chemical properties oxygen is very reactive .

6. Silicon resembles carbon in having crystalline as well as amorphous form.

7. Radioactive elements are of great importance as to their use in many branches of industry.

упр. II. Определите к какой части речи относятся данные слова:

Noun verb adverb adjective
composition, extraordinary, entirely, investigator, curious, capable, variety, consecutive, wonderful, exception, influence, prominent, temporary, colloidal, suspension, comparatively, quantitative.

упр. III. Найдите подлежащее в следующих предложениях:

1. Heating to a “moderate” temperature for 30 minutes suffices.
 - a) heating
 - b) temperature
 - c) minutes
2. Their having obtained an absolutely new substance was out of question.
 - a) substance
 - b) having obtained
 - c) question
3. Of special interest were the attempts to obtain an absolutely pure substance.
 - a) interest
 - b) the attempts
 - c) substance

упр. IV. Определите сказуемое в следующих предложениях:

1. The temperature remained unchanged but the reaction calculated to take thousands of years occurred in a matter of seconds.
 - a) remained, calculated
 - b) unchanged, occurred
 - c) remained, occurred
2. Lithium and sodium each containing a single electron in its outer shell account for their being in the same group of the Periodic Table.
 - a) containing
 - b) account
 - c) being

3. Catalysts are said to be selective in their action accelerating only a particular process.

- a) to be
- b) are said
- c) accelerating

.Прочтите и переведите текст

Solution

Any chemically and physically homogeneous mixture of two or more substances is said to be a solution. It is possible to have solutions of solids in liquids, liquids in liquids, gases in liquids, solids in solids, etc.

Depending upon the size of the dispersed particles we recognize true solutions, colloidal solutions, and suspensions.

If sugar is dissolved in water, it is supposed that the ultimate sugar particles are of molecular dimensions and that a true solution is formed. On the other hand if very fine sand is mixed with water, a suspension of comparatively large particles, each consisting of many molecules is obtained. Between these two extremes lie colloidal solutions.

From the pharmaceutical stand- point solutions of solids in liquids are of the greatest importance and many quantitative data are available on the properties of such solutions.

When an excess of a solid is brought into contact with liquid molecules of the former are removed from its surface until equilibrium is established between the molecules leaving the solid and those returning to it. The resulting solution is said to be saturated at the temperature of the experiment.

The extent of solubility of different substances varies from almost imperceptible amounts to relatively large quantities but for any given solute the solubility has a constant value at constant temperature.

Under certain conditions it is possible to prepare a solution containing a larger amount of solute than is necessary to form a saturated solution. This may occur when a solution is saturated at one temperature, the excess of solid solute removed, and the solution cooled. The solute present in solution, even though it may be less soluble at lower temperature, does not always separate from the solution and a supersaturated solution is produced.

упр. I. Соотнесите английский эквивалент с русским:

- a) the extent of solubility
- b) on the other hand
- c) quantitative data
- d) ultimate sugar particle
- e) a suspension of large particle
- g) an excess of a solid solute
- f) solutions of solids in liquids

- 1. элементарная частица сахара
- 2. взвесь больших частичек
- 3. степень растворимости
- 4. с другой стороны
- 5. количественные данные
- 6. растворы твердых частиц в жидкостях
- 7. избыток твердого растворимого вещества

упр. II. Заполните пропуски союзами:

provided- при условии

if- если

even though- даже если

1. ... a liquid contains free acids or alkali, a double filter should be used.

2. ... solutions of the silver salts are exposed to the light, precipitation will take place.

3.... the pharmacist is filling a prescription calling for a dozen or more powders, he assumes a serious responsibility in the identification of the material and in the accurate weighing.

4. You will certainly obtain a colloidal solution under existing conditions ... you know its properties.

5. Technical reasons will not influence ... it is possible to prepare a solution containing a large amount of solute under existing conditions.

6. The solid particles of the separating liquids are completely separated ... we use strainers instead of good paper filters.

7. However more satisfactory results could be obtained... the release rate was somewhat decreased.

8. Therefore in vivo results should be similar to those in vitro, ... that the assumptions made previously are valid.

упр. III. Найдите правильные утверждения:

1. Solution is a homogeneous mixture of two or more substances.
 - a) True.
 - b) False.
2. From the pharmaceutical stand – point solutions of solids in liquids are of great importance but we know a little about the properties of such solutions.
 - a) True.
 - b) False.
3. Under certain conditions it is possible to prepare a solution containing a larger amount of solute than it is necessary to form a saturated solution.
 - a) True.
 - b) False

упр. IV. Выберите правильный ответ.

1. Are paper filters the most useful of all for the pharmacist?
 - a) Yes, they are.
 - b) Yes, it is.
 - c) No, they don't.
2. Is the paper specially prepared used for filtration?
 - a) Yes, it does.
 - b) No, it isn't.
 - c) Yes, it is.
3. Can we prepare solutions in laboratory?
 - a) Yes, we do.
 - b) Yes, we can.
 - c) No, we don't.
4. Do we recognize three kinds of solutions?
 - a) Yes, it is.
 - b) No, we don't.
 - c) Yes, we do.
5. Is it possible to obtain a solution only by dissolving solids in liquids?
 - a) Yes, it is.
 - b) No, it doesn't.
 - c) Yes, we are.
6. Is much known about the formation of colloidal solutions?

