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МИНИСТЕРСТВА ЗДРАВООХРАНЕНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ**

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ENGLISH FOR PHARMACY STUDENTS

Учебное пособие для студентов

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Р е ц е н з е н т ы:
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Учебное пособие подготовлено в соответствии с типовой программой по дисциплине «Иностранный язык» (М., 2008г.), на основании рабочей программы (2010г.), действующего учебного плана (2012г.) и в соответствии с требованиями ФГОС ВПО по специальности «Фармация». В нем представлен четко изложенный профессионально ориентированный учебный материал по английскому языку, краткий грамматический справочник и глоссарий.

Пособие предназначено для студентов фармацевтического факультета, владеющих грамматическим и лексическим минимумом английского языка в объеме программы средней школы.

Рекомендовано в печать Координационного научно-методического совета и утверждено решением Редакционно-издательского совета ГБОУ ВПО БГМУ Минздрава России.

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ВВЕДЕНИЕ

Владение иностранным языком является обязательным компонентом профессиональной подготовки современных специалистов в любой области. Знание языка международного общения, каким является сейчас английский, предполагает успешную карьеру как в профессиональной деятельности, так и в науке и бизнесе. Необходимость комплексного развития коммуникативной, информационной, социо- и общекультурной компетенций студентов, а также дальнейшего совершенствования методики преподавания требует формирования конкретного методологического и практического инструментария по английскому языку для каждой специальности. Данное профессионально ориентированное учебное пособие разработано для студентов фармацевтического факультета медицинских вузов только начинающих изучать английский язык для специальных целей.

По своей практической направленности и методическим основам предлагаемое пособие отвечает требованиям современной лингводидактики. Отсутствие привычной опоры на родной язык при использовании пособия делает его гораздо интересным и познавательным и отличает от других подобных изданий.

Пособие состоит из двух частей, включающих в себя шесть тематически связанных разделов, приложения и списка слов. В основную часть вошли аутентичные тексты по фармации информативного характера одинаковой степени сложности. Вторую часть составляют тексты, посвященные проблеме фармацевтического образования. Комплексно представленный языковый материал включает в себя данные из разделов фонетики, лексики, грамматики и стилистики, а также специализированные фармацевтические и общелитературные тексты, содержащие элементы лингвокультурологии. Выполнение заданий, представленных в порядке нарастающей сложности с учетом

повторяемости материала, предполагает совершенствование знаний, умений и навыков английского языка.

Студенты должны **знать** основные особенности научного стиля фармацевтической литературы; основы аннотирования и реферирования специального фармацевтического текста; основные принципы самостоятельной работы с оригинальной литературой; основные виды словарно-справочной литературы и правила работы с ними; типичные коммуникативные формулы, необходимые для участия в межкультурном профессиональном общении на иностранном языке; **уметь** читать и переводить специальные тексты различной фармацевтической тематики на основе владения активным и пассивным лексическим минимумом; фиксировать полученную из текста информацию в форме аннотации, реферата (устно и письменно); участвовать в беседе на иностранном языке по темам, связанным с фармацевтическим образованием в России и стране изучаемого языка; **владеть** 2200 лексическими единицами, из них 1000 продуктивно; основными грамматическими конструкциями, присущими письменным формам общения подъязыка фармации: а именно, конструкциями с личными формами глагола в активном и пассивном залоге, конструкциями с неличными формами глагола, многозначными глаголами, различными синтаксическими конструкциями и др.; основными грамматическими структурами, присущими устным формам общения: порядок слов в разных типах предложений, вопросительные конструкции и др.

Изучение английского языка направлено на формирование у студентов следующих общекультурных (ОК) и профессиональных **(**ПК) **компетенций**:

ОК

1. Способность и готовность анализировать социально-значимые проблемы и процессы, использовать на практике методы гуманитарных, естественнонаучных, медико-биологических и клинико-

фармацевтических наук в различных видах профессиональной и социальной деятельности.

2. Способность и готовность к логическому и аргументированному анализу, к публичной речи, ведению дискуссии и полемики, редактированию текстов профессионального содержания.

3. Способность и готовность к письменной и устной коммуникации на государственном языке и владению одним из иностранных языков на уровне бытового общения.

4. Способность и готовность использовать полученные теоретические, методические знания и умения по фундаментальным естественно-научным, медико-биологическим, методико-педагогическим наукам.

ПК

1. Способность и готовность к работе с клиентами – посетителями аптек, владеть компьютерной техникой, получать информацию из разных источников, работать с информацией в глобальных компьютерных сетях; применять возможности современных информационных технологий для решения профессиональных задач.

2. Способность и готовность изучать научно-фармацевтическую и парамедицинскую информацию, отечественный и зарубежный опыт по тематике исследования, готовить рефераты, обзоры, доклады; участвовать в решении отдельных научно-исследовательских и научно-прикладных задач.

Поскольку все аспекты языка взаимосвязаны, работа со специальным текстом фармацевтической тематики поможет развитию навыков не только всех видов чтения (просмотрового, поискового, ознакомительного, изучающего), но и перевода, устной и письменной коммуникации. В пособие не вошли задания по аудированию. Предполагается использование преподавателем своего материала для этого вида языковой деятельности с применением компьютерных технологий.

Вводно-коррективный курс

Значительное расхождение между современным звучанием слов и их написанием объясняется историей развития английского языка. Трудности чтения слов вызываются тем, что 26 буквам английского алфавита соответствуют 44 фонемы (20 гласных и 24 согласных). Каждая гласная буква может иметь 4 варианта чтения в зависимости от предыдущих или последующих соседних букв. Это же касается и некоторых согласных. Правила чтения образуют систему норм чтения односложных, двусложных и многосложных слов. Раздел об односложных словах включает в себя разбор четырех основных типов чтения гласной буквы: 1) открытое положение гласной буквы; 2) закрытое положение гласной буквы с любой последующей согласной; 3) закрытое положение гласной буквы с последующей **r**; 4) закрытое положение гласной буквы с последующим сочетанием **r** + немая **e.**

Table I

Чтение ударных гласных

	I	**II**	**III**	**IV**
a	**[**ei] take	[æ] brand	[ɑ:] far	[eə] care
e	[i:] eve	[e] send	[ə:] her	[iə] here
i/y	[ai] side, type	[i] rib, myth	[ə:] bird	[aiə] fire, tyre
o	[əʊ] no	[ɔ] hot	[ɔ:] short	[ɔ:] store
u	[ju:] use	[ʌ] drug	[ə:] hurt	[jʊə] cure

/**ei**/ lake, frame, snake, rate, wane; /**æ**/ fat, rat, map, lack, tax; /ɑ:/ star, farm, March, card, part; /**eə**/ fare, stare, rare, mare, dare

fate – fat, sake – sack, car – care, pack – park, plan – plane, make – mark

/**i:**/ me, be, see, he, tea; /**e**/ lend, cell, pet, tent, cleft; /**ə:**/ per, nerve, serve, herb; /**iə**/ mere, here, sphere, cheer, hear

read – red, he – here, belt – berth, fee – ferry, jet – gene

/**ai**/ ride, size, pine, slice, nice; my, fly, dry, try, lye; / **i** / sip, dig, sit, fix, tip; system, gym, gyp, lymph; /**ə**:/ girl, fir, sir, stir; first; /**aiə**/ tire, hire, mire, wire; tyre, lyre

pine – pin, fine – fire, fit – fight, my – myth, mind – mire, gyp – gym, file – find

/**əʊ**/ note, code, dose, go, hope; /**ɔ**/ dot, plot, rod, box, spot; /**ɔ:**/ horn, born, torn, morn, cork; /ɔ:/ core, more, gore, shore

rope – rob, stone – stock, shock – short, more – mode, pore – for; prop – probe

/**ju:**/ fume, tune, mute, muse, tube; /ʌ/ mug, cut, lump, gut, run; /**ə:**/ lurk, murk, spurt, surd, surf; /**j**ʊ**ə**/ lure, cure, pure

pump – puff, pub – puce, cut – cure, hurt – hut, mute – mud, mush – amuse.

/ **æ** /	/ **e** /	/ **i** /	/ **i** /	/ **e** /	/ **æ** /	/ **i** /	/ **i:** /	/ɔ:/	/ɔ/	/**ju:**/	/ ʌ /
sand -	send -	sin	fill -	fell -	fan	fill -	feel	hall -	hot	tune -	tun
pan -	pen -	pin	sit -	sell -	sack	bit -	beat	call -	cod	abuse -	bus
tan -	ten -	tin	lip -	less -	land	sit -	seat	mall -	mop	huge -	hug
back -	beg -	big	kill -	kept -	cat	lip -	leap	talk -	top	mute -	must
mat -	met -	mix	nick -	net -	nap	fit -	feet	sort -	sop	fume -	fun

Table II

a		**o**		**e**		**u**		**i/y**	
сочетание	произношение	сочетание	произношение	сочетание	произношение	сочетание	произношение	сочетание	произношение
au aw ay ai	[ɔ:] [ei]	oe oa oi oy ou oo ow	[əʊ] [ɔi] [aʊ] [əʊ] [u:] [u] [əʊ] [aʊ]	ei ey eu ew ee ea	[ei] [ju:] [i:]	ue ui	[ju:]	ie iy	[ai]

[ei] M**ay**, day, hay, say, pay, lay, nay, play

[ei] Sp**ai**n, rain, drain, plain, main, stain **Ho** *s**ai**d [sed]*

[ɔ:] **au**thor, fraud, fraught, autumn

[ɔ:] s**aw**, draw, awful, bawl

[i:] r**ea**d, meat, seat, lead, teach, dream, clean, deal

[e] h**ea**lth, wealth, death, bread, lead, dead, spread

[eɪ] gr**ea**t, break, steak

[i:] s**ee**, street, keep, feed, seed, seem, free, cheese

[eɪ] **ei**ght, freight; pr**ey**, they, convey **Ho** *rec**ei**ve [rɪ′si:v], conc**ei**ve [kən′si:v]*

[ju:] n**ew**, few, sew, dew, lewd, nephew; **Eu**rope, deuterium **Ho** *cr**ew** [kru:]*

[aɪ] bel**ie** [bɪ′lai] **Ho** bel**ie**f [bɪ′li:f]

[əʊ] b**oa**t, coal, coach, coat, goat, road; p**oe**m, poet

[ɔɪ] c**oi**n, point, poison, soil; t**oy**, boy, soy

[əʊ] s**ou**l, poultry **Ho** *b**ou**ght [bɔ:t]; s**ou**p [su:p], r**ou**te [ru:t]; c**ou**sin[′kʌzn]*

[au] b**ou**nd, sound, noun, south **Но** *s**ou**gh[sʌf], tough [tʌf], touch [tʌʧ]*

[u:] s**oo**n, moon, food, hoof, fool, pool

[u] b**oo**k, look, took, hook, foot, good **Но** *p**oo**r [puə]; bl**oo**d [blʌd]*

[əʊ] b**ow**ls, tow, row, know, slow

[au] c**ow**, bow, row, sow, towel, town, down

[u:] tr**ue**, blue; j**ui**ce.

Table III

<table>
<tr><th colspan="2">a</th><th colspan="2">o</th><th colspan="2">e</th><th colspan="2">u</th><th colspan="2">i/y</th></tr>
<tr><td>сочетание</td><td>произношение</td><td>сочетание</td><td>произношение</td><td>сочетание</td><td>произношение</td><td>сочетание</td><td>произношение</td><td>сочетание</td><td>произношение</td></tr>
<tr><td>w + r

w+r+согл</td><td>[ɔ:]

[ɔ:]</td><td>o + ld</td><td>[əʊ]</td><td rowspan="6">ew</td><td rowspan="6">[ju:]</td><td colspan="2" rowspan="6">r + u
согл.+ l + u [u:]
j + u</td><td rowspan="6">i + nd
i + ld
i + gn</td><td rowspan="6">[ai]
(gn не произ-носится)</td></tr>
<tr><td></td><td></td><td>w+or+ согл.</td><td>[ə]</td></tr>
<tr><td>w+a+согл</td><td>[ɔ:]</td><td rowspan="3">ow</td><td rowspan="3">[aʊ]
[əʊ]</td></tr>
<tr><td>a + l + k

a + l + согл.</td><td>[ɔ:]

[ɔ:]</td></tr>
<tr><td>a + l + f
a + l + m
a + l + ve</td><td>[ɑ:]</td><td rowspan="2"></td><td rowspan="2"></td></tr>
<tr><td>a + ss, sp, st, sk, nce, nch, nf, ff, ft, th</td><td>[ɑ:]</td></tr>
</table>

[ɑ:] calf, calm, class, grass, after, grasp, chance, bath

[ɔ:] chalk, call, fall, small, all; war, walk, water, warm;

[ɔ] wash, wasp, what

Чтение согласных букв и их сочетаний

[k] cap, clean, back [ɡ] game, big, go [ks] box, fox, wax

C **G** **X**

[s] cent, cite, face, cycle [ʤ] gentle, gin, gym, page [ɡz] exist, exam

S [s] same, mass, cats [z] plays, reads, easy, noses [ʒ] pleasure, measure

ck [k] luck, clock
sh [ʃ] she, ship
ch [tʃ] cheese, chat
tch [tʃ] catch, sketch
th [ð] this, that
th [θ] thin, think
ph [f] photo, phone
qu [kw] question, quick
kn [n] knife, knee
ng [ŋ] long, ring
nk [ŋk] think, link

wh + o [h] who, whose, whole

wh + согласные [w] what, when, where

wr в начале слова перед гласными [r] write, wrong

Слоги.

Слог — это минимальная фонетико-фонологическая единица. Слог не имеет связи с формированием и выражением смысловых отношений. Это чисто произносительная единица. В слоге группируются звуки разной степени звучности, наиболее звучные — слогообразующие, остальные — неслоговые. При письме слоги записываются с помощью знаков — букв. В английском языке слогообразующим является гласный звук, поэтому в слове столько слогов, сколько в нём гласных: family (3 слога), happy (2 слога), ill (1 слог). Слоги бывают открытыми (оканчиваются на гласный звук) и закрытыми (оканчиваются на согласный звук).

Ударение.

Словесное ударение – это выделение слога в слове. В транскрипции обозначается знаком [ˈ] перед ударным слогом. Ударение в подавляющем большинстве английских двусложных слов

падает, как правило, на начальный слог, если только он не представляет собой префикс: happy [ˊhæpi]. В подавляющем большинстве трехсложных и многосложных слов ударным слогом является третий слог: engineer [ˌen ʤiˊniə].

Фразовое ударение – более сильное произнесение слов в предложении по сравнению с другими словами (неударными). В английском языке под ударением находятся знаменательные слова: существительные, прилагательные, смысловые глаголы, числительные, наречия, вопросительные и указательные местоимения. Неударными обычно бывают служебные слова (артикли, союзы, предлоги и вспомогательные глаголы), а также личные и притяжательные местоимения.

Логическое ударение – выделение по смыслу в случае необходимости слова, которое представляется говорящему наиболее важным. Под ударением могут оказаться и такие слова, которые обычно бывают неударными, и, наоборот, знаменательные слова, обычно имеющие фразовое ударение, могут его терять. Логическое ударение может не совпадать с фразовым.

Интонация.

Интона́ция (лат. intonō «громко произношу») — совокупность тона (мелодики речи), громкости, темпа речи и её отдельных отрезков, ритмики. Интонация в сочетании с соответствующей грамматической структурой предложения и его лексическим составом является важным средством выражения значения высказывания. Наиболее изученными компонентами интонации являются мелодика и ударение. В английском языке имеются два тона: нисходящий и восходящий.

Нисходящий тон выражает законченность высказывания, категоричность. Утвердительные предложения произносятся с нисходящим тоном. Нисходящий тон в английском языке употребляется

в повествовательном и повелительном предложении. Падение тона в английском языке более резкое и глубокое.

Восходящий тон в английском предложении отличается от русского восходящего тона тем, что первый ударный слог произносится на довольно низком уровне, а подъём голоса происходит постепенно на последнем ударном слоге. Восходящий тон употребляется в высказываниях, требующих продолжения и завершения мысли, в просьбах, в конце общих вопросов, на которые может быть дан утвердительный или отрицательный ответ. Альтернативные вопросы произносятся с повышением тона в первой части (до союза or или) и падением во второй.

Нисходяще-восходящий тон часто употребляется в английской разговорной речи для выражения различного рода эмоций от сомнения до дружеского возражения. Он подразумевает не только утверждение, но и определенный его подтекст, например при мягком возражении, уточнении, предположении.

Sentence Patterns

ˈGive me a ↘ pencil, please. ˈGive this ˈpencil to ↘him. ˈDon't ˈgive us these ↘ pencils.

ˈLet's ˈread this ↘ text. ˈLet him ˈread this text ↘ aloud. ˈLet me ↘ help you.

ˈAsk her to ˈread this ↘ text. Ask him ˈnot to ↘ make it.

ˈPass them that ↘ book, please. ˈ Would you ˈpass me that ↗ pen, please.

ˊAre you a ↗ pharmacist? ˊ Do you ˊspeak ↗ English?

I ˈlike the ˈnew ↘ film. ˈDo you ˈlike the ˈnew ↗ film?

It is ↘ cold. ˈIs it ↗cold? ˈ Yes, it ↘ is. ↘ No, it is ↘ not cold today. It is ↘ warm.

What ↘ time is it now? It is ˈfive o' ↘ clock. What ↘ day is it today? It is ↘ Monday.

PART I

UNIT I

PHARMACY: ITS HISTORY AND THE FUTURE

Pharmacy is the science and technique of preparing as well as dispensing drugs and medicines. It is also considered as the art of preparing medicinal products, or a place where such substances are sold. The mortar and pestle are one of the internationally recognized symbols to represent the pharmacy profession. Also, the green Cross is used in Greece, Spain, Italy, Argentina, France, Poland, the United Kingdom, Russia and other countries.