- a) Yes, it is.
- b) Yes, it does.
- c) No , we don't.

Ознакомьтесь с темой “Participle and its constructions” в методическом пособии «Грамматика английского языка» и выполните упражнения.

упр. I. Найдите правильную форму причастия.

1. Paper filters are employed in all the operations (required, requiring) filtration.
2. The paper (used, using) for this purpose is specially prepared and is called filter paper.
3. A solution (contained, containing) a larger amount of solute than is necessary to form a saturated solution may be prepared under certain conditions.
4. The substance (occured, occurring) on the earth and in the sun and stars, is the first element of the Periodic Table.
5. Ointment bases (contained, containing) animal fats, vegetable oils or hydrocarbons are known as oleaginous basis.
6. The juices so (obtained, obtaining) may then be evaporated.

упр. II. Выберите правильную форму причастия:

1. Предметы, изучаемые в вузе, очень разнообразны.
 - a) being studied
 - b) studying
 - c) studied
2. Химик, делающий опыт, высоко квалифицированный специалист.
 - a) being made
 - b) making
 - c) made
3. Больной, которого сейчас осматривают, жалуется на сильную боль в желудке.
 - a) being examined
 - b) examining
 - c) examined

упр. III. Найдите предложения с независимым причастным оборотом.

1. The boiling point of water falls out of the series being much higher than it should be.

2. No natural process takes place without water, being the formation of a new mineral, or a highly complicated biological reaction taking place in the organism of a plant or an animal.

3. Oxygen contained in water is a mixture of three isotopes: oxygen 16, oxygen 17, oxygen 18, the first being the most common.

4. Three isotopes of hydrogen have been found by scientists, each of them being able to combine with oxygen.

5. Having only five hundred micrograms of plutonium scientists succeeded in studying the principle properties of this element.

Тест

Test your grammar.

Test 1. Tag- questions.

1. He can play golf well, ...?

a) doesn't he?

b) can he?

c) can't he?

2. You are the new secretary, ...?

a) aren't you?

b) are you?

c) don't you?

3. Mr. Evans is speaking over the phone, ...?

a) is he?

b) isn't he?

c) doesn't he?

4. I'm busy, ...?

a) aren't I?

b) don't I?

c) am not I?

5. You like black coffee, ...?

a) aren't you?

b) don't you?

c) do you?

6. You aren't well enough. You should stay with either me or your son, ...?

a) should you?

- b) shouldn't you ?
c) are you ?
7. I'm not ill, ... ?
a) are I ?
b) am I ?
c) do you ?
8. It's a nice day, ...?
a) does it ?
b) is it ?
c) isn't it ?
9. There isn't a cloud in the sky, ...?
a) is it ?
b) does it ?
c) is there ?
10. We haven't got much time, ...?
a) do we ?
b) don't we ?
c) haven't we ?
11. Sam doesn't work hard, ...?
a) is he ?
b) does he ?
c) isn't he ?
12. There are a lot of photos in the album, ...?
a) aren't they?
b) aren't there?
c) are there?
13. There was nobody there, .../
a) was there/
b) wasn't there?
c) were there?
14. Your son didn't help you much, ...?
a) did he?
b) had he?
15. They sent a letter the day before yesterday, ...?
a) did they?
b) hadn't they?
c) didn't they?
16. My dad hasn't read the newspaper, ...?
a) hasn't he?

- b) has he?
- c) did he?
- 17. There will be a nice film on TV tonight, ...?
 - a) won't there?
 - b) will it?
 - c) will there?
- 18. Neither your parents nor mine can lend us some money, ...?
 - a) can they?
 - b) can't they?
 - c) do they?
- 19. He never uses his car except when it's necessary, ...?
 - a) doesn't he ?
 - b) does he?
 - c) isn't it?
- 20. There's little point in doing anything about it, ...?
 - a) is it?
 - b) isn't there?
 - c) is there?

Test 2. Plural or Singular.

1. My hair ... clean.
 - a) is
 - b) are
2. Can I borrow your scissors? Mine ... not sharp enough.
 - a) is
 - b) are
3. Bad news (not/make) people happy.
 - a) don't make
 - b) doesn't make
4. There ... hair in my soup.
 - a) is a
 - b) is
 - c) are
5. I don't want ... or help.
 - a) advices
 - b) an advice
 - c) advice
6. I've seen some comedies this month. Each ... funnier than the last.

- a) was
b) were
7. We'd like three ... eggs.
a) dozen of
b) dozen
c) dozens
8. Knowledge ... power.
a) is
b) are
9. Everybody ... ready.
a) is
b) are
10. I need my glasses. Where ... these glasses?
a) is
b) are
11. In summer we eat a lot of ...
a) fruit
b) fruits
12. There ... a lot of sheep in the field.
a) is
b) are
13. The police ... to interview Fred about the accident.
a) wants
b) want
14. Money ... not everything.
a) is
b) are
15. Last Saturday we went fishing, but we didn't catch many...
a) fish
b) fishes
16. Mathematics ... an exact science.
a) is
b) are
17. The sunlit ... look wonderful.
a) rooves
b) roofs
18. It costs four ... dollars.
a) hundred
b) hundreds

19. Julia's clothes ... in her wardrobe.
 a) is
 b) are
20. Our team ... playing well.
 a) is
 b) are
21. Our team ... the best.
 a) is
 b) are
22. The United States ... a violent history.
 a) have
 b) has
23. ...are made of bronze.
 a) pence
 b) pennies

Keys

Test 1

1. c
 2. a
 3. b
 4. b
 5. a
 6. b
 7. b
 8. c
 9. c
 10. a
 11. b
 12. b
 13. a
 14. a
 15. c
 16. b
 17. a
 18. a
 19. b
 20. c

Test 2

1. a
 2. b
 3. b
 4. a
 5. c
 6. a
 7. b
 8. a
 9. a
 10. b
 11. a
 12. b
 13. b
 14. a
 15. a
 16. a
 17. b
 18. a
 19. b
 20. b

21. a
 22. b
 23. b

УРОК VIII

Текст: “At the chemist’s”
Грамматика: Revision of tenses in Active Voice.

Подготовительные упражнения

упр. I Найдите ряд, где все слова существительные.

a) finding, mysteries, technology, theoretician, object, development, daily.

b) contribution, originator, achievement, uniformity, difference, language, imitate.

c) heading, knowledge, researcher, essence, colleague, remedies, utility.

Прочтите и переведите текст

At the chemist’s

When somebody falls ill we invite the doctor. After the doctor’s visit we go to the nearest chemist’s to have all the prescriptions made up.

There are two departments in the chemist’s shop. At the chemist department one can have medicine right away, other drugs have to be ordered at the prescription department. At the chemist’s all drugs are kept in drug cabinets. Every small bottle or box has a label with the name of the medicine. There are labels of three colours. White ones indicate drugs for internal use, yellow ones- for external use and blue ones –for injections.

As a rule the directions for administration of a drug are written on the signature. Chemists, nurses doctors as well as patients themselves must not confuse different remedies because some of them are poisonous and may cause death.

In the drug cabinets there are small parcels with different powders, ampules with glucose and camphor used for intravenous and intramuscular injections, tubes of healing ointments which are used to relieve pain or skin irritation, pills for internal use, sedatives and tonics, bromide, vitamins, cod liver oil and sleeping draughts, bottles of iodine and so on.

At the chemist’s shop one can also get different drugs as well as hot- water bottle, droppers and many other things.

Poisonous drugs are kept in the drug cabinets marked with the letter “A” and all strong effective drugs are kept in the drug cabinet marked with letter “B”.

The chemist usually says how to use and keep different kinds of medicine. For example, cough mixture must be kept in a cool place and shaken before using; a tablespoon of this mixture must be taken three times a day and so on.

упр. III. Соотнесите английские эквиваленты с русскими:

- a) to fall ill
- b) prescription
- c) department
- d) label
- e) external use
- f) to cause death
- g) powder
- h) cod liver oil
- i) sleeping draught
- j) cough mixture
- k) confuse medicine
- l) irritation

- 1. раздражение
- 2. перепутать лекарства
- 3. привести к смерти
- 4. заболеть
- 5. отдел
- 6. рецепт
- 7. снотворное
- 8. этикетка
- 9. наружное применение
- 10. порошок
- 11. рыбий жир
- 12. микстура от кашля

упр. IV. Выберите правильную форму глагола:

- 1. The nurse (sponges, is sponged) the patient’s skin.
- 2. A poisonous remedy (is caused, causes) death.
- 3. The cod-liver oil (takes, is taken) by a child.

4. A skin irritation (caused, was caused) by that drug.
5. He (was rubbed, rubbed) in a healing ointment to relieve pain.
6. I (was bought, bought) a medicine dropper at the chemist's department.
7. Laxatives (were administered, administered) by the doctor.
8. Professor Smirnov (will deliver, will be delivered) a lecture in Histology tomorrow.
9. The therapist (will put, will be put) my sister on a sick-leave tomorrow.
10. A hot-water bottle (is applied, applies) by my sister to her feet in the evening.

упр. V. Заполните пропуски, выбрав сказуемое:

1. She ... in a healing ointment to relieve pain and skin irritation.
 - a) is rubbing
 - b) is being rubbed
2. The injection of camphor by the nurse when my friend came in.
 - a) was being given
 - b) was giving
3. Our district doctor ... the calls when I came to the polyclinic.
 - a) was making
 - b) was being made
4. Bottles of poisonous drugs ... by the chemist.
 - a) were being marked
 - b) were marking
5. The overdose of this drug ... an untoward reaction.
 - a) was being caused
 - b) was causing

упр. VI. Дайте краткие ответы.