TEXT 1. WHAT IS PHARMACY?

Pharmacy is the health profession that links the health sciences with the chemical sciences. The scope of pharmacy practice includes more traditional roles such as compounding and dispensing medications, and it also includes more modern services related to health care, including clinical services, reviewing medications for safety and efficacy, and providing drug information. Pharmacists, therefore, are the experts on drug therapy and are the primary health professionals who optimize medication use to provide patients with positive health outcomes.

The word pharmacy is derived from its root word *pharma* which was a term used since the 15th–17th centuries. However, the original Greek roots from "Pharmakos" imply sorcery or even poison. In addition to pharma responsibilities, the pharma offered general medical advice and a range of services that are now performed solely by other specialist practitioners, such as surgery and midwifery. The pharma often operated through a retail shop which, in addition to ingredients for medicines, sold tobacco and patent medicines. The pharmas also used many other herbs not listed. The Greek

word Pharmakeia (Greek: φαρμακεια) derives from Greek: φάρμακον (pharmakon), meaning "drug" or "medicine".

In its investigation of herbal and chemical ingredients, the work of the pharma may be regarded as a precursor of the modern sciences of chemistry and pharmacology, prior to the formulation of the scientific method.

The field of pharmacy can generally be divided into three main disciplines:

Pharmaceutics that concerns on how to convert medication and drugs to suitable drug dosage forms;

Pharmaceutical Sciences including pharmaceutical and medicinal chemistry, pharmacognosy, pharmacy technology, pharmacy management and economics and pharmacology;

Pharmacy practice that concerns dispensing medication correctly. In the late 20th century, this field has developed into hospital pharmacy and clinical pharmacy. All of these fields are concentrated on optimizing patient care.

The boundaries between these disciplines and with other sciences, such as biochemistry, are not always clear-cut; and often, collaborative teams from various disciplines research together.

Pronunciation

1. Read and learn the following terms:

pharmacy [ˊfɑ:məsɪ], pharmaceutical [ˌfɑ:məˊsju:tɪk(ə)l], pharmaceutics [ˌfɑ:məˊsju:tɪks], pharmacist [ˊfɑ:məsɪst], pharmacology [ˌfɑ:məˊkɔləʤi], pharmacopoeia [ˌfɑ:məkəˊpiə], pharmacodynamics [ˌfɑ:məkɔdai ˈnæmiks].

2. Find pronunciation of the following words in a dictionary and pronounce them properly. Use the words in your own sentences: science,

chemistry, health, practice, service, medicine, herb, discipline, drug, research, care, safety.

Vocabulary

A. Read and translate the following definitions:

a) *Pharmacology* studies how drugs interact with biological systems. This field encompasses pharmacokinetics and pharmacodynamics. Pharmacology is highly interdisciplinary.

b) *Medicinal Chemistry* studies how drugs interact with biochemicals, and how drugs are discovered and created.

c) *Pharmacognosy* is the study of drugs derived from natural sources.

d) *Pharmaceutics* studies how drugs dosage forms are made.

e) *Pharmacy Practice* deals with interactions with patients to optimize drug therapy.

B. Match these words with their Russian equivalents:

1 health care	a) медицинская химия
2 chemical science	b) клинические услуги
3 clinical services	c) медработники
4 health professionals	d) химическая наука
5 medicinal chemistry	e) здравоохранение

Translate the following using a dictionary:

Фармация - это комплекс научно-практических дисциплин, изучающих проблемы изыскания, исследования, изготовления и отпуска лекарственных средств (the discovery, development, preparation and dispensing). В комплексе с фармакологией она составляет науку о лекарствах. К фармации относятся фармацевтическая химия, технология фармацевтических препаратов и лекарственных форм, фармакогнозия,

организация и экономика фармации и др. разделы. Перспективное направление в фармации – биофармация, изучающая зависимость эффекта лекарств от формы применения. Специалисты в области фармации называются фармацевтами. К фармацевтическим учреждениям относятся научно-исследовательские институты, лаборатории и предприятия, изготовляющие лекарственные средства; аптеки, аналитические лаборатории.

Comprehension

A. Are the following statements true (T) or false (F)?

1. Pharmacy is the theoretical science.
2. Modern pharmacy is homeopathic science.
3. The word derives from the Greek: φάρμακον (pharmakon), meaning "drug" or "medicine".
4. Pharmacists are the experts on drug therapy.
5. Pharmacy is the health science that studies the use of drugs in biological systems.
6. A pharmacist is trained in a professional program for 7- 9 years.
7. The field of Pharmacy is divided into five primary disciplines.

B. Answer the following questions:

1. Is there any difference between pharmacy and pharmaceutics? 2. What disciplines do pharmaceutical sciences include? 3. Are the boundaries between pharmacy disciplines clear-cut? 4. What is the aim of pharmacy practice?

Speaking

Discuss the topic "Pharmacy is my call"

Writing

Read and write a translation of the following definitions:

Pharmacy is a key player in primary and preventive health care and is defined as the science of the composition, use and dispensing of drugs. It is applied to the act of preparing, preserving and compounding medicines, according to the prescriptions of physicians.

Pharmacoinformatics is considered another new discipline, for systematic drug discovery and development with efficiency and safety.

Active grammar

Articles

Countable and uncountable nouns

The verb *to be* in the Present, Past and Future Simple Tense

A. Insert articles where necessary:

1. Can I have …. coffee, please? 2. Las Vegas is … place where you can spend …. lot of money. 3. Travelling to …. Egypt is not expensive. 4. She was in … Britain for two weeks. 5. Sheila was offered … job in …. pharmacy. 6. Can you bring me … glass of …. water, please? 7. I'll see you in …. morning. 8. "Could you pass me … oranges?" – "Here you are". 9. "Would you like …. cold drink?" "I'd love one. I'm very thirsty". 10. …. apple …. day keeps ….doctor away. 11. I'll be back …. next week. 12. What … lovely day! 13. "What's your job?" " I'm … pharmacist". 14. Can you tell me … time, please? 15. … Italians are famous for their pizza. 16. … Amazon is the largest river in …. world, although it is not …. longest. 17. … friend of mine is studying pharmacy at …. University. 18. … lunch will be served at one o'clock, so don't be late. 19. It's very important that …. young eat …. balanced diet while they are growing. 20. … English talk …. lot about … weather. 21. When I finish my studies, I'm going to …. United States for ….. year. 22. Brussels is …. capital of Belgium. 23. Texas is famous for … oil and cowboys.

B. Choose the correct form:

1. Your money **is/are** on the table in the dining room. 2. The advice you gave me **was/were** really useful. Thanks. 3. There **has/have** been a lot of bad news recently. 4. Your homework **was/ were** late. Please do it sooner next time. 5. Measles **is/are** a contagious disease. 6. These trousers **is/are** too big for you. 7. Where **is/are** my glasses? 8. Although money **is/are** not essential to happiness, happy people usually have enough. 9. Knowledge **is/are** power. 10. Bad news **has/have** wings. 11. Oh, no! The rice **has/have** gone all over the floor! 12. **Does/Do** the information about the museum include the opening times? 13. The United States **have/has** a vast territory. 14. The police **are/is** coming. 15. Maths **was/were** my favourite subject at school. 16. Physics **study/studies** matter and motion. 17. Ten miles **is/are** a long distance to walk.

C. Translate the following:

1. На какой улице находится отель Хилтон? 2. Я немного устал, но не голоден. 3. Жизнь коротка, искусство вечно. 4. Богатство ничто, счастье все. 5. Ваша теория весома (sound), но расчеты (calculations) неверны. 6. Какой вы человек? 7. Я собираюсь объездить весь мир автостопом (to hitchhike round the world.) 8. Из какой вы страны? 9. Это хороший фильм. Тебе следует его посмотреть. 10. Он относится ко всему скептически (to be skeptic about). 11. Ему никогда нескучно, у него слишком много работы. 12. Том не интересовался политикой.

D. The following are the most common uncountable nouns:

accommodation, advice, behaviour, blood, business, cancer, chewing gum, chemotherapy, damage, education, food, gold, happiness, health, information, knowledge, life, luck, medicine, money, news, patience, progress, research, safety, time, traffic, trouble, wealth, work.

E. Common plural nouns:

clothes, jeans, pants, pyjamas, shorts, tights, trousers; glasses, sunglasses; scissors, pliers, tongs, pincers, forceps.

F. 1. Write the plural form of the following nouns: study, day, property, curriculum, examination, system, phenomenon, laboratory, area, science, drug.

2. Write the singular form of the nouns: schools, medications, cells, subjects, genetics, forms, services, methods, health care professionals.

G. Translate the following into English:

Меня зовут Елена Иванова. Мне 18 лет. Я родилась в Уфе. Это мой родной город (home town). Я учусь в медицинском университете на фармацевтическом факультете. Я первокурсница. Моя семья небольшая. Кроме родителей у меня есть старшая сестра. Мои родители врачи. Они любят свою работу. Моя сестра на последнем курсе стоматологического факультета. Она будет стоматологом. Мне нравится учиться в университете. Я мечтаю стать хорошим провизором.

H. Translate the following into Russian:

1. I was born into a family of doctors. 2. Moscow is my home town. 3. I like swimming, dancing and going out with my friends. 4. She will make a good doctor. 5. Studying is very important to me. 6. He is positive thinking and career oriented. 7. He is good at genetics. I think he‘ll be a prominent scientist. 8. I’m keen on literature. 8. We are optimists. We are optimistic about our future. 9. Jane isn’t at work. She’s on holiday. 10. I’m not going to do any work this evening. 11. We are still in the same job. 12. They were happy to help their friends. 13. She is at Medical University. 14. I am in my first year. 15. He’ll be back very soon.

TEXT 2. HISTORY OF PHARMACY

The history of pharmacy as an independent science is relatively young. The origins of pharmacy back to the first third of the nineteenth century.

The earliest known compilation of medicinal substances was an Indian Ayurvedic treatise [aɪər´veɪdə ´tri:tɪz] (6th century BC). However, the earliest text as preserved dates to the 3rd or 4th century AD. India has a great history of medicine and patient care.

Ancient Egyptian pharmacological knowledge was recorded in various papyri [pə´paɪrai] such as the Ebers Papyrus of 1550 BC, and the Edwin Smith Papyrus of the 16th century BC. In Ancient Greece there was a group of experts in medicinal plants. Probably the most important representative was Diocles of Carystus (4th century BC). He is considered to be the source for all Greek pharmacotherapeutic treatises between the time of Theophrastus and Dioscorides. The Latin translation De Materia Medica (Concerning medical substances) was used as a basis for many medieval texts, and was built upon by many middle eastern scientists during the Islamic Golden Age.

The advances made in the Middle East in botany and chemistry led medicine in medieval Islam substantially to develop pharmacology. Muhammad ibn Zakarīya Rāzi (Rhazes) (865-915), for instance, acted to promote the medical uses of chemical compounds. Al-Biruni (973-1050) wrote one of the most valuable Islamic works on pharmacology entitled Kitab al-Saydalah (The Book of Drugs), where he gave detailed knowledge of the properties of drugs and outlined the role of pharmacy and the functions and duties of the pharmacist. Ibn Sina (Avicenna), too, described no less than 700 preparations, their properties, mode of action and their indications.

In Europe pharmacy-like shops began to appear during the 12th century. In 1240 emperor Frederic II issued a decree by which the physician's and the apothecary's [ə´pɔθikəri] professions were separated. The first pharmacy in Europe (still working) was opened in 1241 in Trier, Germany. In

Europe there are old pharmacies (opened in 1317) still operating in Dubrovnik, Croatia and one in the Town Hall Square of Tallinn, Estonia dating from at least 1422. The oldest is claimed to be set up in 1221 in the Church of Santa Maria Novella in Florence, Italy, which now houses a perfume museum. The medieval Esteve Pharmacy, located in Llívia, a Catalan enclave, is also now a museum dating back to the 15th century, keeping old prescription books and antique drugs.

The earliest drugstores date to the Middle Ages. The first known drugstore was opened by Arabian pharmacists in Baghdad in 754, and many more soon began operating throughout the medieval Islamic world and eventually medieval Europe. By the 19th century, many of the drugstores in Europe and North America had eventually developed into larger pharmaceutical companies.

Most of today's major pharmaceutical companies were founded in the late 19th and early 20th centuries. Key discoveries of the 1920s and 1930s, such as insulin and penicillin, became mass-manufactured and distributed. Switzerland, Germany and Italy had particularly strong industries, with the UK, US, Belgium and the Netherlands following suit.

Pronunciation

1. Underline the silent letter in the following words:

sc<u>h</u>ool

knowledge, foreign, answer, receipt, half, knife, business, limb, muscle, knee, palm, pestle, temperature, column.

2. If the word ends in…/s/, /z/, /ʃ/, /tʃ/, or /dʒ/

…. the final *–s* is pronounced /iz/.

pharmacies, methods, drugs, sciences, terms, chooses, sizes, changes, watches, matches, stops, badges, items, approaches, diseases, boundaries, outcomes, bridges, practices, systems, dishes, issues, professionals.

Vocabulary

1. Match these words with their English equivalents from the text:

независимая наука, медицина, лекарственные растения, химические соединения, фармакотерапевтические трактаты, приготовление лекарств, рецепт, аптека, фармацевтические компании, назначение препарата, античные лекарства.

2. Look at these antonyms and synonyms. Give your own examples.

Adjective	Opposite (Adj.+ prefix)	Opposite (different word)
correct	incorrect	wrong
usual	unusual	strange/rare
formal	informal	casual
expensive	inexpensive	cheap
kind	unkind	cruel
intelligent	unintelligent	stupid
interesting	uninteresting	boring
fashionable	unfashionable	out of date

Comprehension

A. Answer the following questions:

1. Is the history of pharmacy young or old? 2. Is pharmacy connected to the medicine? 3. What countries have a great history of medicine and patient care? 5. What country was pharmacology developed in? 6. When pharmacy-like shop began to appear? 7. When the earliest drugstores appeared? 8. When did insulin and penicillin become mass-manufactured? 9. When did large pharmaceutical companies appear?

B. Match these words with their definitions

1. herbal medicine A. a medicine; a medicament; the act or process of treating with medicine; administration of medicine

2. acupuncture B. the process of accepting personal responsibility to keep ourselves healthy, and well physically, emotionally, mentally and spiritually

3. self-healing C. restoring and maintaining health through the stimulation of specific points on the body

4. folk medicine D. the study and use of medicinal properties of plants

5. medication G. longstanding remedies passed on and practiced by lay people

Writing

Write a translation of the following definitions:

Pharmacy (from the Greek φάρμακον = remedy) is a transitional field between the health sciences and the chemical sciences, as well as the profession charged with ensuring the safe use of medications. Traditionally, pharmacists have compounded and dispensed medications based on prescriptions from physicians. More recently, pharmacy has come to include other services related to patient care, including clinical practice, medication review, and drug information. Some of these new pharmaceutical roles are now mandated by law in various legislatures. Pharmacists, therefore, are drug therapy experts, and the primary health professionals who optimize medication management to produce positive health outcomes.

Active grammar

Adjectives and adverbs

The verb *to have* in the Present, Past and Future Simple Tense

A1. Read and translate the following adjectives paying attention to the negative prefixes and the most common suffixes:

prefixes - effective – **in**effective, wanted – **un**wanted, possible – **im**possible, regular – **ir**regular, moral – **im**moral, legal – **il**legal, pure –

impure, valid – **in**valid, responsible – **ir**responsible, real – **un**real, lucky – **un**lucky, logical – **il**logical, suitable – **un**suitable, happy – **un**happy, complete – **in**complete;

suffixes - use**ful**, hopeful; use**less**, helpless; fam**ou**s, courageous; form**al**, central; scientif**ic**, chem**ical**; eat**able**, vis**ible**.

A2. Look at the examples of comparative and superlative structures and translate the following sentences:

They want to become **better** problem-solvers. He's **slightly taller than** me. She's **much more mature than** he is. They're **just as good as** we are. It's **by far the biggest** car I've ever seen. **The faster** he drives, **the sooner** he'll get home. **The more** we study, **the more** we know. **The more** we forget, **the less** we know.

1. Он играет лучше, чем остальные игроки в команде. 2. Какой офис самый большой в мире? 3. Надейся на лучшее, но готовься к худшему. 4. Извините, где здесь ближайшая аптека? 5. Мой рабочий день длится дольше, чем это было раньше. 6. Я слышал, что новый метод лечения лучше старого. 7. Состояние этого пациента гораздо лучше сегодня. 8. Его друг более пессимистичен, чем он. 9. Она более чувствительна, чем ее сестра. 10. Гораздо комфортнее летать на самолете первым классом. (to travel first class on the plane). 11. Сегодня гораздо жарче, чем было вчера. 12. Его довод звучит гораздо убедительней. 13. Он молод и не так опытен, как его друг. 14. Они более удачливы. 15. Это задание менее трудное, чем предыдущее.

B. Underline the stressed syllable in adverbs below:

absolutely, actually, apparently, definitely, effectively, exactly, extremely, fortunately, incredibly, naturally, obviously, positively, practically, really, regularly.

Comparative and superlative adverbs:

Could you speak more slowly please?

She sings most beautifully

C1. The verb *to have* in the Present, Past and Future Simple Tense

Complete the sentences with the correct form of **have** or **have got** taking into account the following information:

a) have and have got are both used for possession. Have got refers to the present and to all time. She has blond hair. She's got blond hair.

b) there are two forms for the question, the negative, and the short answer: Have you got any money? Yes, I have. Do you have any money? Yes, I do.

c) in all other tenses and verb forms, we use have, not have got:

I didn't have a car until I was twenty-five.

I've had a headache all morning.

I'll have a steak, please,

d) have, not have got is used for many actions and experiences:

have breakfast, have a break, have a shower, have a bad dream, have a look, etc.