1. Are there four departments in the chemist's shop?
 - a) Yes, there are.
 - b) No, there aren't.
 - c) Yes, they are.
2. Do blue labels indicate drugs for internal use?
 - a) Yes, they do.
 - b) No, they aren't.
 - c) No, they don't.

3. Does yellow label indicate drugs for external use?
 - a) Yes, they do.
 - b) No, it doesn't.
 - c) Yes, it does.
4. Must the nurses confuse different remedies?
 - a) Yes, they must.
 - b) No, they can't
 - c) No, they mustn't.
5. Are the drugs kept in the cabinets marked with different letters?
 - a) Yes, they do.
 - b) Yes, they are.
 - c) Yes, they were.
6. Can we order the prescription at the chemist's?
 - a) Yes, we can.
 - b) No, we can't.
 - c) Yes, we do.

Повторите времена и выполните тесты по грамматике

Test 1. Past Simple, Past Continuous, Past Perfect, Past perfect Continuous.

1. I ... over the phone when they brought me the letter.
 - a) talked
 - b) had talked
 - c) had been talking
 - d) was talking
2. They ... in the room when the taxi arrived.
 - a) sat
 - b) had sat
 - c) had been sitting
 - d) were sitting
3. He quickly forgot everything he ... at school.
 - a) learnt
 - b) had learnt
 - c) had been learning
 - d) was learning
4. I visited Brazil in April I ... at a nice hotel for a fortnight.
 - a) stayed
 - b) had stayed
 - c) had been staying

- d) was staying
5. I ... at the hotel for a fortnight when I received your letter.
- a) stayed
 - b) had stayed
 - c) had been staying
 - d) was staying
6. The musician ... the piano for a whole hour when we came in.
- a) played
 - b) had played
 - c) had been playing
 - d) was playing
7. Alice closed the magazine and rose from the sofa on which she ... for more than two hours.
- a) lay
 - b) had lain
 - c) had been lying
 - d) was lying
8. A man ... unconscious for a few minutes when an ambulance arrived.
- a) was
 - b) had been
 - c) had being
9. We ... along a forest road for two hours when we saw a house.
- a) walked
 - b) had walked
 - c) had been walking
 - d) were walking
10. I ... over the phone for a whole hour when the porter knocked at the door.
- a) talked
 - b) had talked
 - c) had been talking
 - d) was talking
11. I hardly ... speaking with a porter when the phone rang again.
- a) finished
 - b) had hardly finished
 - c) had been finishing
 - d) was finishing
12. First I ... the phone and then I read your letter.

- a) answered
- b) had answered
- c) had been answering
- d) was answering

13. And I began writing to you instead of going to the seaside as I ...before.

- a) planned
- b) had planned
- c) had been planning
- d) was planning

Test 2. Future Simple, Future Perfect, Future Continuous.

1. He ...when you come back tonight.

- a) will sleep
- b) will be sleeping

2. By the time I come they ...

- a) will go
- b) will have gone

3. It is snowing heavily. Have you listened to the weather forecast for tomorrow?

- I hope itsnowing by tomorrow morning.

- a) will stop
- b) will be stopping
- c) will have stopped

4. My sisterthe result of her exam on economy in three days.

- a) will know
- b) will have known
- c) will be knowing

5. – Let's meet at the station at 5 o'clock.

- Ok. Ifor you there.

- a) will wait
- b) will be waiting
- c) will have waited

6. The work of the scientist... the proper acclaim.

- a) will achieve
- b) will have achieved

Keys

Test 1

1. d

2. d

3. b

4. a

5. c

6. c

7. c

8. b

9. c

10. c

11. b

12. a

13. b

Test 2

1. b

2. a

3. b

4. b

5. a

6. b

7. a

УРОК IX

Текст: Preparation of medicines.
Грамматика: Revision of tenses in Passive voice.

Подготовительные упражнения

упр. I Определите сказуемое в следующих предложениях:

1. In the middle of the laboratory there are usually several tables.
 - a) there
 - b) are
 - c) laboratory
2. With the help of chemical reagents the students perform chemical reactions.
 - a) reagents
 - b) perform
 - c) chemical
3. Sodium and potassium do not sink in water.
 - a) sink
 - b) do
 - c) do not sink
4. All living things on earth are not made up only of non-metals.
 - a) are not
 - b) made up
 - c) are not made up
5. Scientists have detected more than seventy different chemical elements in the organism.
 - a) have
 - b) have detected
 - c) detected

упр. II. Составьте предложения, распределив слова в нужном порядке.

1. ill, I, fall, often, grippe, with.
2. Prescription, he, down, writes, a .
3. Chemist's shop, son, as a rule, my, nearest, to, goes, the.
4. Powders, usually, kept, the, are, in, drug, cabinets.
5. Strong, effective, drugs, are, chemist's shop, marked, at, the, letter, "B", with, the.