1. I'm starving. I _____anything to eat last night.
2. "Why's Ann taking some aspirin?" Because she _____ a headache.
3. "What would you like to drink? "I _____ a Coke, please."
4. "Can you lend me two pounds?" Sorry. I ____any money on me at all.
5. Maria _____her baby. It's a girl. They're calling her Lily.
6. David! Can I _____a word with you for a moment?
7. What time _____ she usually _____lunch? About 1.00.
8. How was the party last night? _____you _____a good time?
9. He_____ nothing to do with it.
10. How much money _____you _____?
11. " What's wrong? " " I _____something in my eye.

12. I’m not going to work today. I _____a bad cold.

13. She doesn’t feel very well. She _____toothache.

14. He _____ a lot of work to do yesterday.

15. They usually _____ a big breakfast in the morning.

16. Do you _____ any idea how much radiation that phone in your pocket is giving out?

17. I'm lonely. I _____ nobody to talk to.

18. We’ll _____ no more of that.

C2. Translate the following sentences:

1. У нее много работы. 2. У меня нет ничего общего с этими людьми (to have nothing to do with). 3. У нас занятия по английскому языку дважды в неделю. 4. Она обычно обедает в офисе из-за нехватки времени. 5. У этого студента хорошая память. 6. Это лекарство обладает хорошими лечебными свойствами. 7. У этого препарата много побочных действий. 8. Граждане нашей страны имеют право на образование и здравоохранение. 9. У него была хорошая возможность продвинуться по службе (to promote), но он не воспользовался ею. 10. Они хорошо провели время за городом. 11. Мне необходимо сходить в аптеку (have to). 13. Я хочу пить. Можно мне немного воды? 13. Если тебе нечего делать, не делай этого здесь. 14. Фармакология имеет два раздела: общую и частную. 15. Надеюсь, летом у меня будет больше свободного времени. 16. Сейчас мне надо идти. 17. Где ты обедаешь? 18. Я не сомневаюсь (no doubt). 19. Ей и сказать-то нечего. 20. У меня выходной каждую пятницу (day off).

TEXT 3. THE FUTURE OF PHARMACY

Pharmacy, as the third largest health profession, has a central role in assuring the safe and consistent use of medicines and as a provider of wider care. Pharmacists are working in collaboration with many other healthcare

organizations to shape the future of pharmacy. In the coming decades, they are expected to become more integral within the health care system. Pharmacists are currently playing a much bigger part in helping patients get the best from their use of medicines. A broader role for pharmacists as care-givers will be central to securing the future of pharmacy.

The role of pharmacy is changing, with a particular focus on the shift from dispensing and supply towards services that help people to get the most from their medicines and stay well. Future models of care delivered through pharmacy depend fundamentally on what is happening, and likely to happen, in the wider national health system. The system faces profound challenges, related to the economic context, and the requirement is to improve the quality of care for patients, and in particular for those living with long-term conditions. Pharmacists are to assume the role of supporting patients with effective medicines use and by serving as care-givers in the health system, working in close partnership with other health and social care professionals as well as with patients. There is a stronger focus on assuring and improving the quality of care – all health care providers must get better at finding out what patients want and need, and delivering this with safety, consistency and compassion. Pharmacy will have to make its case for delivering new models of care, based on evidence of cost and clinical effectiveness.

Pronunciation

1. Put the following words in the correct columns:

cut, push, brush, cushion, ugly, full, does, drug, lucky, bush, through, such, understand, bull

/**u**/	/ ʌ /
push	drug

2. Underline the stressed syllable in each of the words

Ambitious

practitioner, diagnosis, physiology, research, science, development, determine, therapy, terminology, feeling, efficiency, problem, experience, patient, residency

Vocabulary

Can you find sentences in the text containing the following word combinations: система здравоохранения, клиническая фармация, фармацевт-консультант, навыки ухода за пациентами, лечение пациента, тщательный анализ, согласование лечения.

Speaking

Discuss the role of pharmacy in modern society

Comprehension

Read and translate the following information:

In most jurisdictions (such as the United States), pharmacists are regulated separately from physicians. These jurisdictions also usually specify that only pharmacists may supply scheduled pharmaceuticals to the public, and that pharmacists cannot form business partnerships with physicians or give them "kickback" payments. However, the American Medical Association (AMA) Code of Ethics provides that physicians may dispense drugs within their office practices as long as there is no patient exploitation and patients have the right to a written prescription that can be filled elsewhere. 7 to 10 percent of American physicians practices reportedly dispense drugs on their own.

Active grammar

Pronouns and possessive determiners

Impersonal Sentences and Pronouns

Types of Questions

A. Pronouns and possessive determiners

Insert the pronouns

1. Scientists are working hard to find cures for lots of diseases, but ….. haven't found a cure for the common cold yet. 2. Is this…..coffee? 3. I haven't seen ..... for ages. 4. … always has a shower at about half past six in the morning. 5. … salary is paid into … bank account every month. 6. … English is getting better. 7. He told …. to hurry up. 8. …. is involved in all the discussions. 9. Alexander Fleming discovered penicillin, but …. did it by mistake. 10. Could …. give …. that gadget? 11. Can't …. do it yourself? 12. Give … that book. Give it to …. 13. I can do this job alone. … don't need … help. 14. Is everything clear to ….? 15. How are…..? 16. I can do it …... . 17. I'm sorry … was late for … party. 18. The company has offices in many places but …. head office is in New York.

B. Impersonal Sentences

Translate the following sentences form English into Russian and from Russian into English:

B1. 1. It is easy enough to solve this problem. 2. Is it cold outside? 3. It is essential to take your medication correctly to decrease your health care costs. 4. It is necessary for pharmacists to talk in plain, non-medical language to help patients understand their medications and health conditions. 5. Was it six o'clock when the film started? 6. It is important to be up to date on every aspect of your profession. 7. It is hard for students to apply for a good job. 8. It is impossible to find a needle in the haystack. 9. It will not take me many efforts to finish my work. 10. Is it essential to finish work in time? 11. It is not easy to get accustomed to being criticized. 12. It is most probable that

there is a mistake in their calculation. 13. It’s getting dark, switch on the light, please. 14. It is thought the drinks stop drugs from entering the bloodstream and getting to work in the body. 15. It seems that there is no end to this. 16. It wasn't dark yet when we got back. 17. It is always desirable to appear friendly and self-confident to new people. 18. It will be warm tomorrow.

B2. 1. Далеко ли аптека отсюда? 2. Легко ли учить английский язык? 3. Необходимо много двигаться, если хочешь быть здоровым. 4. Который час сейчас? – Уже поздно. Темнеет. 5. Важно знать это правило. 7. Нелегко учиться в университете. 8. Сейчас осень. На улице холодно, дождливо и ветрено. 9. Пора идти. Уже поздно. 10. Это понять невозможно. 11. Когда устраиваешься на работу (to apply for a job), необходимо произвести хорошее первое впечатление. 12. Трудно было решить эту проблему сразу. 13. Лекарства необходимо запивать водой. 14. Во время устного перевода важно понять основную мысль сказанного (to grasp the main idea).

B3. 1. It’s important to keep in mind that the effects produced by any drug can vary significantly. 2. If one (somebody, you) wishes to make oneself thoroughly unpopular, one has merely to tell people the truth. 2. You can find a lot of interesting information on the Internet. 3. They say that the new project is promising. 4. One should be careful when crossing the road. 5. One must always keep one’s word. 6. We can improve our skills by practice. 7. By listening to people attentively one can pick up a lot of valuable information. 8. We should respect each other. 9. We should mind our own business. 10. They don’t let you smoke in here. 11. They serve good food here.

B4. 1. Нельзя жаловаться (to complain about) на свое здоровье и проблемы другим людям. 2. Нельзя быть бестактным в обращении с людьми. 3. Необходимо быть дружелюбными (be friendly). 4. Здесь

нельзя парковаться. 5. Эту книгу можно купить везде. 6. Говорят завтра будет дождь. 7. Собираются повысить налоги (to increase taxes). 8. Нельзя выучить английский за шесть недель. 9. Если хочешь быть успешным – трудись.

C. Making questions

Put the words in the right order to make questions

1. got you any have money on you?
2. you are where from?
3. aren't a student you are you?
4. were you where born?
5. is what job your?
6. your is job interesting?
7. you what are in interested?
8. do you a headache have?
9. does he lunch have ?
10. job tiring is boring your or

UNIT II

PHARMACEUTICS

Pharmaceutics, the science and engineering of drug dosage form design, is a highly multi-disciplinary field requiring expertise in chemistry, engineering, pharmacy, materials science, mathematics, and the biological sciences. The area of research ranges from fundamental studies of the physicochemical properties of drugs and related molecules to dosage forms and delivery systems.

TEXT 1. PHARMACEUTICS: WHAT IS IT?

Pharmaceutics [UK /ˌfɑːməˈsjuːtɪks/ US / ˌfɑrməˈsuːtɪks] is the discipline of pharmacy that deals with the process of turning a new chemical entity (NCE) into a medication to be used safely and effectively by patients. It examines the development, production and characterization of dosage forms, as well as the disposition and action of drugs in the body. It focuses on the study of the physical, chemical and biological properties of drugs and dosage forms. There are many chemicals with known pharmacological properties, but a raw chemical cannot be administered, as such, to the patient.

Pharmaceutics is the study of relationships between drug formulation, delivery, disposition and clinical response. It helps relate the formulation of drugs to their delivery and disposition in the body. Pharmaceutics deals with the formulation of a pure drug substance into a dosage form such as Tablet; Capsule; Hard Capsule; Soft Capsule; Microencapsule; Suppository; Injection; Pessary; Cream; Ointment; Eye drop; Ear drop; Inhalation; Nasal spray; Transdermal patch; Emulsion; Suspension; Dispersion; Solution; Implant; Lotion; Inserts; Powder; Gels; Paste.

Pure drug substances are usually white crystalline or amorphous powders. Historically before the advent of medicine as a science it was

common for pharmacists to dispense drugs as is. Most drugs today are administered as parts of a dosage form. The clinical performance of drugs depends on their form of presentation to the patient.

Pronunciation

1. Do you know these pronunciation terms?

a) How many syllables are there in the following words?

b) Where's the main stress?

Pharmaceutics, design, medicine, research, property, performance, dosage, medication, laboratory, management, department, patient, family, practice, technology, formulation.

2. The letters -*oo*- are pronounced in different ways.

Examples: soon = / **u**: / book = / **u** / flood = / ʌ /

Write all the –*oo*- words in the correct columns:

good food cook spoon pool blood football foolishly took woolen afternoon stood stool roof boom tool mood look

Vocabulary

1. Translate the following definitions of Branches of pharmaceutics:

1. *Pharmaceutical technology* focuses on improving the safety, quality and efficiency of pharmaceutical manufacturing through the application of relevant technology.

2. *Pharmacokinetics* is a branch of pharmacology dedicated to the determination of the fate of substances administered externally to a living organism.

3. *Pharmacogenomics* is the technology that analyses how genetic makeup affects an individual's response to drugs.

4. *Pharmacodynamics* is the study of the biochemical and physiological effects of drugs on the body.

5. *Pharmaceutical formulation* is the process in which different chemical substances, including the active drug, are combined to produce a final medicinal product.

6. *Pharmaceutical manufacturing* is the process of industrial-scale synthesis of pharmaceutical drugs by pharmaceutical companies.

2. Read, translate and memorize the following dosage forms:

A tablet; capsule; hard capsule; soft capsule; microencapsule; suppository; injection; pessary; cream; ointment; eye drop; ear drop; inhalation; nasal spray; transdermal patch; emulsion; suspension; dispersion; solution; implant; lotion; inserts; powder; gels; paste.

Comprehension

A. Answer the following questions on the text:

1. What is pharmaceutics? 2. What does pharmaceutics examine and what does it focus on? 3. What are pure pure drug substances? 4. What are dosage forms of a pure drug substance? 5. Can a raw chemical be administered to the patient?

B. Read and translate the following short text:

Pharmacopoeia, pharmacopeia, or pharmacopoea, (literally, "drug-making"), in its modern technical sense, is a book containing directions for the identification of samples and the preparation of compound medicines, and published by the authority of a government or a medical or pharmaceutical society.

Descriptions of preparations are called monographs. In a broader sense it is a reference work for pharmaceutical drug specifications.

There are national and international pharmacopoeias. All the pharmacopoeias were issued under the authority of government, and their instructions have the force of law in their respective territories.

Writing

Write the translation of the following:

Фармакопе́я — сборник официальных документов, устанавливающих нормы качества лекарственного сырья (crude drugs) — медицинских субстанций, вспомогательных веществ, диагностических и лекарственных средств и изготовленных из них препаратов. Положения фармакопеи основаны на достижениях фармацевтической химии и ее фармацевтического анализа, его критериев, способов и методов. Этот документ включает указания по изготовлению, проверке качества лекарств. Он определяет высшие дозы препаратов и устанавливает требования к лекарственному сырью.

Active Grammar

The construction there + to be

Indefinite pronouns: some, any, no, every and their derivatives

Relative clauses

A1. Translate the following sentences with the construction there + to be into Russian:

1. There is a catch 22 (замкнутый круг) in trying to find a job. You need experience to get a job and you need a job to get experience. 2. There are many ways of solving such a problem. 3. There are many things that I would like to say to you. 4. How many students are there in your group? 6. There is no doubt he is a good specialist. 7. There were no stars in the sky. 8. Do you think there will be a lot of people at the party on Saturday? 9. How much money was there in your bag? 10. There is a desk and five chairs in the room. 11. There are a lot of problems with this theory. 12. There was no time to spare. 13. There are fewer than 9.000 students, a quarter of them are postgraduates. 14. There are purpose-built premises for science and technology. 15. There is nothing to do in this town. 16. There was no-one on the bus. 17. The office is very small. There’s space only for a table and a

chair. 18. Look! There has been an accident. Call an ambulance! 19. While there's a will there's a way. 20. Will there be a concert tonight?

A2. Translate into English:

1. Есть ли вода в сосуде? 2. В лаборатории много приборов (devices). 3. Извините. Есть ли где-нибудь поблизости аптека? 4. В нашем университете семь факультетов. 5. Что сегодня на завтрак? 6. Нет плохой погоды, есть плохая одежда. 7. После обеда будет дождь. 8. Нет дыма без огня. 9. Меня что-то тревожит (worrying me). 10. В сутках 24 часа. 11. Нет сомнения, что эта книга богата полезными идеями (rich in ideas). 12. Он не любит свою работу, но у него есть возможность продвинуться по службе (a chance to promote). 13. На полках много лекарств. 14. В Интернете (on the Internet) много полезной информации. 15. Пока есть жизнь, есть надежда. 16. В аудитории стол и много стульев. 17. На небе нет звезд. 18. Рядом с нашим домом много аптек. 19. Для этого нет времени. 20. Не существует ни одного правила без исключения.

B. Indefinite pronouns: some, any, no and their derivatives:

Which is correct?

1. I've never seen *something/anything* like it. 2. If *somebody/anybody* predicts *something/anything*, they say what they think will happen in the future. 3. *Everybody/somebody* knows that children need about eleven hours sleep and adults sleep for about eight hours every night. 4. I'd like *some/any* information. 5. "*Someone/anyone* is at the door. It must be Mrs Jonhson from next door". 6. Is *anybody/somebody* home? 7. If you have *something/nothing* to do, don't do it here. 8. Please contact us if you have *any/some* information. 9. "Would you like *some/any* more cake?" "I'd love some. It's delicious". 10. Help yourself to food. You can have *anything/something* you want. 11. I'm looking for my keys. Has *somebody/anybody* seen them? 12. *Somebody/anybody* is coming. 13. I can't hear *anything/nothing*. 14. There's

nothing/anything like a good rest. 15. “Can I have some/any soup, please?” “Yes, of course. Help yourself”. 16. It’s hot in this office. I’m going out for some/any fresh air. 17**.** “Where are you going?” – “*Nowhere/anywhere*.” 18. *Nobody/anybody* is perfect. 19. I’m going to the pharmacy to get *some/any* drug for a headache. 20. Do you know *anything/something* about this pharmaceutical company?

D. Relative clauses

Insert the words in the box

where	which	that	who	whose

1. Here’s a leaflet …… will help explain the procedure. 2. Do you know any restaurants ……. they serve vegetarian dishes? 3. Can you remember …… told you about the new experiment? 4. This programme …… is totally free, protects your computer against viruses. 5. Here’s a photo of the hotel …… we stayed. 6. Jean …… mother is a pharmacist, wants to be a doctor too. 7. Where are the scissors …… I bought yesterday. 8. The noise …… they are making in the kitchen is horrible. 9. …… exactly is this new café? 10. That’s the man ….. daughter is a pop singer. 11. A coffee-maker is a machine …… makes coffee. 12. What’s the name of the man …. created the Internet? 13. There are a great many people ….. moods are affected by different weather. 14. He lives a house …. is 100 years old. 15. Do you know any restaurants ….. they serve vegetarian dishes? 16. It is believed that global warming, …. is causing ice caps to melt, will be the cause of more blizzards in the future. 17. Students…. want to become pharmacists must first complete a pre-professional track …. is typically two years in length. 18. Pharmacists are the primary health professionals …. optimise medication management to produce positive health-outcomes. 19. The people ….. work in the office are very friendly. 20. She works in a pharmacy….. is 85 years old. 21. He always asks me questions ….. are difficult to answer. 22. The man …. makes no mistakes does not usually do anything.

UNIT III
PHARMACEUTICAL SCIENCES

The Pharmaceutical sciences are a group of interdisciplinary areas of study involved with the design, action, delivery, disposition, and use of drugs. This field draws on many areas of the basic and applied sciences, such as chemistry, biology, mathematics, physics, and chemical engineering, and applies their principles to the study of drugs. As new discoveries advance and extend the pharmaceutical sciences, subspecialties continue to be added to this list. Importantly, as knowledge advances, boundaries between these specialty areas of pharmaceutical sciences are beginning to blur. Many fundamental concepts are common to all pharmaceutical sciences.

TEXT 1. MEDICINAL AND PHARMACEUTICAL CHEMISTRY

Reading A **Medicinal Chemistry**

Medicinal chemistry and pharmaceutical chemistry are disciplines at the intersection of chemistry, pharmacology and various other biological specialities, where they are involved for market of pharmaceutical agents, or bio-active molecules (drugs).

Compounds used as medicines are most often organic compounds, which are often divided into the broad classes of small organic molecules and "biologics". The latter are most often medicinal preparations of proteins. Inorganic and organometallic compounds are also useful as drugs.

In particular, medicinal chemistry encompasses synthetic organic chemistry and aspects of natural products and computational chemistry in close combination with chemical biology, enzymology and structural biology. All of them are aiming at the discovery and development of new therapeutic agents. Practically speaking, it involves chemical aspects of identification, and then systematic, synthetic alteration of new chemical entities to make

them suitable for therapeutic use. It includes synthetic and computational aspects of the study of existing drugs and agents in development.

At the biological interface, medicinal chemistry combines to form a set of highly interdisciplinary sciences, setting its organic, physical, and computational emphases alongside biological areas such as biochemistry, molecular biology, pharmacognosy and pharmacology, toxicology, and human medicine.

Reading B **Pharmaceutical Chemistry**

Pharmaceutical chemistry is the chemistry of drugs and pharmaceutical products: the synthesis, development, and study of molecules used in medicine and their interactions with biological agents.

Pharmaceutical chemists are involved in the development and assessment of therapeutic compounds. Pharmaceutical chemistry encompasses drug design, drug synthesis, and the evaluation of drug efficacy (how effective it is in treating a condition) and drug safety.

Drug discovery is the core of pharmaceutical chemistry. The drug discovery process includes all the stages of drug development, from targeting a disease or medical condition to toxicity studies in animals, or even, by some definitions, testing the drug on human subjects. Typically, conditions that affect a larger percentage of the population receive more attention and more research funding. Antiulcer drugs and cholesterol-reducing agents are currently the therapeutic areas of greatest emphasis. To develop a drug to target a specific disease, researchers try to understand the biological mechanism responsible for that condition. If the biochemical pathways leading up to the disease are understood, scientists attempt to design drugs that will block one or several of the steps of the disease's progress. Alternatively, drugs that boost the body's own defense mechanism may be appropriate.

Pronunciation

1. Read and translate the following word combinations:

Please – pleasure – pleasant, measure – measurable, sure – surely, assure – assurance, press – pressure – pressurize, treat – treatment, compare – comparison - comparative.

2. Put the Present Simple form of the verb in the correct column depending on the pronunciation of the ending:

does, likes, lives, finishes, translates, watches, passes, studies, carries, has, plays, goes, speaks, costs, pushes, thinks, buys, observes, helps, discusses, understands

/ **s** /	/ **z** /	/ **iz** /
likes	lives	watches

Vocabulary

Match these words with their definitions

1. phytotherapy	A. a drug is a substance which may have medicinal, intoxicating, performance enhancing or other effects when taken or put into a human body
2. bacteria	B. a biological preparation that improves immunity to a particular disease
3. illness	C. the study of the use of extracts from natural origin as medicines or health-promoting agents
4. drug	D. a large domain of prokaryotic microorganisms
5. vaccine	E. a state of poor health

Speaking

Speak on the following topics: “Chemistry”. “My favourite subject is Chemistry”. “The role of Chemistry in modern life”.

Writing

Write a translation of the following sentences:

The field of pharmaceutical chemistry is diverse and involves many areas of expertise. Natural-product and analytical chemists isolate and identify active components from plant and other natural sources. Theoretical chemists construct molecular models of existing drugs to evaluate their properties. These computational studies help medicinal chemists and bioengineers design and synthesize compounds with enhanced biological activity. Pharmaceutical chemists evaluate the bioactivity of drugs and drug metabolites. Toxicologists assess drug safety and potential adverse effects of drug therapy. When a drug has been approved for human studies, clinicians and physicians monitor patients' response to treatment with the new drug. The impact of pharmaceutical chemistry on the normal human life span and on the quality of life enjoyed by most people is hard to overestimate.

Discussion

Give the definitions of medicinal and pharmaceutical chemistry.

Discuss the difference between them.

Translation

Translate the following text on chemicals:

Chemicals can exist in several phases. For the most part, the chemical classifications are independent of these bulk phase classifications; however, some more exotic phases are incompatible with certain chemical properties. A phase is a set of states of a chemical system that have similar bulk structural properties, over a range of conditions, such as pressure or temperature. Physical properties, such as density and refractive index tend to fall within values characteristic of the phase. The phase of matter is defined by the phase transition, which is when energy put into or taken out of the system goes into

rearranging the structure of the system, instead of changing the bulk conditions. The most familiar examples of phases are solids, liquids, and gases. Many substances exhibit multiple solid phases. For example, there are three phases of solid iron (alpha, gamma, and delta) that vary based on temperature and pressure. A principal difference between solid phases is the crystal structure, or arrangement, of the atoms. Another phase commonly encountered in the study of chemistry is the aqueous phase, which is the state of substances dissolved in aqueous solution (that is, in water).

Active grammar

The Present Simple Tense

Determiners

A. Translate the following sentences:

1. Pharmacy is a key player in primary and preventive health care. 2. Pharmacy is the health profession that links the health sciences with the chemical sciences. 3. The pharmacies open at 8 o'clock and close at 9 o'clock. 4. We do a lot of different things in our free time. 5. Do you live near the city centre? 6. He works very hard. He starts at 7.30 and finishes at 8 o'clock in the evening. 7. The weather here is not very good. It often rains. 8. Your job is very interesting. You meet a lot of people. 9. Water boils at 100 degrees Celsius. 10. Some drugs are very expensive. They cost a lot of money. 11. The latest study shows that fruit juices can also reduce the power of medicines – potentially stopping them from doing any good. 12. It doesn't make any difference. 13. I need a pen. Do you have one? 14. Who knows the answer? 15. I'm fed up with my job. I want to do something different. 16. Pharmacy derives its name from the Greek root pharmakon, a drug. 17. Pharmacology is distinct from pharmacy, though the two overlap. 18. Vitamins are on the border between drugs and foods. 19. Many drugs are

chemically similar to active components of living tissues. 20. Prevention is the best remedy for this disease.

B. Write the negative:

1. I speak Spanish very well. 2. You know the answer. 3. He works very hard. 4. They do the same thing every day. 5. Money is everything. 6. I like the weather here. 7. She works in a pharmacy. 8. This drug is effective. 9. I go to work by bus. 10. The office is on the first floor. 11. Life is possible without water. 12. They are usually at home in the evenings. 13. These trains are very fast – they can travel at very high speeds. 14. The coffee beans grow well in Russia. 15. Most vitamins are synthesized in the human body.

C. Write the opposite (positive or negative)

1. I understand. 2. He doesn't smoke. 3. I don't want it. 4. They speak English well. 5. She doesn't go to school. 6. It's a cheap hotel. 7. He lives near the University. 8. He's fed up with his job. He wants to do something different. 9. I usually do my shopping in the city centre. 10. I don't like this book. It's not very interesting. 11. The pharmacies are closed. 12. I always drive to work. 13. I don't like my job. 14. Vitamins don't play a very important role in metabolism. 15. The kind of programming I do is not puzzle solving. 16. Healthcare is not a changing profession. 17. Alcohol doesn't have a very negative influence on the effect of medicines.

D. According to grammar signs, determine the part of speech of the word having the ending –s:

a) the third form of the verb in the Present Simple;

b) the possessive case of the noun;

c) the plural form of the noun:

1. Chemistry gives us not only new drugs but develops new and effective methods and instruments for diagnosing disease.

2. Mercury boils at t 357°, and solidifies at - 39° to a lead-like mass.

3. The water for drinking and domestic purposes is generally supplied by rivers, lakes and wells.

4. A healthy person's temperature varies during the day.

5. Water freezes at the temperature of O° C.

6. Drugs are chemical substances used in medicine in the treatment of diseases.

7. We must know everything about medicinal plants and their role in keeping man's health.

8. Every living cell includes a quantity of nucleic acids.

E. Put the words in the correct order to make sentences. Remember to begin the sentence with a capital letter.

always early work she finishes *She always finishes work early.*

1. like don't swimming I go because never I it

_____

2. often uncle in visit France we our

_____

3. clubbing absolutely Diana usually because loves she goes it

_____

4. sometimes you play do golf?

_____

5. ever bed to late we go hardly

_____

6. weekends does lie-in Jim at have always a?

_____

7. do what for a living do you?

F. Look at these determiners and translate the sentences:

Both, none of, all/all of them, everyone, whole, either…or, neither…nor, each

1. Both fruit and vegetables should be eaten to maintain a healthy diet.
2. None of the dishes was particularly tasty.
3. They all/All of them took part in the conference.
4. Everyone enjoined the movie.
5. All the group /the whole group passed their exam successfully.
6. He is either a surgeon or an anesthesiologist.
7. Would you like either a mug or a cup for drinking tea?
8. He is neither a surgeon nor an anesthesiologist. He is a therapist.
9. Each child should go to school.
10. Each of them dreams of becoming a real professional.
11. Each of these medicines has been tested.
12. None of them is going on holiday in September.
13. All of them are satisfied with their jobs.
14. He is neither a therapist nor a surgeon.
15. None of us remembered the name of the hotel we stayed at.

TEXT 2. PHARMACOGNOSY.

Pharmacognosy is the study of medicines derived from natural sources. It is also defined as the study of crude drugs. Pharmacognosy deals with the nature and sources of "natural drugs" - those obtained from plants or animals, either directly or indirectly. For example, with a drug such as quinine, this study involves the source, the commercial production, the marketing, the chief pure chemicals contained in the drug, and the uses made of the drug and its derivatives.

The word "pharmacognosy" is derived from the Greek words pharmakon (drug), and gnosis (knowledge). The term "pharmacognosy" was

first used by the Austrian physician Schmidt in 1811. Originally—during the 19th century and the beginning of the 20th century—"pharmacognosy" was used to define the branch of medicine or commodity sciences which deals with drugs in their crude, or unprepared, form. Crude drugs are the dried, unprepared material of plant, animal or mineral origin, used for medicine. The study of these materials under the name pharmakognosie was first developed in German-speaking areas of Europe, while other language areas often used the older term materia medica taken from the works of Galen and Dioscorides.

As late as the beginning of the 20th century, the subject had developed mainly on the botanical side, being particularly concerned with the description and identification of drugs both in their whole state and in powder form. Such branches of pharmacognosy are still of fundamental importance, particularly for pharmacopoeial identification and quality control purposes.

Although most pharmacognostic studies focus on plants and medicines derived from plants, other types of organisms are also regarded as pharmacognostically interesting, in particular, various types of microbes (bacteria, fungi, etc.), and, recently, various marine organisms.

The contemporary study of pharmacognosy can be divided into the fields of medical ethnobotany: the study of the traditional use of plants for medicinal purposes; ethnopharmacology: the study of the pharmacological qualities of traditional medicinal substances; the study of phytotherapy (the medicinal use of plant extracts); and phytochemistry, the study of chemicals derived from plants; marine pharmacognosy, the study of chemicals derived from marine organisms.

The part of pharmacognosy focusing on use of crude extracts or semi-pure mixtures originating from nature, namely phytotherapy, is probably the best known.

Pronunciation

Put the following words in the correct columns:

/əʊ/	/ ɔ/
won't	want

origin doctor hole smoke what watch role most both oath modern body post although scope constant complementary old often technology pharmacognosy

Vocabulary

Match the following words with their definitions:

1. pharmacognosy — a) the study of the use of extracts from natural origin as medicines or health-promoting agents
2. phytotherapy — b) the scientific study of the relationships that exist between people and plants
3. ethnobotany — c) the branch of medicine and biology concerned with the study of drug action
4. phytochemistry — d) a method based on the principle that like cures like
5. pharmacology — e) the study of phytochemicals
6. homeopathy — f) the study of medicines derived from natural sources

Writing

Write the definition of "herbal medicine" on the basis of the text below.

The scope of herbal medicine is sometimes extended to include fungal and bee products, as well as minerals, shells and certain animal parts. Medicinal plants have been identified and used throughout human history. Many of the herbs and spices used by humans to season food also yield useful

medicinal compounds. The use of herbs and spices in cuisine developed in part as a response to the threat of food-borne pathogens. Studies show that in tropical climates where pathogens are the most abundant, recipes are the most highly spiced. Further, the spices with the most potent antimicrobial activity tend to be selected. In all cultures vegetables are spiced less than meat, presumably because they are more resistant to spoilage. Many of the common weeds that populate human settlements, such as nettle, dandelion and chickweed, also have medicinal properties.

Translation

Read and translate the text on botany:

Botany, plant science(s), or plant biology is a discipline of biology and the science of plant life. Traditionally, the science of botany included the study of fungi, algae, and viruses, but this has become less common. A person engaged in the study of botany is called a botanist.

Botany covers a wide range of scientific disciplines including structure, growth, reproduction, metabolism, development, diseases, chemical properties, and evolutionary relationships among taxonomic groups. Botany began with early human efforts to identify edible, medicinal and poisonous plants, making it one of the oldest branches of science.

The beginnings of modern-style classification systems can be traced to the 1500s–1600s when several attempts were made to scientifically classify plants. In the 19th and 20th centuries, major new techniques were developed for studying plants, including microscopy, chromosome counting, and analysis of plant chemistry. In the last two decades of the 20th century, DNA (Deoxyribonucleic acid [di:ksi:ˈraibəunju:kliaik ́æsid]) was used to more accurately classify plants. Botanical research focuses on plant population groups, evolution, physiology, structure, and systematics.

Speaking

Discuss the topic “Herbal medicines”.

Active Grammar

Present Simple and Present Continuous

Prepositions

A. Look at the patterns and translate the following sentences:

The sun **rises** in the East. Look! The sun **is rising**.

Don’t go out now. It’**s** rain**ing.**

You‘**re** not listen**ing** to me.

1. Пожалуйста, не шумите. Я работаю. 2. Я тороплюсь. Мои друзья ждут меня. 3. Что ты делаешь завтра? 4. Вы хорошо себя чувствуете? Да. Я чувствую себя прекрасно. 5. Мои друзья сейчас работают над новым проектом. 6. Выгляни в окно. Снег идет? 7. Он проводит эксперимент в лаборатории сейчас. Ты можешь его найти там. 8. Сколько стоит поездка во Францию? 9. Я ищу свою книгу. Я не могу найти ее нигде. 10. Что ты здесь делаешь? - Я жду своего друга. 11. Не могу решить сейчас. Мне необходимо подумать немного. 12. Иногда мне бывает грустно (feel sad). 13. Эти цветы не растут в холодных странах. 14. Он работает в этой компании, но мы не часто встречаемся с ним. 15. Ты не слушаешь меня. Ты никогда не слышишь меня.

B. Complete the sentences with the correct form of the verb in brackets. Choose either Present Simple or Present Continuous.

She prefers (prefer) listening to music.

1. At the moment I _____ (work) as a shop assistant but I will stop when I go back to university in October.

2. I _____ (study) now, but I think I’ll go to the gym later.

3. My friends and I often _____ (have) a picnic on Saturdays.

4. I _____(not understand) what you are saying.

5. We _____ (have) a very interesting conversation right now.

6. I'd love to know what you _____ (do)?

7. I (live) in Canada at the moment and (study) at the pharmacy school.

8. Are you _____ (do) anything tomorrow?

9. Please be quiet! The doctor _____ (examine) the patient.

10. He ____(do) all his shopping on the Internet.

11. My brother usually _____(wear) jeans and a sweater but he ____ a suit today.

12. We _____(think) of moving from this area.

13. What are you_____ (do) this evening? – I don't know yet.

14. Where do your friends usually _____ (stay) when they are abroad?

15. "_____ your friends (stay) at a hotel?" " No, they aren't."

C. Translate the following sentences into Russian:

1. There is a constant need to develop new drugs because new illnesses are appearing all the time.

2. Some ethical problems may arise when scientists believe very strongly in the importance of their research.

3. He hardly ever takes any medicine.

4. The total number of drugs is constantly increasing.

5. Are you having any problems with your back?

6. He is always making comments about my weight.

7. Success doesn't come easily. It involves long working days, doing business from 8 a.m. to 5 p.m. and sometimes making difficult decisions.

8. She's always complaining about something.

9. Are you doing anything this evening? Would you like to see a film?

10. He can't meet us tomorrow. He's working.

11. Population is increasing about 3 % per year.

12. Most children love watching cartoons on television.

13. My English is getting better.

14. Students are working on their new projects.

15. Countries struggle to make quality drugs available.

16. The kettle is boiling. Can you turn it off?

D. Use of prepositions

Talking about time

I'll see you **at** ten o'clock (**on** Tuesday, **on** Sundays, **on** May 22nd, **in** September, **in** spring, **a**t the weekend, **by** 5 o'clock, **in** the morning, **on** Monday evening, **at** the moment, **in** 2012, **in** a few days). I'm free **after** six o'clock. **Before** the examination everybody was very nervous. I went to sleep **during** the film. It has been raining **since** I got up. I work **from** nine **to/until** five. I'm going away **for** a few weeks. "Was the train late?" "No, it was **on** time".

Talking about place

It's **on** the table (**under** your chair, **in** the fridge, **near** the door, **in** the corner of the room).

He lived **in** London (**in** Park Street, **in** England, **in** the south of England).

He is **at** home/**at** work/**at** university; **in** hospital/**in** bed; **in** a car (*but* **on** a bus/**on** a train/**on** a plane); **at** the bus stop/ **at** the airport/ **at** the station; **at** the doctor('s) **/at** the dentist('s).