упр. III. Переведите предложения, обращая внимание на данные словосочетания.

treat with- обрабатывать чем-то

1. When sodium and potassium hydroxides are treated with an acid they are said to be neutralized.

2. Water supplies of large cities are nearly always treated with small amounts of chlorine for the destruction of bacteria.

take advantage of- воспользоваться

1. In order to take advantage of the activity of sodium in liberating hydrogen, an alloy of sodium with lead, or mercury is sometimes used.

2. In experiments with ozone one can take advantage of the fact that essential oils absorb ozone without decomposition.

take care –заботится, принимать меры

1. To investigate the properties of oxygen care should be taken to have the gas in pure form.

2. Hydrogen sulphide being very poisonous, care should be taken in the laboratory not to inhale it.

3. Soluble barium salts being poisonous, care is taken to remove them.

упр. IV. Определите сколько слов входят в сказуемое.

1. The properties of the elements of the Periodic System gradate quite regularly from the light elements to the heavy ones.

a) 2

b) 3

c) 1

2. It had been comparatively easy to calculate the number of atoms.

a) 3

b) 1

c) 2

3. Not every substance can accelerate any particular process.

a) 2

b) 1

c) 3

4. Their purpose is to slow down rapid chemical reactions.

a) 2

b) 3

c) 1

5. Taken by themselves, they don't influence the course of the reaction.

- a) 2
- b) 3
- c) 1

Прочтите текст

Preparation of medicines

As you know on receiving a prescription from a doctor or in following a home treatment all of us need medicines which are ordered or bought at a chemist's. It's a pity, but sometimes we really need medicines, e. g. when we have inflammation of lungs, the grippe, angina and so on. That's why the first known medical encyclopedia is "The drug preparation book for all parts of the human body."

But how are medicines "born and live" today? The state list includes 3000 medicinal preparations. This list is changable. Usually drugs "live " during 15-20 years. They cease their existing with the discovery of new more effective drugs.

Now drugs have an elegant packing. They are kept everywhere: in a pocket or a bag. Drugs have made the processes of treatment to the simplest scheme. At a chemist's we are accustomed to see drugs for internal and external use, for stomach, cough and so on.

Now one of the leading scientific institutions of the country is the Academy for research of pharmaceutics. The specialists of this institution are investigating the prognosis of drug use by the computer. The scale of accounting is known to be great. Every month about 2 0 million prescriptions are written out in the country.

The specialists say, that drug label must inform a patient about the method of administration of medicine and its keeping in details. The label must also attract attention . It is proved, that it is more expedient to design drugs for external use in yellow colour. Blue colour has to be conserved for injections, but green colour is suggested to mark drugs for internal use. To minimize the severity of danger for children every drug must have the inscription : "Keep away from children " The same medicinal preparation may be used both as a treating agent and as a poison. The chemists make thorough investigation to define curative and harmless dosage for the human organism. It mustn't be otherwise. Care of drug preparation quality is care of people health.

упр. I. Соотнесите русские эквиваленты с английскими:

- a) curative dosage
- b) to attract attention
- c) harmless
- d) to be accustomed
- e) method of administration
- f) poison
- g) it's a pity
- h) the state list

- 1. привыкать
- 2. яд
- 3. жаль
- 4. привлекать внимание
- 5. реестр
- 6. лечебная доза
- 7. метод приема
- 8. безвредный

упр. II. Согласитесь или не согласитесь с данными утверждениями:

1. The state list includes more than 3000 medicinal preparations and it's not changable.

- a) True
- b) False

2. New more effective drugs appear each year and the old ones cease their existing.

- a) True
- b) False.

3. Chemists use different colours of labels to attract the attention of customers.

- a) True.
- b) False.

4. Chemists, doctors and pharmacists should be very careful and mustn't confuse different remedies, because the same medicinal preparation may be used both as a treating agent and as a poison.

- a) True.
- b) False.

5. Now we don't need to order a prescription as it was in the past, because all medicines are sold in a prepared form.

- a) True.
- b) False.

упр. III. Прочтите пары предложений и выберите одно в страдательном залоге.

1. The drug is used by the patient. The patient can use this drug.
2. The prescriptions were written by the doctor. The doctor wrote out the prescription.
3. The patients are informed about the method of keeping the medicine. Drug label informs the patients about the method of keeping the medicine.
4. The drug will be made by the chemist. The chemist will make these drugs.

упр. IV. Дайте краткий ответ:

- 1) Do we often need drugs?
- 2) There is a state list of medicines, isn't there?
- 3) Are the labels of different colours stuck on medicines?
- 4) Can the medicines do harm to people's health?
- 5) Do the chemists make thorough investigation to define curative and harmless dosage for the human organism?

Повторите страдательный залог и выполните тесты для контроля знаний

Test 1. Выберите правильную форму глагола.

1. The day before yesterday we (invite) to the restaurant by Tom Jenkins.
 - a) are invited
 - b) were invited
 - c) invite
2. Look! The bridge (repair) .
 - a) is being repaired
 - b) is been repaired
 - c) has being repaired
3. The letter and the parcel (post) tomorrow.
 - a) will be post

- b) will have been posted
 c) will be posted
4. Margaret (know) to be a very industrious person.
 a) has been known
 b) is known
 c) is been known
5. In Greece the Olympic Games (hold) once in four years.
 a) were held
 b) are being held
 c) are held
6. The problem (study) for three years, but they haven't got any results.
 a) has been studied
 b) has being studied
 c) was studied
7. This book (republish) by the end of September.
 a) woud have been republished
 b) would been republished
 c) will have been republished
8. The doctor said that Tommy's leg (x-rayed) the following day.
 a) will be x-rayed
 b) would be x-rayed
 c) will have been x-rayed
9. A police car came when the injured man (carry off) the road.
 a) was being carried off
 b) was been carrying off
 c) has been carried off
10. I (bear) in a small Russian town not far from Samara.
 a) were born
 b) am born
 c) was born
11. Dad phoned us and asked if our luggage (already /pack).
 a) was already being packed
 b) had already been packed
 c) was packed
12. What a pity, John won't come. He (tell) about the meeting before hand.
 a) should have been told
 b) should be told

c) should been told

Test 2. Choose the right short answer.

1. Will you be here next weekend?
 - a) No, I won't.
 - b) No, I don't.
 - c) No, I am not.
2. Have you got any time for me?
 - a) Yes, it is.
 - b) Yes, there is.
 - c) Yes, I do.
3. Did Julia phone you earlier?
 - a) Yes, she did.
 - b) Yes, she had.
 - c) Yes, she has.
4. Would you like a cup of hot tea?
 - a) I'd love to
 - b) Yes, I am.
 - c) Yes, I do.
5. Do you like hot tea?
 - a) Yes, I'd like.
 - b) Yes, please.
 - c) Yes, I do.
6. It wasn't a bad day, was it?
 - a) Yes, it wasn't.
 - b) No, it wasn't.
 - c) Yes, it was.
7. Are you married?
 - a) Yes, I do.
 - b) Yes, I am.
 - c) Yes, I was.
8. Are there a lot of children in your group?
 - a) Yes, they are..
 - b) Yes, they do.
 - c) Yes, there are.
9. Terry doesn't eat meat, does he?
 - a) No, he doesn't.
 - b) Yes, he doesn't.
 - c) No, it doesn't.

10. Had Jenny rung before she came?
 a) Yes, she did.
 b) Yes, she had.
 c) Yes, she rang.
11. Can I give you a lift?
 a) Yes, you can.
 b) Yes, please.
 c) Yes, of course.
12. I went to bed late last night. And you?
 a) So did I.
 b) So I did.
 c) And I did.
13. Would you wait half an hour , please?
 a) Yes, please.
 b) Yes, I would.
 c) All right.
14. Tom neither wrote nor phoned, did he?
 a) Yes, he did.
 b) No, he didn't.
 c) Yes, he had.

Keys

Test 1	12. a	Test 2	12.
1. b		1. a	13. c
2. a		2.c	14. b
3. c		3. a	
4. b		4. a	
5. a		5. c	
6. a		6. b	
7. b		7.b	
8. b		8. c	
9. a		9. a	
10. c		10. b	
11. b		11. b	

УРОК X

Текст: Nitrogen.

Грамматика: Infinitive. Complex Subject. Complex Object.

Подготовительные упражнения

упр. I. Переведите предложения, обращая внимание на данные словосочетания:

provided (that)- при условии

1. Oxygen can be liquefied provided that pressure is sufficiently high.

2. Hydrogen sulphide will have no appreciable action on most of the oxides at ordinary temperature provided it is thoroughly dried.

3. The change in volume of a fixed quantity of a gas is equal to $1/273$ provided the pressure is constant.

regardless-независимо

1. A solid portion of matter retains its form and occupies the same space regardless of the container it is placed in.

2. In empty space radiant energy seems to have the same velocity regardless of its character.

3. Carbon dioxide cannot be liquefied above 31-35* regardless of the pressure that is applied.

way- путь, способ

1. There are many ways to produce sulphur.

2. Arsenic resembles phosphorus in many ways.

3. One can prove in several ways that air is not a chemical compound.

упр. II. Определите сказуемое в следующих предложениях:

1. In both processes a mixture of nitrogen and hydrogen under pressure is heated to about 500 C and then passed over a specially prepared iron finely divided to act as a catalyst.

a) is heated

- b) is heated and passed
- c) is heated, passed, divided.

2. The waste products of plant and animal life contain the nitrogen of the original protein combined in a number of different compounds easily turned into ammonium compounds.

- a) contain, combined
- b) contain, combined, turned
- c) contain.

упр. III. Заполните пропуски с помощью правильной формы глагола.