At the top of the page, **in** the middle of the page, **at** the bottom of the page.

We watched the news **on** television. We heard the news **on** the radio last night.

TEXT 3. PHARMACY TECHNOLOGY, INDUSTRY AND MANUFACTURING.

Reading A PHARMACY TECHNOLOGY

Pharmacy technology is an important part of the health care system. It is the application of scientific knowledge, techniques and methods to the practice of pharmacy or pharmacology. Pharmaceutical technology focusses on improving the safety, quality and efficiency of pharmaceutical manufacturing through the application of relevant technology.

New technologies have the potential to make pharmacy practice and pharmaceutical care more efficient, more cost-effective and more patient-friendly. Robots, networked computers and other tools are making pharmacists and pharmacy technicians more productive and accurate. Automating the pick, pour, count, fill and label steps of the prescription order filling process can increase pharmacy productivity.

Pharmacy technology involves the compounding of medications such as creams and ointments using not only compounding machines but manual tools such as a mortar and pestle.

Reading B PHARMACEUTICAL INDUSTRY

The pharmaceutical industry develops, produces, and markets drugs or pharmaceuticals licensed for use as medications. The pharmaceutical industry includes public and private organizations involved in the discovery, development, and manufacture of drugs and medications. Historically, medicines were prepared by physicians and later by apothecaries. Today, drug development relies on the collaboration and effort of highly trained scientists at universities and private companies. The modern era of drug discovery and development originated in the 19th century when scientists learned how to isolate and purify medicinal compounds and developed large-scale manufacturing techniques. As understanding of biology and chemistry improved in the 20th century, the occurrence and severity of such diseases as

typhoid fever, poliomyelitis, and syphilis were greatly reduced. While many drugs, such as quinine and morphine, are extracted from plant substances, others are discovered and synthesized by techniques including combinatorial chemistry and recombinant DNA technology. The pharmaceutical industry has greatly aided medical progress, and many new drugs have been discovered and produced in industrial laboratories.

Reading C PHARMACEUTICAL MANUFACTURING

Drug manufacturing is the process of industrial-scale synthesis of pharmaceutical drugs by pharmaceutical companies. The drug manufacturing industry has produced a variety of medicinal and other health-related products undreamed of by even the most imaginative apothecaries of the past. These drugs have saved the lives of millions of people from various diseases, and they permit many ill people to lead reasonably normal lives.

The process of drug manufacturing can be broken down into a series of unit operations, such as milling, granulation, coating, tablet pressing, and others.

During the drug manufacturing process, milling is often required in order to reduce the average particle size in a drug powder. Granulation can be thought of as the opposite of milling; it is the process by which small particles are bound together to form larger particles, called granules. An enteric coating is a polymer barrier applied on oral medication. This helps by protecting drugs from the pH (i.e. acidity) of the stomach. Drugs that have an irritant effect on the stomach, such as aspirin, can be coated with a substance that will dissolve only in the small intestine. A tablet press is a mechanical device that compresses powder into tablets of uniform size and weight. A press can be used to manufacture tablets of a wide variety of materials, including pharmaceuticals, cleaning products, and cosmetics.

In the future, pharmaceutical manufacturing will need to employ innovation, cutting edge scientific and engineering knowledge, and the best

principles of quality management to respond to the chanlenges of new discoveries (e.g. complex drug delivery systems and nanotechnology) and ways of doing business such as individualized therapies or genetically tailored treatments.

Pronunciation

Put the Past Simple form of the verbs in the correct column depending on the pronunciation of the ending:

performed determined developed started watched stopped studied learned needed washed wanted ended worked translated opened closed finished

/ t /	**/ d /**	**/ id /**
walked	believed	sounded

Vocabulary

Match these words with their definitions

1. pharmacy	A. the treatment of disease through the administration of drugs
2. pharmaceutics	B. the science of dosage form design
3. pharmacology	C. science of drugs including their origin, composition, therapeutic use, and toxicology
4. pharmacotherapy	D. the study of medicines derived from natural sources
5. pharmacognosy	E. the art of preparing and dispensing drugs

Translation

Write a translation of the short text about the UK pharmaceutical industry.

Medicines contribute enormously to the health of the nation. The discovery, development and effective use of drugs have improved many

people's quality of life, reduced the need for surgical intervention and the length of time spent in hospital and saved many lives. The industry which has produced these drugs has understandably been described as "world class and a jewel in the crown of the UK economy". It is the third most profitable economic activity after tourism and finance and a centre of world class science, accounting for 10% of global pharmaceutical expenditure. However, there are disadvantages in the increasing use of and reliance on medicines. The inappropriate or excessive use of medicines can cause distress, ill-health, hospitalisation and even death. Adverse drug reactions are responsible for about 5 % of all amissions to hospitals in the UK. The interests of pharmaceutical companies and those of the public, patients and the NHS often overlap but they are not identical.

Discussion

I. Read the text and answer the questions.

1. What is pharmacy technology? 2. What does pharmacy technology involve? 3. What is the aim of pharmaceutical industry? 4. What does pharmaceutical industry include? 5. What is drug manufacturing? 6. What can the process of drug manufacturing be broken down into? 7. What is the future of pharmaceutical manufacturing?

II. Discuss the topic "Pharmacy technology is an important part of the health care system".

Writing

Write the translation of the following short text:

Most of today's major pharmaceutical companies were founded in the late 19th and early 20th centuries. Key discoveries of the 1920s and 1930s, such as insulin and penicillin, became mass-manufactured and distributed. Switzerland, Germany and Italy had particularly strong industries, with the United Kingdom, the United States, Belgium and the Netherlands following

suit. Numerous new drugs were developed during the 1950s and mass-produced and marketed through the 1960s. Drug development progressed from a hit-and-miss approach to rational drug discovery in both laboratory design and natural-product surveys. Demand for nutritional supplements and so-called alternative medicines created new opportunities and increased competition in the industry.

Comprehension

Read the text and render the main idea of it:

Pharmacoinformatics may be defined as: implementation and use of information technologies for the discovery and development of drugs as well as in pharmacy education. It sometimes is also referred as chembioinformatics.

Pharmacoinformatics, also referred to as pharmacy informatics, is the application of computers to the storage, retrieval and analysis of drug and prescription information. Pharmacy informaticists work with pharmacy information management systems that help the pharmacist make excellent decisions about patient drug therapies with respect to, medical insurance records, drug interactions, as well as prescription and patient information.

Pharmacoinformatics is the study of interactions between people, their work processes and engineered systems within health care with a focus on pharmaceutical care and improved patient safety. Pharmacy informatics can be thought of as a sub-domain of the larger professional discipline of health informatics.

Active grammar

Past Simple, past Continuous, used to, would (for repeated actions in the past)

Numerals

A. Complete the sentences with the past Simple or the past Continuous.

Compare the following sentences:

"What **did** he **say**?" "I don't know. I **wasn't listening**."

1. I (break) ____ my leg once while I (play) _____ football for the university team

2. I (have)_____ a terrible headache yesterday.

3. Nobody (help)____ him. He (do)___ it himself.

4. At nine o'clock last night, I (make)____ a report.

5. I (read)____ a book while you (do)____ the washing up.

6. Penny (run)_____ to catch the bus when she (slip) and (fall).

7. I (dream)_____ about my travel when the alarm clock (go off)____.

8. It _____(start to rain) as we were just about to leave the house.

9. I _____ (wake up) early yesterday. It ____(to be) a nice morning. The sun _____(to shine).

10. I _____(read) when the phone rang.

11. What _____(happen) to Mary last night? Why didn't she come to the party?

12. I _____ (work) on my report at 10.30 last night.

B1. Translate the following:

1. Ten years ago I weighed 60 kilos, and I still do. 2. It rained all day. 3. We didn't have a holiday last year. 4. I started feeling ill last Monday and I still feel awful. 5. Where were you last night? 6. She used to travel a lot when she was young. 7. He was playing rugby when he fell heavily on his left leg and twisted his ankle. 8. He used to work till late at night. 9. When I was at my grandparents' cottage, I would wake up early and go for a ride. 10. She was leaving when the phone rang. 11. He stood up, picked up his briefcase and left the office. 12. The theatre used to be a hospital many years ago. 13. I'd walk to work every morning. 14. She used to be very thin. 15. He didn't use to eat much. 16. Did you use to work in a pharmacy? 17. Did you study

languages at university? 18. In my first year at University I lived in the halls of residence. 19. The nurse asked the child his name while she was taking his temperature. 20. What did you have to eat? I wasn't hungry. 21. What were you doing at 3 o'clock? 22. I heard a knock on the door but when I opened it there was nobody outside. 23. We didn't find anything. 24. It was kind of you to help us. 25. It was raining, so we didn't go out.

B2. 1. «Что ты делал вчера в 11 часов?» «Я переводил текст». 2. Отель был комфортабельным и не очень дорогим. 3. В 2010 году они жили в Канаде. 4. Я начал работу в 9 часов и закончил ее в 4 часа. В 2.30 я работал. 5. Ты работала в этой аптеке? 6. Мы смотрели футбольный матч по ТВ, когда нам позвонили. 7. Когда они вышли из дома, шел дождь. 8. Она не работала вчера. Она болела. 9. В 9 часов вчера они проводили эксперимент в лаборатории. 10. Где вы были вчера в 3 часа дня?

C. Use of numerals

1. How do you pronounce Calendar dates in English?

The following table offers a list of valid pronunciations and alternate pronunciations for any given year of the Gregorian calendar.

2000 Two thousand Twenty hundred Two triple-oh

2001 Two thousand (and) one Twenty oh-one Twenty hundred (and) one Two double-oh-one Two oh-oh-one

2014 Two thousand (and) fourteen Twenty fourteen Twenty hundred (and) fourteen Two-oh-one-four

2. Fractions and decimals

In spoken English, ordinal numbers are also used to quantify the denominator of a fraction. Thus 'fifth' can mean the element between fourth and sixth, or the fraction created by dividing the unit into five pieces. In this usage, the ordinal numbers can be pluralized: one seventh, two sevenths. The

sole exception to this rule is division by two. For fractions English speakers use the term 'half' (plural 'halves').

Here are some common fractions (partitive numerals):

1/16 one sixteenth

1/10 or 0.1 one tenth

1/8 one eighth

2/10 or 0.2 two tenths

1/4 one quarter or (mainly American English) one fourth

1/3 one third

3/8 three eighths

1/2 one half

2/3 two thirds

3/4 three quarters or three fourths

15/16 fifteen sixteenths

0.002 is "two thousandths" (mainly U.S.); or "point zero zero two", "point oh oh two", "nought point zero zero two", etc.

3.1416 is "three point one four one six"

99.3 is "ninety-nine and three tenths" (mainly U.S.); or "ninety-nine point three".

Fractions together with an integer are read as follows:

1 1/2 is "one and a half"

6 1/4 is "six and a quarter"

7 5/8 is "seven and five eighths"

3. Mathematical expressions

Multiplication

▪ multiply by Multiply 4 by 10. 4 multiplied by 10 is 40. Another way to say is 4 times 10 is 40.

Division

▪ divide by Divide 126 by 3. 126 divided by 3 is 42. Another way to say is 3 into 126 is 42.

Subtraction

▪ subtract /take from What do you get when you subtract/take 22.5 from 112.5? 22.5 subtracted/taken from 112.5 is 90. Another way to say subtracted from is minus. 112.5 minus 22.5 is 90.

Addition

▪ add to Add 41.7 to 36.3./41.7 added to 36.3 is 78. Another way to say added is plus. 41.7 plus 36.3 is 78

TEXT 4. PHARMACY MANAGEMENT AND ECONOMICS.

Pharmacy management and economics is an applied discipline focusing on specialized courses in pharmaceutical management, pharmaceutical marketing and product development, quality control, research and technology, economic evaluation of pharmaceutical products.

The goal of pharmacy management is getting information and gaining knowledge as well as practical skills in the field of organization, planning, control, analysis and other activities concerned with providing high quality pharmaceutical care. Keeping up with innovations in customer services, retail sales and human resources policies is essential for any pharmacy owner or pharmacist responsible for training and supervising pharmacy staff. Getting insights from other industries and learning from profiles of pharmacists in a range of pharmacy practice settings is also important.

Pharmacoeconomics refers to the scientific discipline that compares the value of one pharmaceutical drug or drug therapy to another. It is a sub-discipline of health economics. Economic analysis is becoming more and more critical. With growing economic challenges facing the pharmaceutical industry, more efforts are being placed on novel ways that new drugs can be commercialized in the marketplace. Thus, the technical skills of an economist are needed more than ever to address the growing challenges faced by individual companies and the industry. A pharmacoeconomic study evaluates

the cost (expressed in monetary terms) and effects (expressed in terms of monetary value, efficacy or enhanced quality of life) of a pharmaceutical product.

Pronunciation

Find the transcription of the following words in a dictionary and pronounce them properly:

management, developer, supervisor, commercial, challenge, monetary, efficacy, value, product, market, resource, industry.

Vocabulary

Find sentences in the text where the following words and word combinations are used:

discipline, retail sales, efforts, practical skills, health economics, customer services, quality control.

Writing

Write a translation of the following text:

One important consideration in a pharmacoeconomic evaluation is to decide the perspective from which the analysis should be conducted. The cost-benefit analysis (CBA) is based on the economic standard of efficiency. CBA requires the measuring of all benefits and costs which are either directly or indirectly attributable to the outcome under investigation. CBA is important to healthcare economists and policy makers because it identifies inefficiency, and inefficiency equates to welfare loss (ideally, the aim is to minimize welfare loss). CBA has become the standard of modern welfare economics.

The cost-effectiveness analysis (CEA) ratio can be a more practical tool for decision making than CBA in that it involves the comparison of the costs of achieving a particular non-monetary objectives; such as lives saved, health

improvement, or quality of life. The Cost Effectiveness Ratio (CER) is the mathematical representation of this analysis.

Discussion

Read and discuss the text "Medication Compounding"

The art of preparing medications dates back to the origins of pharmacy. At pharmacies, they still practice the time proven art of compounding using modern variations of the "mortar and pestle" to prepare unique and individualized medications. Working with doctors, compounding allows pharmacists to customize the strength and dosage form of a medication according to individual needs. This may include making lozenges or preparing a drug that is no longer commercially available or it may involve changing a medication from a pill form into a penetrating skin cream, or adding flavors, or preparing a dye-free or preservative-free medication. The possibilities are endless. Pharmacists can formulate and prepare just about any kind of medicine specifically designed just for you. Compounding services can enhance virtually any area of medicine including natural hormone replacement therapy, children's dosage forms and flavors, capsule and suppository preparations, etc.

Comprehension

Read the text and render the main idea of it:

Health economics is a branch of economics concerned with issues related to efficiency, effectiveness, value and behavior in the production and consumption of health and health care. In broad terms, health economists study the functioning of health care systems and health-affecting behaviors such as smoking. Health economists evaluate multiple types of financial information: costs, charges and expenditures. Pharmacy practice is not an exclusion. Medicines contribute to improving health status, but growth in pharmaceutical expenditure outspaces economic growth. So, it is necessary to

conduct sound assessments of pharmacy practice. Attention needs to be paid to financial benefit based on direct cost savings and estimated cost avoidance arising from the prevention of adverse drug effects.

Active grammar

Future forms (will/shall, be going to, present and future Continuous)

Connectives: after, as soon as, before, until/till, when, while; although; in spite of/despite; however; unless

Translate the following:

A. 1. Will you help me with the dishes? 2. Shall I get you some coffee? 3. "Your clothes are dirty." "Are they? I'll wash them." 4. He's going to have an operation that could save his life. 5. Perhaps it'll rain tomorrow. 6. Tom's going to take his driving test next week. 7. She's going to have a baby. 8. I'll be flying to Paris this time tomorrow. 9. I'll be seeing Sam tonight. Would you like me to tell him the news. 10. They are on the point of leaving. They are about to leave. 11. How long are you going to be on holiday? 12. "Oooh! It's agony. But I'm seeing the dentist this afternoon. 13. I'll look for a new bag when I'm shopping at the weekend. 14. The fashion show starts at 3 o'clock in the afternoon. 15. There will always be people who suffer impairment and disability, and demographic trends suggest that the number of such people will increase. 16. I think most people will live to 100 in the near future. 17. Are you going to take part in the conference? 18. I hope I'll be able to enjoy my old age. 19. If I don't feel well tomorrow, I'll stay at home. 20. Next year our three-old will be starting nursery school. 21. She's usually late, but I think she'll be on time this evening. 22. While most Internet pharmacies sell prescription drugs and require a valid prescription, some Internet pharmacies sell prescription drugs without requiring a prescription.

B. 1. Он собирается бросить курить. 2. Я буду в шесть ровно. 3. Завтра у нее выходной (a day off work). 4. Я не собираюсь есть нездоровую пищу (junk food). 5. Он будет работать за границей. 6. Держите меня. Я сейчас упаду. 7. Кажется, дождь собирается. 8. Если плохо себя чувствуешь, ложись, отдохни. Я уверена, тебе скоро станет лучше. 9. Кто будет разрабатывать новый проект? 10. Здесь так душно. Открыть окно? 11. Я не буду есть в большом количестве еду быстрого приготовления. 12. Они проведут серию новых экспериментов в этом месяце. 13. Когда будут объявлены (be out) результаты экзаменов? 14. Я думаю, я закончу свою работу в следующем году. 15. Факторы риска здоровья повышаются с каждым годом. 16. Не беспокойся – я позабочусь об этом. 17. Я надеюсь, что вы не собираетесь менять свое решение. 18. Ты думаешь экзамен будет трудным?