1. He was certain that mankind ... overcome the nitrogen crisis and ... find some way out of the situation.

- a) will
- b) would
- c) –

2. People began to add platinum to the gold ... it for making coins.

- a) is used
- b) used
- c) using

3. ... protein molecules plants need nitrogen .

- a) produced
- b) producing
- c) to produce

4. The principle analytical instruments of the chemists of the past ... their sense organs.

- a) are
- b) were
- c) had been

5. All you have ... is to mix the finely powdered substance in definite proportions.

- a) done
- b) do
- c) to do

Прочтите текст и выполните упражнения

Nitrogen

We have selected the substance to be studied today the element nitrogen which is of particular interest and service to man.

The position of nitrogen in the Periodic Table would make us expect this element to be active chemically, like its neighbours, oxygen and phosphorus, but this is not the case with nitrogen.

Nitrogen differs from all the other elements of this group in existing at ordinary temperatures as a colourless gas, consisting of diatomic molecules. The strength of the triple bond in the N-N molecule is remarkably great as much as 274,000 calories being required to decompose a gram molecular weight. This large quantity of energy accounts for the inactivity of the element. Thus the knowledge of the molecular structure of nitrogen enables the properties of the element to be clearly understood.

Nitrogen doesn't burn, nor does it support burning. At elevated temperatures it combines to some extent with oxygen, forming NO, and more readily with some of the active metals.

On account of its inertness it is difficult to make nitrogen combine with other elements and its compounds are found to be unstable. Nitrogen can be made to combine with hydrogen, to form ammonia, NH₃, only by use of a suitable catalyst. Attempts to cause carbon and nitrogen to combine to form cyanogen have always met with failure.

The use of a high voltage electrical discharge to which the element is subjected enables an active nitrogen to be produced.

Active nitrogen combines readily with many elements, including sulphur and phosphorus with which molecular nitrogen fails to react at all.

Aside from its use in the manufacture of ammonia, nitric acid, and other compounds the nitrogen of the air is of great importance and value to man and to all forms of life. For example, it dilutes oxygen and therefore retards oxydation. Life, certainly, would be quite different from what it is if atmosphere were composed of pure oxygen: it would probably be much shorter. The combustion of fuel in stoves and furnaces would be difficult to control, the corrosion of iron and steel would proceed so rapidly that their use would be impractical. The decay would also be greatly accelerated.

упр. I. Соотнесите английские эквиваленты с русскими.

a) to account for

- b) aside from its use
- c) decay
- d) fail to react
- e) on account of
- f) to be of service
- g) enable
- h) to meet with failure

- 1. разложение
- 2. не удастся реагировать
- 3. объяснять
- 4. помимо его применения
- 5. оказаться безуспешным
- 6. позволять
- 7. вследствие
- 8. быть полезным

упр. II. Согласитесь или не согласитесь с утверждениями.

1. Nitrogen can be easily combined with hydrogen to form ammonia.

- a) True.
- b) False.

2. On account of its inertness it is difficult to make nitrogen combine with other elements.

- a) True.
- b) False.

3. Nitrogen does not differ so much from all the other elements of this group.

- a) True.
- b) False.

4. Nitrogen can support burning.

- a) True.
- b) False.

5. The compounds the nitrogen of the air is of great importance and value to man and to all forms of life.

- a) True.
- b) False.

упр. III. Дайте краткий ответ.

1. Is it difficult to make nitrogen combine with other elements?

- a) Yes, they are.
- b) Yes, it is.

c) No, it is not.

2. The nitrogen of the air is so important to all forms of the life, isn't it?

a) Yes, it does.

b) Yes, they are.

c) Yes, it is.

3. Does active nitrogen combine with many elements?

a) No, it doesn't.

b) Yes, it does.

c) Yes, they are.

4. Does the large quantity of energy account for the inactivity of nitrogen?

a) Yes, it is.

b) No, it doesn't.

c) Yes, it does.

5. Can nitrogen burn and support burning?

a) Yes, it does.

b) No, it can't.

c) No, it doesn't.

упр. IV. Выберите правильную форму сказуемого.

1. The use of high voltage electrical discharge to which the element is subjected enables an active nitrogen to be produced.

a) to be produced

b) is subjected

c) enables

2. Nitrogen can be made to combine with hydrogen.

a) can be

b) can be made

c) can be made to combine

3. Attempts to cause nitrogen and carbon to combine have always met with failure.

a) to cause

b) to combine

c) have met

4. This position of nitrogen in the Periodic Table would make us expect this element to be active chemically.

a) to be active

b) would make

c) would make expect

Прочтите тему “Infinitive and its constructions” в методическом пособии «Грамматика английского языка» и выполните упражнения

упр. I. Выберите предложения с инфинитивом в функции определения.

1. To complete the drying process the granules were left in the pan over night.

2. Enough solvent was used to produce a mass having the necessary consistency into which the drug was suspended.

3. In 1906 the Russian botanist Tswett published a description of the technique to be used for separating the pigments of green leaves.