C. 1. I'll call you after we solve the problem. 2. I'll call you as soon as we solve the problem. 3. It'll be a few days before we find the solution. 4. I won't call you until we find the solution. 5. It'll be great when we find the solution. 6. I'll be in the office while I deal with this problem. 7. Although my work was difficult, I finished it before bed. 8. In spite of revising for hours, I didn't do well in the test. Despite my revision, I didn't do well in the test. 9. We believed that we would find a solution. We were wrong, however. 10. Unless you hurry up, we'll be late, (If you don't hurry up, we'll be late). 11. When you're tired, don't drive. 12. The patient will progress as soon as we change his medication. 13. "Let's go out tonight". "Okay, what time shall we meet?" "As soon as I finish my work". 14. After he lost his job, it was difficult for him to find a new one. 15. He didn't succeed because he didn't make enough efforts. 16. The first quiz was easy whereas this one is extremely difficult. 17. It's usually quite simple to cross the border between the USA and Canada because these two countries have friendly relations. 18. Before you cross the road, always look both ways.

TEXT 5. PHARMACOLOGY

Although pharmacology is essential to the study of pharmacy, it is not specific to pharmacy. Therefore it is usually considered to be a field of the broader sciences.

Pharmacology is concerned with understanding the action of drugs in the body. Attention is given to the effects of various doses of each medicinal substance and to the different ways in which medicine can be introduced into the body. The effects of poisons and the means to overcome them are studied in toxicology.

Pharmacology is the branch of medicine and biology concerned with the study of drug action which exerts a biochemical and/or physiological effect on the cell, tissue, organ, or organism. More specifically, it is the study of the interactions that occur between a living organism and chemicals that affect normal or abnormal biochemical function. If substances have medicinal properties, they are considered pharmaceuticals. The field encompasses drug composition and properties, synthesis and drug design, molecular and cellular mechanisms, organ/systems mechanisms, signal transduction/cellular communication, molecular diagnostics, interactions, toxicology, chemical biology, therapy, and medical applications and antipathogenic capabilities.

The two main areas of pharmacology are pharmacodynamics and pharmacokinetics. The former studies the effects of the drug on biological systems, and the latter the effects of biological systems on the drug. In broad terms, pharmacodynamics discusses the chemicals with biological receptors, and pharmacokinetics discusses the absorption, distribution, metabolism, and excretion (ADME) of chemicals from the biological systems. Pharmacology is not synonymous with pharmacy and the two terms are frequently confused. Pharmacology, a biomedical science, deals with the research, discovery, and characterization of chemicals which show biological effects and the elucidation of cellular and organismal function in relation to these chemicals. In contrast, pharmacy, a health services profession, is concerned with

application of the principles learned from pharmacology in its clinical settings. In either field, the primary contrast between the two are their distinctions between direct-patient care, for pharmacy practice, and the science-oriented research field, driven by pharmacology.

Pronunciation

Look at the examples which show how words link together in spoken English.

He must have eaten all Ann's oranges.

/hi məst əv i:tən ɔ:l ænz ɔrinʤiz/

She can't have seen him.

/ʃi kənt əv si:n im/

Vocabulary

Find the text sentences containing the following word combinations:

действие лекарств, отрасль медицины и биологии, живой организм, раздел фармакологии, биомедицинская наука, фармацевтическая практика.

Discussion

I. Read the text and answer the questions.

1. What is pharmacology? 2. What is the difference between pharmacy and pharmacology? 3. Which substances are called pharmaceuticals? 4. What are two main areas of pharmacology? 5. What does pharmacodynamics study? 6. What is the aim of pharmacokinetics.

II. Discuss the topic "Pharmacology is one of the basic subjects in the curriculum of pharmacy students"

Writing

Write a translation of the following definitions:

Фармаци́я изучает проблемы создания, безопасности, исследования, хранения, изготовления, отпуска и маркетинга лекарственных средств.

Фармацéвтика — часть фармации, связанная непосредственно с проблемами производственно-технологического процесса производства лекарственных средств и субстанций.

Фармаколóгия — медико-биологическая наука о лекарственных веществах и их действии на организм.

Comprehension

Read and translate the following:

Pharmacology is the study of how drugs interact with living organisms to produce a change in function. If substances have medicinal properties, they are considered pharmaceuticals. The field encompasses drug composition and properties, interactions, toxicology, therapy, and medical applications and antipathogenic capabilities. Pharmacology is not synonymous with pharmacy, which is the name used for a profession, though in common usage the two terms are confused at times. Pharmacology deals with how drugs interact within biological systems to affect function, while pharmacy is a medical science concerned with the safe and effective use of medicines. Pharmacology is the science of dispensing medical drugs, but pharmaceutics also encompasses the non-scientific aspects such as how to make medications more palatable, where raw materials may be obtained, etc.

Active grammar

Perfect Tenses (present, past perfect; present, past, future perfect continuous)

A. Translate the following:

1. This new computer has made my life a lot easier. 2. He has written three papers. 3. She has worked as a pharmacist for five years. 4. She has been waiting for an hour but there's still no sign of him. 5. I've never been to Brazil, but I might include it on my itinerary next year. 6. What have you been doing to my computer? 7. Our firm has launched two new products. 8. By the end of July he will have been in England for two months. 9. I've never been given such a nice present before. 10. She was covered in paint because she had been painting her room. 11. We haven't checked the answers yet. 12. I've been learning English for over three years. 13. Have you been to the dentist this month? 14. The rain had nearly stopped when we reached home. 15. They have asked me for too many qualifications for this job, so I won't get it. 16. He has been playing professional football for many years. 17. Tourism has become one of the important economic sectors in the world. 18. Illicit drugs have been placed under the control of international conventions. 19. In recent years, many health care reforms have taken place throughout the world. 20. He's never been able to see things clearly in the distance. 21. Many old-fashioned forms of medication — such as mixtures, tinctures, decoctions, elixirs, emulsions, and syrups — have now virtually disappeared. 22. Research has shown that orange, apple, and grapefruit juice can wipe out the benefits of some antibiotics and hay-fever pills.

B. Complete the sentences with the simple past or present perfect form of the verbs in brackets.

1. I don't know when he <u>left .</u> (leave)

2. My sister _____ a baby in July so now she's got three children. (have)

3. Oh, no! I _____ my credit card. (lose)

4. "How long _____ you _____ Mr.Smith?" (know). "Since 2012".

5. “_____ you ever _____ Italy?” (visit) “Yes, I _____there last year.” (go)

6. It’s much colder than it _____ last year. (be)

7. “When _____you _____ your job? (change) “In October”.

8. “Are they still performing the operation?” “No, They_____ (finish).

9. She is an interesting person. She ____(do) many different jobs and_____(visit) many countries.

10. My friend is afraid of jetting. He never _____(travel) by air.

11. How many patients _____the doctor (examined)?

12. He _____(make) a lot of friends since he _____(move) here.

C. Translate the following:

1. Ты уже прочитал утреннюю газету? 2. Ты был когда-либо в Америке? 3. Сколько денег ты потратил сегодня? 4. Он только что потерял работу и очень сильно расстроен. 5. Моему другу выписали штраф (to give a fine) потому что он припарковал свою машину в неположенном месте. 6. Она выступила с докладом на конференции. 7. Мой научный руководитель прочитает мой доклад, до того как я представлю его на конференции. 8. Мы знакомы с 2009 года. 9. Я надеюсь, что получу приглашение на конференцию к концу месяца. 10. Не успела она прийти домой, как зазвонил телефон. (scarcely…when). 11. Что показало ваше исследование? 12. Мы работаем в этой аптеке три года. 13. Ваш доктор сейчас в отпуске. Он уехал в Испанию. Его не будет по крайней мере три недели. 14. Говоря по правде, я не видел его с понедельника. 15. Последние события заставили их отложить поездку. 16. Врач уже осмотрел пациента и поставил предварительный диагноз. 17. Как долго вы кашляете? 18. Ты когда–нибудь опаздывал на работу? 19. Мы исследовали фармакокинетику новой лекарственной формы. 20. Биотехнологические решения клинических проблем стали основным направлением нашей науки.

TEXT 5.1. WHAT IS A DRUG, A MEDICATION, A MEDICINE?

A drug is a substance which may have medicinal, intoxicating, performance enhancing or other effects when taken or put into a human body and is not considered a food or exclusively a food.

What is considered a drug rather than a food varies between cultures. In pharmacology, a drug is "a chemical substance used in the treatment, cure, prevention, or diagnosis of disease or used to otherwise enhance physical or mental well-being." Drugs may be prescribed for a limited duration, or on a regular basis for chronic disorders.

Drugs are usually distinguished from endogenous biochemicals by being introduced from outside the organism. For example, insulin is a hormone that is synthesized in the body; it is called a hormone when it is synthesized by the pancreas inside the body, but if it is introduced into the body from outside, it is called a drug. Many natural substances, such as beers, wines, and psychoactive mushrooms, blur the line between food and recreational drugs, as when ingested they affect the functioning of both mind and body.

A pharmaceutical drug, also referred to as a medicine or medication, can be loosely defined as any chemical substance - or product comprising such - intended for use in the medical diagnosis, cure, treatment, or prevention of disease.

A medication or medicine is a drug taken to cure and/or ameliorate any symptoms of an illness or medical condition, or may be used as preventive medicine that has future benefits but does not treat any existing or pre-existing diseases or symptoms.

Dispensing of medication is often regulated by governments into three categories—over-the-counter (OTC) medications (Synonym: nonprescription medication), which are available in pharmacies and supermarkets without special restrictions; behind-the-counter (BTC), which are dispensed by a pharmacist without needing a doctor's prescription, and prescription only

medicines (POM), which must be prescribed by a licensed medical professional, usually a physician.

In the United Kingdom, BTC medicines are called pharmacy medicines which can only be sold in registered pharmacies, by or under the supervision of a pharmacist. These medications are designated by the letter P on the label. The range of medicines available without a prescription varies from country to country.

Medications are typically produced by pharmaceutical companies and are often patented to give the developer exclusive rights to produce them. Those that are not patented (or with expired patents) are called generic drugs since they can be produced by other companies without restrictions or licenses from the patent holder.

Pronunciation

1. Rhymes with DRUG

bug, chug, dug, fug, hug, jug, lug, mug, plug, pug, rug, shrug, slug, smug, snug, thug, trug, tug, vug

2. Look at the phonetic transcription and write the words next to them.

/fiziʃn/_____, /ˊnɔliʤ/_____, /kəmˊpjuːtə/_____,

/ˊsist(ə)m/_____, /helθ /_____, /prɔˊsiːʤə/_____

/ˊfɑːməsɪst/_____, /drʌg/_____, /ˌmediˊkeiʃn/_____.

Vocabulary

Pharmaceutical terms to be memorized:

a chemical substance, over-the-counter medications, behind-the-counter medications, prescription only medicines, a pharmacy medicine, a registered pharmacy, medicines without a prescription, off-label use.

Writing

Write a translation of the following definitions borrowed from different dictionaries:

A drug is a substance used in the diagnosis, treatment, or prevention of a disease or as a component of a medication.

Any chemical agent that affects the function of living things. Some, including antibiotics, stimulants, tranquilizers, antidepressants, analgesics, narcotics, and hormones, have generalized effects. Others, including laxatives, heart stimulants, anticoagulants, diuretics, and antihistamines, act on specific systems. Vaccines are sometimes considered drugs.

Drugs are substances that alter the body's actions and natural chemical environment. They include medications and narcotics.

Drugs are substances used in medicine either externally or internally for curing, alleviating, or preventing a disease or deficiency.

A medication or medicine is a drug taken to cure and/or ameliorate any symptoms of an illness or medical condition, or may be used as preventive medicine that has future benefits but does not treat any existing or pre-existing diseases or symptoms.

A pharmaceutical drug, also referred to as medicine or medication, can be loosely defined as any chemical substance intended for use in the medical diagnosis, cure, treatment, or prevention of disease.

Comprehension

Read the text and render the main idea of it:

Recreational drugs are chemical substances that affect the central nervous system, such as opioids or hallucinogens. They may be used for perceived beneficial effects on perception, consciousness, personality, and behavior. Some drugs can cause addiction and/or habituation. National laws prohibit the use of many different recreational drugs and medicinal drugs that have the potential for recreational use are heavily regulated. Many other

recreational drugs on the other hand are legal, widely culturally accepted, and at the most have an age restriction on using and/or purchasing them. These include alcohol, tobacco, betel nut, and caffeine products in the west, and in other localised areas of the world drugs such as Khat are common.

Useful information

Off-label use (нарушение инструкции по применению) is the practice of prescribing pharmaceuticals for an unapproved indication or in an unapproved age group, unapproved dose or unapproved form of administration. Off-label use of medications is very common. Some drugs are used more frequently off-label than for their original indications. Generic drugs generally have no sponsor as their indications and use expands, and incentives are limited to initiate new clinical trials to generate additional data for approval agencies to expand indications of proprietary drugs. Up to one-fifth of all drugs are prescribed off-label and amongst psychiatric drugs, off-label use rises to 31%.

Active grammar

Non-finite forms of the verb: The Infinitive.

Types of questions

1. Write the **infinitive forms** of these –ing form verbs: e.g. asking - ask carrying, going, watching, coming, leaving, shining, getting, sitting, stopping, travelling, working, playing, eating, listening.

2. Translate the following:

A 1. My doctor advised me to take a rest. 2. I was glad to hear he had been promoted to manager. 3. It was nice of him to help me. 4. He phoned only to say that he wouldn’t coming. 5. To tell you the truth, I haven’t seen him since Monday. 6. It’s a pleasure to see you. 7. I don’t know what to do. 8. He’s old enough to drive a car. 9. She is old enough to live on her own.

10. How dare you speak to me like that! 11. You'd better go to bed. 12. He let me watch TV. 13. She went to Germany to study medicine. 14. They turned out to be carrying out a very important experiment. 15. This scientific problem is not going to be solved in the near future. 16. There's a lot of work to be done. 17. We use a fridge to keep certain drugs. 18. He stayed off work for six weeks to recover from his operation. 19. You need to keep the room cool in order to bring his temperature down. 20. We'll reduce the dosage in order not to make the side effects worse. 21. Open any newspaper or listen to any news broadcast and you are likely to read or hear about drugs — drug problems, drug abuse, drug culture, drug barons, drug smuggling. 22. Scientists, engineers, and technicians conduct research to develop new drugs. 23. Drug manufacturing companies prefer to hire college graduates, particularly those with strong scientific backgrounds, as pharmaceutical detailers. 24. Demand for this industry's products is expected to remain strong. 25. Scientists use sophisticated tools, such as computer simulation and combinatorial chemistry, to hasten and simplify the discovery of potentially useful new compounds. 26. The first step in a drug manufacturing development process is to identify a potentially useful compound. 27. The weather seems to be improving.

B 1. Он, кажется, болен. 2. Я хочу, чтобы ты помог мне. 3. Эту работу легко выполнить. 4. Важно помнить это правило. 5. Чтобы стать профессионалом, необходимо много трудиться. 6. Почему бы не встретиться снова когда-нибудь? 7. Жаль, что мы уезжаем так скоро. 8. Я видел, как она закрыла машину и положила ключ в сумку. 9. У меня нет желания спорить с вами. 10. Цель моего исследования – показать эффективность нового подхода к лечению этой болезни. 10. Хорошая мысль ходить на прием к стоматологу каждые шесть месяцев (to get a dental check-up). 11. Извини, я забыл купить билеты в театр. 12. Он пытался найти ответ на свои вопросы, но ему это не удалось. 13. Она

прекращает работу на полчаса, чтобы выпить чашку кофе. 14. Они согласились принять участие в международной конференции. 15. Чтобы добиться необходимого эффекта, лекарство обычно вводится орально или парентерально. 16. У вас есть что-нибудь, что нужно вносить в декларацию (to declare)? 17. Он слишком устал, чтобы помочь нам.

Making questions

Put the words in the right order to make questions

1. often do travel you abroad?
2. you were last where year?
3. the who airport met at you?
4. you year did a have holiday last?
5. long how you been have London in?
6. he or does like tea coffee?
7. ever you to have Britain been
8. is where he going year this?
9. you join will us ?
10. you happy are not are you

Translate the following questions:

1. Кто позвонил в скорую помощь? 2. Где находится ближайшая аптека? 3. Какое лечение врач предписал больному? 4. Эти таблетки уменьшают боль, не так ли? 5. Что сказал ему доктор? 6. Это то лекарство, которое порекомендовал врач, не так ли? 7. К кому она обратилась по поводу больного горла (to see) (sore throat)? 8. Вы сказали ему правду? 9. Это лекарство дорогое или нет? 10. Вы работаете в аптеке или в больнице? 11. Сколько стоит это лекарство? 12. Что такое химическое название лекарства? 13. Сколько брендовых названий может иметь лекарство. 14. Кто разработал этот препарат? 15. На каком этаже находится ваша лаборатория? 16. Из чего состоит данное вещество? 17. Когда началась деятельность этой фармацевтической компании? 18. Ваша компания большая или маленькая? 19. Какова структура этого препарата? 20. Это лекарство эффективно, не правда ли?

TEXT 5.2. DRUG NAMES

Drug nomenclature is the act of creating names for a drug or other pharmaceutical substance. Drugs, in the majority of circumstances, have 3 names: the chemical name, the International Nonproprietary Name (INN, also known as the generic or nonproprietary name), and the brand name.

Sample of different drug names

Chemical Name	Generic Name	Brand Name
N-acetyl-p-aminophenol	Acetaminophen	Tylenol

The chemical name is the scientific name, based on the molecular structure of the drug. These names are typically very long and too complex to be commonly used in referring to a drug.

Generic names and affixes.