4. The mixture so prepared was spread to form a thin layer, left to dry for three days at room temperature.

5. The material to be used as a base for the suppositories has a definite constant effect on their characteristics.

a) 1, 3, 4.

b) 3, 4, 5.

c) 3, 5.

Выполните тесты для контроля знаний

Test 1.

1. Teddy’s words made me (feel) uncomfortable.

a) to feel

b) feeling

c) feel

2. Mrs. Pottson allowed her guests (smoke) in the living room.

a) to smoke

b) smoking

c) smoke

3. Has the secretary come yet? I want to have my papers (type).

a) to type

b) type

c) typed

4. I watched my cat (play) with her kittens. I couldn’t tear myself away from that funny sight.

a) played

b) playing

c) to play

5. Granny didn’t want my Mom (marry) my Dad.

a) marry

b) to marry

c) married

6. Our English teacher told us (not/feel) shy and speak English as much as possible.

a) not to feel

b) not feel

c) felt

7. I have to get my photograph (take) for a new passport.

a) took

b) take

c) taken

8. There wasn't much traffic in the street I saw a little girl (cross) the road.

a) crossed

b) cross

c) to cross

9. I have never heard Helen (sing).

a) sang

b) sings

c) singing

10. Mary would like her brother (avoid) Tom's company.

a) to avoid

b) avoid

c) avoided

11. We expected the Harrisons (arrive) later than usual.

a) to arrive

b) arrive

c) arrived

12. What makes you (do) such rash actions?

a) do

b) to do

c) doing

Test 2. Порядок слов.

1. often-the cinema-The Milnes-to-go.

a) The Milnes go to the cinema often.

b) The Milnes often go to the cinema.

2. cigarettes-his-give-him.

a) Give his cigarettes him.

b) Give him his cigarettes.

3. the theatre-go-often-very-we-to.
 a) We go to the theatre very often.
 b) We very often go to the theatre.
 c) Very often we go to the theatre.
4. him-give-to-cigarettes-his.
 a) Give to him his cigarettes.
 b) Give his cigarettes to him.
5. drink-coffee-I-usually-strong-don't.
 a) I usually don't drink strong coffee.
 b) I don't usually drink strong coffee.
 c) I don't drink strong coffee usually.
6. round-at-table-wooden-they-a-large-sat.
 a) They sat at a large wooden round table.
 b) They sat at a round large wooden table.
 c) They sat at a large round wooden table.
7. doing-men-what-those-are?
 a) What are those men doing?
 b) What are doing those men?
 c) What those men are doing?
8. the news-yesterday-saw-television-I-on.
 a) I yesterday saw the news on television.
 b) I saw on television the news yesterday.
 c) Yesterday I saw the news on television.
9. the novel-much-I-very-liked.
 a) I very liked the novel.
 b) I liked very much the novel.
 c) I liked the novel very much.
10. to-came-the office-he-yesterday-taxi-by.
 a) He came by taxi to the office yesterday.
 b) He came to the office by taxi yesterday.
 c) Yesterday he came by taxi to the office.
11. the table-and-on-is-there-two-a book-pens.
 a) There is a book and two pens on the table.
 b) There is two pens and a book on the table.
 c) On the table there is a book and two pens.
12. tell-didn't-me-you-the truth-why?
 a) Why you didn't tell me the truth?
 b) Why didn't you tell me the truth?
 c) Why didn't you tell the truth me?

13. where-me-could-is-the market-you-tell.

a) Could you tell me where the market is?

b) Could you tell me where is the market?

14. airport-10p.m-you'll-the-at-at-arrive.

a) You'll arrive at the airport at 10p.m.

b) You'll arrive at 10p.m at the airport.

c) At the airport you'll arrive at 10p.m.

Keys

Test 1

1 b

2 a

3 c

4 b

5 b

6 a

7 c

8 b

9 c

10 a

11 a

12 a

Test II

1 b

2 b

3 a

4 b

5 b

6 c

7 a

8 c

9 c

10 b

11 a

12 b

13 a

14 a

ЛИТЕРАТУРА

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учебное издание

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**ПРАКТИКУМ ПО АНГЛИЙСКОМУ ЯЗЫКУ ДЛЯ
СТУДЕНТОВ ФАРМАЦЕВТИЧЕСКОГО ФАКУЛЬТЕТА**

Учебно-методическое пособие

Отпечатано в авторской редакции

Редакционно-издательский отдел СибГМУ
634050, г. Томск, пр. Ленина, 107
тел. 8(382-2) 51-57-08
факс. 8(382-2) 51-53-15
E-mail: bulletin@bulletin.tomsk.ru

Подписано в печать 07.04.2009 г.
Формат 60x84 $\frac{1}{6}$. Бумага офсетная.
Печать ризограф. Гарнитура «Times». Печ. лист. 5,25
Тираж 200 экз. Заказ №

Отпечатано в лаборатории оперативной полиграфии СибГМУ
634050, Томск, ул. Московский тракт, 2