The generic name is constructed out of affixes that classify the drugs into different categories and also separate drugs within categories. A marketed drug might also have a company code or compound code. Internationally, generic names, known as the International Nonproprietary Name, are issued by the World Health Organization (WHO) in several languages, including English. Generic names are used for a variety of reasons. They provide a clear and unique identifier for active chemical substances, appearing on all drug labels, advertising and other information about the substance. The prefixes and infixes have no pharmacological significance and are used to separate the drug from others in the same class. Suffixes or stems may be found in the middle or more often the end of the drug name, and normally suggest the action of the drug. Generic names often have suffixes that define what class the drug is.

Brand is the "name, term, design, symbol, or any other feature that identifies one seller's product distinct from those of other sellers." In pharmacy, the brand name (trade name) is a commercial name for a drug, normally the property of the drug manufacturer.

Pronunciation

Read the words paying attention to the pronunciation of letters – *ch*

chain, chemistry, psychology, cheese, choice, headache, chess, chemical, character, chair, cheap, technology, technique, chat, child, toothache, choose.

Vocabulary

Word combinations to be memorized:

chemical name, brand name, generic name, pharmaceutical substance, trade name.

Speaking

Discuss the differences between drug names.

Comprehension

Read and translate the following text:

Generic name. Each medicine (drug) has an approved name called the generic name. A group of medicines that have similar actions often have similar-sounding generic names. For example, penicillin, ampicillin, amoxicillin and flucloxacillin are in one group of antibiotics.

Brand name. Many medicines also have one or more brand names. This is chosen by the company that makes it. Several companies may make the same generic medicine, each with their own brand name. The name is often chosen to be memorable for advertising, or to be easier to say or spell than some long generic name! For example, paracetamol is a generic name. There are several companies that make this with brand names such as Panadol®, Calpol®, etc.

The brand name is usually written most clearly on any packaging. However, you will always see the generic name written somewhere on the

packet (often in small print). Some medicines only have the generic name on the packet.

The colour, size, shape, etc, of brands of the same medicine may vary depending on which company makes it. Do not be alarmed if your regular medicine seems to have changed colour or shape. It may be that the pharmacist is getting it from a different company, or the doctor has written the prescription in a generic way rather than using a brand name. However, the medicine will be the same if the generic name is the same as before.

Useful information

Standardized drug suffixes:

-vir	Antiviral drug	Indinavir
-cillin	Antibiotics	Penicillin and related compounds such as carbenicillin and oxacillin
-mab	Monoclonal antibodies	Trastuzumab, used in chemotherapy
-olol	Beta 1 blocker	Alprenolol
-tidine	H2 receptor antagonist	Cimetidine, Ranitidine
-pine	Ca2+ channel blocker	Amlodipine, Nifedipine
-done	Opioid analgesic	Hydrocodone, Oxycodone, Methadone
-sone	corticosteroid, anti-inflamatory	Prednisolone, Prednisone
-nitrate	Vasodialator	Isosorbide mononitrate, Isosorbide dinitrate

Active Grammar

Non-finite forms of the verb: The Gerund and the verbal noun

Translate the following:

A 1. Smoking is not good for your health. 2. I love sleeping because I'm sure sleeping at least seven hours a day is essential. 3. I insist on your going on a good diet. 4. I prefer keeping fit. 5. I considered leaving my job but I finally thought it was better to stay. 6. Doing physical exercise should be

a priority in life. 7. Tom enjoys playing golf. 8. We can't afford buying such an expensive car like that. 9. We should leave early to avoid being caught in the traffic. 10. Promoting health is an important national programme. 11. Study involves the mastery and practice of the methods of thinking, the understanding of theories, the writing of essays, reports and theses. 12. Signing the treaty is of great importance. 13. The signing of the treaty is of great importance. 14. Reading contributes to personality development. 15. Reviewing and synthesizing the results of research, maintaining registers and databases are important functions. 16. Visiting some European countries has become easier recently. 17. Screening is a way of identifying people at increased or greater risk for a condition. 18. Pharmacy technicians support the work of pharmacists and other health professionals by performing a variety of pharmacy related functions, including dispensing prescription drugs and other medical devices to patients and instructing on their use. 19. Drug manufacturing is the end result and key goal of the pharmaceutical industry. 20. Drug manufacturing is the process of industrial-scale synthesis of pharmaceutical drugs by pharmaceutical companies. 21. In the testing of a new antibiotic, for example, a scientist might swab the drug onto many Petri dishes, each containing a different bacteria. 22. After a drug shows promise in a controlled laboratory setting, animal and/or human testing begins. 23. Manufacturing or cultivating illegal drugs, such as methamphetamine or marijuana, is illegal under federal and state laws. 24. Compounding is the practice of preparing drugs in new forms. 25. Drinking fruit juice may stop medicine working. 26. General practice consists of compounding and dispensing drugs on order of the physician, dentist, or veterinarian. 27. Drugs provide great benefits to society by saving or improving lives. 28. The marketing of a new product is very important to a company as it introduces the product into the market.

B 1. Он заинтересован в том, чтобы стать провизором. 2. Не могу не восхищаться его талантом (I can't help doing smth.). 3. Я предлагаю пойти погулять. 4. Этот фильм стоит посмотреть (is worth seeing). 5. Вы не возражаете, если я открою окно? 6. Хирург настаивает на операции. 7. Катание на лыжах дорогой спорт из-за оборудования, которое вам необходимо для этого. 8. Изучение медицины – это огромный труд. 9. Я не помню, чтобы он упоминал об этом инциденте. 10. Говоря о путешествиях, я недавно побывал в Италии. 11. Я видел, как она шла по улице. 12. Улучшение качества жизни населения – одна из самых важных задач здравоохранения. 13. Сокращение потребление алкоголя и табака населением очень важно для продления жизни. 14. Курение здесь запрещено. 15. Выбор будущей специальности – очень ответственное дело. 16. Я помню, что видел этого человека в больнице. 17. Необходимо избегать переедания, особенно перед сном, если хотите сохранить хорошую форму (to be fit). 18. Объяснение людям правил нормального питания входит в задачи диетолога. 19. Я люблю путешествовать по миру. 20. Он отложил принятие решения (to postpone).

TEXT 5.3. DRUG CLASSES

A drug class is a group of medications that may work in the same way, have a similar chemical structure, or are used to treat the same health condition. A drug may be classified by the chemical type of the active ingredient or by the way it is used to treat a particular condition. Each drug can be classified into one or more drug classes.

Drugs are classified according to their effect on particular body systems, their therapeutic uses, and their chemical characteristics. A class of drugs is a group of drugs that have similar characteristics; they may cure the same diseases, have similar chemical structures or work in the same way. Example: morphine can be classified as a central nervous system depressant and a narcotic or opioid analgesic. The names of therapeutic classifications

usually reflect the condition for which the drugs are used (e.g., antidepressants, antihypertensives). Sometimes, the names of many drug groups reflect their chemical characteristics rather than their therapeutic uses (e.g., adrenergics, benzodiazepines). Many drugs fit into multiple groups because they have wide-ranging effects on the human body.

There are several cases where a drug can have multiple classes, either by indication, mechanism of action, or route of administration. Additionally, drugs can also be classified 3 different ways: – By body system – By the action of the agents – By the drug's mechanism of action

It is important to keep in mind that the effects produced by any drug can vary significantly and is largely dependent on the dose and way that it is administered. Concurrent use of other drugs can enhance or block an effect and substance abusers often take more than one drug to boost the desired effects or counter unwanted side effects. This means that the risks involved with drug abuse cannot be accurately predicted because each user has his or her-own unique sensitivity to a drug.

Pronunciation

Find the transcription of the words in a dictionary and pronounce them properly:

narcotics, depressants, stimulants, hallucinogens, anabolic steroids, adrenergics, antihypertensives, analgesics.

Vocabulary

Antonyms to be memorized:

major – minor, heavy – light, close – remote, progress – regress, the beginning – the end, subject – object, analysis – synthesis

Speaking

Answer the following questions:

1. What is drug class? 2. How many classes of drugs are there? 3. Do all controlled substance have common traits? 4. Do controlled substances produce dependence? 5. What is drug abuse? 6. What is drug dependence?

Writing

Write a translation of the following text:

Most controlled substances can produce dependence, either physically or psychologically, which increases potential for their abuse. Physical dependence is what happens when changes that have occurred in the body after repeated use of a drug make it necessary to continue the use of the drug to prevent a withdrawal syndrome. The symptoms can range from mildly unpleasant to life-threatening and depend on a number of factors. The type of withdrawal experienced is related to the drug being used; the dose and way that it's administered; multiple drugs being taken at the same time; frequency and duration of drug use; and the age, sex, health, and genetic makeup of the user. Psychological dependence refers to the "need" or "craving" for a drug. People who are psychologically dependent on a particular substance often feel like they can't function without continued use of that substance. While physical dependence goes away within days or weeks after drug use stops, psychological dependence can last much longer and is one of the primary reasons for relapse. Again, the best way to prevent relapse is through completing a drug treatment program.

Useful information

Quality expressions

With countable nouns: **(only) a few /not many/ a couple of/ several /How many…?** e.g**.** Can I ask you a couple of questions? Can you tell me a few words about this event?

With uncountable nouns: **(only) a little /not much/ a bit of /How much…?** e.g. There's not much snow this winter. How much money do you have with you?

With countable and uncountable nouns: **none /not many /some / a lot of /lots of / plenty of;** e.g. He ate a lot of food. Lots of people speak English. "Did you take any pictures?" "I took some but not many".

Too much /many and not enough e.g. I have too much work and not enough time. He has too many problems to solve and not enough time.

Active grammar

Non-finite forms of the verb: The Participle

Translate the following:

A. 1. A century of science-based medicine has not led us to the promised land of perfect health. 2. Reviewing the literature data, he found out interesting facts. 3. Being loved and admired by everybody, he had a great success. 4. Having made the experiment, we got substantial results to report. 5. In ancient Greece, temples dedicated to the healer-god Asclepius, known as Asclepieia, functioned as centers of medical advice, prognosis, and healing. 6. Your progress at University depends on the progress made at school. 7. This computer-based analysis is very helpful. 8. We learn that medical progress comes from institutional laboratories where rows of white-coated scientists pull together like oarsmen in a boat. 9. Studying the laboratory findings, we came to unexpected conclusions. 10. Hospital-acquired staphylococci, and many community-acquired strains, are usually resistant to antibiotics. 11. The results obtained are very interesting from many points of view. 12. These studies involving many experiments will be of utmost interest and importance for scientific community. 13. The injured man was taken to hospital. 14. Traffic accidents involving school children have increased this year. 15. Broadly speaking, the project was successful. 16. Mechanical injuries to the skin are divided into those caused by a blunt force, such as a

punch from a fist, and those caused by a sharp force, such as a knife. 17. The process begins with research scientists testing the effectiveness of chemical compounds on a variety of diseases. 18. The drug manufacturing process begins with research labs, most owned and operated by pharmaceutical companies, testing a variety of new and existing compounds on a host of diseases. 19. The high cost of medications and drug-related technology, combined with the potential impact of medications and pharmacy services on patient-care outcomes and patient safety, make it imperative that hospital pharmacies perform at the highest level possible. 20. The people working in a pharmacy are called pharmacists or chemists (British English). 21. Products manufactured by different companies may not be equally effective.

B. 1. Вы можете дать описание угнанной (stolen) машины? 2. Статья, опубликованная в этом журнале, произвела большое впечатление на все научное сообщество. 3. Метод лечения, предложенный нами, был одобрен нашими коллегами. 4. Меняющиеся обстоятельства заставляют нас действовать по-другому. 5. Это работа выполнена наполовину (half-finished). 6. Полученные данные являются противоречивыми. 7. Анатомия человека – это наука, изучающая строение организма и его органы. 8. Доктор, выступающий на оперативном совещании, мой коллега. 9. Цифровые технологии, разработанные учеными, позволяют изменить многое. 10. Пожалуйста, принесите все требуемые документы. 11. Проведенные исследования показали эффективность примененного метода лечения. 12. Бросив курить, он стал чувствовать себя гораздо лучше. 13. Строго говоря, вы должны придерживаться диеты и вести правильный образ жизни. 14. Серьезно раненый (seriously injured) он продолжал бежать. 15. Я посмотрел на книжную полку: одной книги не хватало (was missing). 16. Путешествуя вокруг света, он посетил очень много стран.

TEXT 5.4. DRUG ADMINISTRATION

Medicines and other chemicals, for both diagnostic and therapeutic reasons, and for purposes such as immunization or anaesthesia, can be administered in a wide variety of ways. The aim of therapeutic administration is for the active components of the medicine to reach the target site where it is intended to be effective. The technique and route used, such as an injection into a muscle, application of a cream to the skin, or ingestion of a pill, are influenced by both the formulation of the compound and the desired site and rapidity of action.

Injection and infusion

Injection is the act of introducing a substance into a body by means of some impulsive force, usually employing a syringe. The substance so injected is usually in a liquid form, and is employed to have a therapeutic effect either at the site of application or elsewhere in the body. Injected drugs usually act faster than those taken by mouth — and some substances, such as insulin, need to be injected, because they would be destroyed in the gut.

Infusion usually into a vein, but also sometimes into a body cavity, differs from injection in being a continuous, slow introduction of material, usually under pressure of gravity (as in a blood or saline infusion, or transfusion), and sometimes by a slow, mechanically-driven syringe. Materials to aid diagnosis, such as radioactive chemicals, or radioopaque dyes which show up on X-ray, are injected or infused, most commonly into veins or arteries.

Oral medication

Drugs to be given by mouth are produced in a wide array of formulations, including tablets, pills, and liquids. Aspirin, and also alcohol, are absorbed in the stomach, but most oral medications are designed to be absorbed in the small intestine, where nutrients are normally absorbed, and they are coated with a protective material so that they pass through the stomach intact.

Other routes

Some drugs are best absorbed through mucous membranes — such as the lining of the mouth, especially under the tongue — one of the best known being nitroglycerine for angina. Other sites for absorption can include the rectum, urethra, or nasal cavity. Ointments are preparations of a fatty or oily consistency, for the application of medicines to the skin or mucous membranes, and are intended either to exert a local effect — such as warming, cooling, pain relief, anti-infection; or to provide a protective barrier.

Few drugs penetrate readily through the layers of the skin. Absorption is determined by both the surface area over which an ointment is spread, and the solubility of the ointment. Some chemicals, such as toxic substances in organic solvents, can be absorbed rapidly through the skin and cause poisoning.

Some drugs can be delivered by inhalation, in the form of vapours or aerosols. They can be absorbed rapidly into the circulation through the pulmonary epithelium — the lining of the lungs. This route is used particularly for the treatment of respiratory diseases, such as asthma, and for the administration of volatile anaesthetics.

Pronunciation

Do you pronounce the *t* at the end of shouldn't and can't in these sentences?

You shouldn't act in this way. Yes.

1. We can't go out tonight because we're busy.
2. You shouldn't enter this competition.
3. You can't invent stories like that.
4. You can't relax until you finish your work.
5. They shouldn't ignore his advice.
6. You shouldn't talk so loudly.

Vocabulary

Memorize the following routes of administration of drugs:

enteral administration, parenteral administration, topical administration, administration by mouth (orally), sublingual administration, rectal administration.

Speaking

Describe the routes of administration of drugs. Give the advantages of the each of the route of administration of drug.

Writing

Write a translation of the following definitions:

Absorption is the process of movement of a drug from the site of application toward the systemic circulation.

Bioavailability is the rate at which and the extent to which the active moiety enters the general circulation, thereby permitting access to the site of action.

Distribution in pharmacology is a branch of pharmacokinetics which describes the reversible transfer of drug from one location to another within the body. *Elimination* is the removal of drugs from the body.

Comprehension

Read and translate the following passages:

Once a drug enters into systemic circulation by absorption or direct administration, it must be distributed into interstitial and intracellular fluids. Each organ or tissue can receive different doses of the drug and the drug can remain in the different organs or tissues for a varying amount of time. The distribution of a drug between tissues is dependent on vascular permeability, regional blood flow, cardiac output and perfusion rate of the tissue and the ability of the drug to bind tissue and plasma proteins and its lipid solubility.

pH partition plays a major role as well. The drug is easily distributed in highly perfused organs such as the liver, heart and kidney. It is distributed in small quantities through less perfused tissues like muscle, fat and peripheral organs. All drugs are eventually eliminated from the body. They may be eliminated after being chemically altered (metabolized), or they may be eliminated intact. Most drugs, particularly water-soluble drugs and their metabolites, are eliminated largely by the kidneys in urine. Therefore, drug dosing depends largely on kidney function.

Active grammar

Modals 1: ability, permission, advice – can, may, will, shall, must, could, might, would, should, ought to

Modals 2: obligation, probability, possibility – must/mustn't, have to, need to, had to, didn't have to, should, ought to, may, might

Modals 3: could have, should have, must have had

A. Translate the following:

1. Could you give me a lift to the airport? 2. I like to keep fit, so I must do exercises every day. 3. You mustn't make a noise. The baby's asleep. 4. "Can you repair my watch, please?" "Certainly." 5. You shouldn't sit in the sun for too long. 6. I can't read small writing any more. I think I need glasses. 7. We don't have to rush. We've got plenty of time. 8. I'll be able to meet you in London next Saturday. 9. I have to take this medicine for ten days and then go to see Doctor Brown again. 10. It may be difficult to get used to living on your own when you go to university. 11. I might study maths, but I'm not sure. 12. Penny can't have eaten all that cake by herself. 13. They must be tired. They've been traveling all night. 14. When you're on a diet you mustn't give in to the temptation to eat chocolate. 15. He might have been to a party. 16. All visitors need to turn off their mobile phones. 17. You don't need to pay to send an e-mail. 18. We could have gone to the party, but we decided

not to in the end. 19. You must have had a lovely holiday! 20. I feel terrible! I think you must have given your cold to me. 21. We must check all these documents very carefully. 22. The process of drug creation may involve buying new equipment or building a new factory to produce the drug on a mass scale. 23. Once everything is in place, drug manufacturing can begin. 24. Certain drugs are special, because they can be addictive, or they change the way other drugs act, or they need to be taken in a special way.

B. Complete the sentences with modals.

1. Speak up! I____ hear you.
2. _____ I borrow your reference book?
3. The doctor says I _____walk again in two weeks' time.
4. I phoned you yesterday, but I ____ get an answer. Where were you?
5. I went for a ten-mile run last Saturday. It nearly killed me! I _____move on Sunday.
6. You _____ be home by 11.00.
7. I _____ stay in bed for a few days oin the doctor's orders.
8. I ____ go and see the doctor.
9. Sorry. I can't come on Friday. I____ go to the doctor's at 3.00.
10. Do not drink the water from the river, it ____ be contaminated.
11. It's one o'clock. The meat _____be ready.
12. This substance is so poisonous. It _____ kill in seconds.
13. It's snowing, so it_____ very cold outside.
14. We _____ to wear a uniform at work.
15. _____we swim in the lake?

C. Give advice to people in the following situations. Use *should.*

I just can't get to sleep these days. You should cut down on coffee.

1. She has a terrible headache.
2. He has a nosebleed.

3. I’m eager to lose weight.

4. I can’t help drinking much water.

5. I can’t concentrate on my work.

6. She spends most of her time in a sitting position.

7. I had a terrible day. I’m so tired.

8. I’m putting on weight.

D. Translate these sentences:

1. Необходимо быть очень осторожным, когда переходишь улицу. 2. Ты должен иметь с собой паспорт, когда едешь за границу. 3. Не надо было останавливаться в самом дорогом отеле города. 4. Я смогу встретить тебя в аэропорту завтра утром. 5. Извини, я не смог забронировать тебе билет в Париж. 6. Турагентство не может поменять даты вылета вашего самолета. 7. Нельзя парковать машину около светофоров и переходов. 8. Нам пришлось повернуть направо поскольку дорога была закрыта. 9. Не делай этого! 10. Я должен идти в банк. У меня встреча с менеджером. 11. Тебе следует быть более вежливым с клиентами. 12. Если хочешь сдать экзамен, ты должен хорошо подготовиться к нему. 13. Становиться темно. Нам следует поторопиться. 14. Ты должен ходить в спортзал регулярно. 15. Мне необходимо быть в аэропорту через десять минут. 16. Лекарства следует запивать водой на голодный желудок (on an empty stomach). 17. Профилактические и медицинские протоколы должны быть основаны на индивидуальных генетических данных пациентов. 18. Следует помнить, что наилучший способ избавиться от проблемы (to get rid of a problem) – это решить ее (to solve). 19. Вам не нужно нервничать из-за этого. 20. Нам больше не нужно об этом говорить. 21. Должен ли он путешествовать в такую даль (to travel that far)? 22. Можно попросить счет (a bill).

TEXT 5.5. DRUG INTERACTIONS

A drug interaction is a situation in which a substance (usually another drug) affects the activity of a drug when both are administered together. This action can be synergistic (when the drug's effect is increased) or antagonistic (when the drug's effect is decreased) or a new effect can be produced that neither produces on its own. Typically, interactions between drugs come to mind (drug-drug interaction). However, interactions may also exist between drugs and foods (drug-food interactions), as well as drugs and medicinal plants or herbs (drug-plant interactions). People taking antidepressant drugs such as monoamine oxidase inhibitors should not take food containing tyramine as hypertensive crisis may occur (an example of a drug-food interaction). These interactions may occur out of accidental misuse or due to lack of knowledge about the active ingredients involved in the relevant substances.

It is therefore easy to see the importance of these pharmacological interactions in the practice of medicine. If a patient is taking two drugs and one of them increases the effect of the other it is possible that an overdose may occur. The interaction of the two drugs may also increase the risk that side effects will occur. On the other hand, if the action of a drug is reduced it may cease to have any therapeutic use because of under dosage.

The pharmaceutical interactions that are of special interest to the practice of medicine are primarily those that have negative effects for an organism. The risk that a pharmacological interaction will appear increases as a function of the number of drugs administered to a patient at the same time.

It is also possible for interactions to occur outside an organism before administration of the drugs has taken place. This can occur when two drugs are mixed, for example, in a saline solution prior to intravenous injection.

Drug interactions may be the result of various processes. These processes may include alterations in the pharmacokinetics of the drug, such as alterations in the absorption, distribution, metabolism, and excretion (ADME)

of a drug. Alternatively, drug interactions may be the result of the pharmacodynamic properties of the drug, e.g. the co-administration of a receptor antagonist and an agonist for the same receptor.

Pronunciation

The spelling and pronunciation of the words to be memorized:

Live – leave, see – sea, whether – weather, quite – quiet, fill – feel, peace – piece, taught – thought, height – high, width – wide, because – of course

Vocabulary

Explain the meaning of the following:

a drug-drug interaction; a drug-food interaction; a drug-plant interaction.

Translation

Write a translation of the following sentences:

Therapeutic benefits of a drug on the market far outweighs it risks. All drugs are likely to have some side effects – unwanted action of a drug, e.g. drowsiness from an antihistamine given to relieve allergic symptoms, or acceleration of the heart by a drug given for asthma. The term is not usually applied to the toxic effects of an overdose, but to an effect of a standard therapeutic dose.

A side effect is usually regarded as an undesirable secondary effect which occurs in addition to the desired therapeutic effect of a drug or medication. Side effects may vary for each individual depending on the person's disease state, age, weight, gender, ethnicity and general health.

Writing

Write a synopsis of the following:

Pharmaceutical products save lives every day. Manufacturers of these important drugs spend many millions of dollars over many years to bring a product to the market. At the beginning of the process that ends with a new

pharmaceutical product is the research into a specific ailment. The researchers investigate the specific disorder to understand all aspects and perform experiments to investigate possible methods of controlling it. Depending on the results of laboratory experiments, some of these will be taken into the development stage. After the laboratory experiments produced favorable results, the product is then moved to the development stage. The product will undergo a four phase clinic trial, where each stage of the trial is designed to answer a separate research question. To get approval to manufacture and sell a new pharmaceutical product to the public, a company must provide the FDA (Food and Drug Administration) with proof of the quality, efficacy, and safety of the product. In the European Union, each member country has its own regulatory agency.

Comprehension

Read and translate the following text on the Future of Pharma Industry– Biotechnology

Biotechnology can be defined as the use of living systems and organisms to develop or make useful products, or "any technological application that uses biological systems, living organisms or derivatives in order to make or modify products or processes for specific use. However, contrary to its name biotechnology is not a single technology. Rather it is a group of technologies that share two (common) characteristics; working with living cells and their molecules and having a wide range of practice uses that can improve our lives.

Biotechnology is being increasingly used in Drug production where biotechnical methods are now used to produce many proteins for pharmaceutical and other specialized purposes. A harmless strain of Escherichia coli bacteria, given a copy of the gene for human insulin, can make insulin. As these genetically modified (GM) bacterial cells age, they

produce human insulin, which can be purified and used to treat diabetes in humans. Microorganisms can also be modified to produce digestive enzymes.

Active grammar

The Passive Voice

I. What is the difference between the following sentences:

1. a) During the last experiment we have fully established the properties of this substance. b) The properties of this substance have been fully established.

2. a) They have arranged the elements according to a definite system. b) Elements have been arranged according to a definite system.

3. a) Based on their penetration, ointments have been divided into three classes. b) Based on their penetration, we have divided ointments into three classes.

II. Translate the following:

A. 1. In the history, attention should be given to the mode of onset and course. 2. This sports bag is made of leather. 3. English is spoken all over the world. 4. A report on pollution in city centre has been given to the government. 5. What can be done to improve the situation with rubbish on our streets? 6. An infant may be predisposed to neonatal sepsis by obstetric complications. 7. The education of health professionals should be designed in accordance with the health needs of society. 8. The amount of fat contained in a burger partly depends on how it is cooked. 9. The potato is an excellent source of starch, if eaten with the skin, is a good source of fibre. 10. The doctor was sent for. 11. The speaker was given a standing ovation. 12. I object to being criticized so stupidly. 13. The profits should be shared equally. 14. The home is the setting where health care is most commonly provided. 15. Measures should be taken to promote population in every country. 16. Quality is assessed on the basis of evidence and achievement of the best

results of scientific knowledge. 17. Much emphasis is placed on keeping equipment and work areas clean because of the danger of contamination. 18. Special precautions are taken to protect the relatively small number of employees who work with infectious cultures and poisonous chemicals. 19. Scientists who are involved in research and development usually have a master's or doctoral degree. 20. Hospital pharmacies can often be found within the premises of the hospital. 21. Medications are typically produced by pharmaceutical companies and are often patented to give the developer exclusive rights to produce them. 22. Those medications that are not patented (or with expired patents) are called generic drugs since they can be produced by other companies without restrictions or licenses from the patent holder. 23. Pharmacy is concerned with the manufacture, formulation, quality control, and dispensing of medicaments used to treat disease.

B. 1. Большинство работников завода по производству лекарств делятся на три профессиональные группы. 2. Это лекарство будет запущено в производство в следующем году. 3. Делегатов конференции встретили на вокзале. 4. Ему часто задают вопросы о законности производства некоторых лекарств. 5. Эта лаборатория ремонтируется (to repair). 6. Когда была построена эта аптека? 7. Нас пригласили на конференцию по проблемам современной фармации. 8. Ваша работа должна быть закончена как можно скорее. 9. Деловые письма обычно пишутся на специальных бланках (special form). 10. Вопрос будет обсужден на следующем собрании. 11. Лекарства были закуплены вчера. 12. Лекарства, имеющие органическую структуру, должны приниматься за полчаса или час до еды (before meal-time). 13. Чай содержит химически активные вещества, из которых могут быть произведены многие медицинские препараты (to derive). 14. Лекарства получают из растений или синтезируют в лаборатории. 15. Эти препараты широко применяются в кардиологии.

TEXT 5.6. DRUG TOXICITY

In the context of pharmacology, toxicity occurs when a person has accumulated too much of a drug in his bloodstream, leading to adverse effects within the body. Drug toxicity is the critical or lethal reaction to an erroneous dosage of a medication. It may occur due to human error or intentional overdose in the case of suicide or homicide. The effects of the medication are more pronounced at toxic levels, and side effects may be severe. The reasons for toxicity vary depending on the mixture of drugs. Toxicity may result when the dose is too high, or it may result when the liver or kidneys are unable to remove the drug from the bloodstream. Many commonly prescribed medications can accumulate in the bloodstream and result in toxicity. Symptoms of drug toxicity depends on the drug taken. Treatment for drug toxicity also depends on the drug taken and the blood level of the drug.

All drugs have both primary intended effects and secondary unintended effects, the latter known as side effects or adverse effects. Although side effects can be neutral or even beneficial, side effects are typically undesirable. Adverse effects can range in severity from nuisance to life threatening. These effects make many patients unwilling to take drugs on a regular basis, and this lack of compliance represents a major practical limitation of pharmacotherapy.

Drug toxicity, also called adverse drug reaction (ADR) or adverse drug event (ADE), is defined as the "manifestations of the adverse effects of drugs administered therapeutically or in the course of diagnostic techniques. It does not include accidental or intentional poisoning..." The meaning of this expression differs from the meaning of "side effect", as this last expression might also imply that the effects can be beneficial.

Pronunciation

Find the transcription of these words in a dictionary and pronounce them properly:

industry, manufacturing, firm, company, patent, product, efficacy, safety, research, biochemistry, trial, result, discovery.

Vocabulary

Learn the following antonyms:

minority – majority, accidental – intentional, outpatients – inpatients, important – unimportant, predictable – unpredictable, hyposensitivity – hypersensitivity, benign – malignant, expected – unexpected.

Speaking

In pairs, discuss the topic “Drug trials” having read the text:

After laboratory screening, firms conduct clinical investigations, or "trials," of the drug on human patients. Human clinical trials normally take place in three phases. First, medical scientists administer the drug to a small group of healthy volunteers in order to determine and adjust dosage levels, and monitor for side effects. If a drug appears useful and safe, additional tests are conducted in two more phases, each phase using a successively larger group of volunteers or carefully selected patients. Once a drug has successfully passed animal and clinical tests, the Food and Drug Administration (FDA) must review the drug’s performance on human patients, the results of which have been carefully documented, before approving the substance for commercial use. The entire process, from the first discovery of a promising new compound to FDA approval, can take up to 15 years, but scientific and information technology advances will shorten that process considerably for many drugs. After FDA approval, problems of production methods and costs must be worked out before manufacturing begins.

Comprehension

Render the main idea of the text below:

Toxicology (from the Greek words τοξικός - toxicos "poisonous" and logos) is the study of poisons, an extension of pharmacology. It is concerned with the study of the adverse effects of chemicals on living organisms. It studies symptoms, mechanisms, treatments and detection of poisoning, especially the poisoning of people. Its functions have expanded from identifying poisons and searching for treatments to include forensic toxicology (forensic medicine) and testing and detection of a fast-growing number of new potentially toxic substances used in workplaces, in agriculture (e.g., insecticides, other pesticides, fertilizers), in cosmetics, as food additives, and as drugs (see drug poisoning). Perhaps the area of largest expansion is the study of toxic waste in the air, water, and soil, including chlorofluorocarbons, acid rain, dioxin, and radioactive isotopes.

Translation

Read and translate the text about drug toxicity

A person with drug toxicity has accumulated too much of a medication in the bloodstream. The effects of the medication are more pronounced at toxic levels, and side effects may be severe. Toxicity may result when the dose is too high, or it may result when the liver or kidneys are unable to remove the drug from the bloodstream. Many commonly prescribed medications can accumulate in the bloodstream and result in toxicity. Symptoms and treatment of drug toxicity depends on the drug taken.

Active grammar

Zero Conditional. Conditional I

I. Learn the following patterns:

1. If I do well in my exams, I will be pleased.
2. If I fail my school exams, I won't be able to go to university.
3. If I drink this, will I feel better?
4. If you heat water to 100°, it boils.

5. If it rains, the roads get slippery and dangerous.

II. Translate the following:

A. 1. If I leave soon, I'll get there on time. 2. If she goes jogging, she takes a bottle of water with her. 3. If I start saving some money, I'll be able to buy a new car. 4. When she has a problem with her weight, she tries to take more exercise. 5. If I have a bad day, I do more exercises at the gym. 6. If you continue to eat lots of chocolate, you will put on weight. 7. If the weather is good, we'll go to the countryside. 8. We'll go swimming unless it rains. 9. If you park your car on double yellow lines, you pay a fine. 10. You may hurt yourself, if you try to lift those weights. 11. If John gets himself fit, he can play for us next week. 12. If you go to Paris, you must go up the Eiffel Tower. The views are fantastic. 13. If the pain gets too bad, take another dose of painkillers. That should help. 14. When I see you, I'll tell you all our news. 15. As soon as I get back, I'll get in touch. 16. Don't go without me. Wait until I'm ready. 17. If you have hangover, drink lots of fizzy water. 18. Provided (that) the referee arrives in time, the game will start at seven. 19. If you expose a wound to air, it heals more quickly. 20. Unless she asks you politely, refuse to do any more work for her. 21. If preliminary tests show positive results, animal and human testing follow. 22. If a drug is approved for widespread use, a drug manufacturer develops a cost-effective way to mass produce the drug. 23. Even if the antibiotic in question is ineffective, it is still possible that a future researcher may discover a more beneficial use for the drug. 24. If the results match with the pharmaceutical company's findings, the drug is approved for use in the United States. 25. If a drug is approved for commercial use, a pharmaceutical company must still develop an economical method of drug manufacturing.

B. 1. Если погода улучшится, мы пойдем гулять. 2. Если тебе хочется выйти погулять, я позвоню тебе. 3. Если он выяснит правду,

отрицай все. 4. Если не можешь сделать это сам, попроси помощи у Тома. 5. Он не сдаст экзамены, если не будет усердно заниматься. 6. Ты опоздаешь на самолет, если не возьмешь такси. 7. Если не действовать быстро, пациент умрет. 8. Ты наберешь вес, если не будешь вести активный образ жизни. 9. Если будешь стоять под дождем, промокнешь. 10. Я сдам экзамен, если буду заниматься. 11. Если пойдет дождь, мы останемся дома. 12. Если ты скажешь в какой она больнице, я пойду и навещу ее. 13. Если ты чувствуешь себя плохо, тебе лучше остаться дома. 14. Если применять лекарства не по назначению (to use off-label), можно навредить здоровью. 15. Если запивать лекарство водой, а не соком, то результат лечения будет эффективным. 16. Вы не возражаете, если я посоветую вам взять другой препарат. 17. Что будем делать, если не будет билетов? 18. Я позвоню тебе, если буду работать допоздна (to work late). 19. Если мы не сядем на первый поезд (to get the first train), мы будем ждать следующий. 20. Если я потеряю работу, буду искать другую. 21. Если подогреть лед, он превратится в воду (to turn to). 22. Если ты не был в этой стране, (unless you've been in…) ты не представляешь, насколько это замечательное место. 23. Попроси его подождать, если он придет туда до меня. 24. Если я потеряю эту работу, буду искать другую, более интересную. 25. Если температура равна нулю, вода замерзает (to freeze). 26. Если вы нагреете (to heat) воду, она закипит.

UNIT IV

PHARMACY PRACTICE

Pharmacy practice is the discipline of pharmacy which involves developing the professional roles of pharmacists. There are various specialties of pharmacy practice. Specialization in pharmacy practice is typically based on the place of practice or practice roles including: community, hospital, clinical pharmacy, consultant, drug information, regulatory affairs, industry, and academia.

TEXT 1. PROFESSIONALS

Reading A. PHARMACISTS

Pharmacists, also known as druggists or chemists, are healthcare professionals who practice in pharmacy, the field of health sciences focusing on safe and effective medication use. The role of the pharmacist has shifted from the classical "lick, stick, and pour" dispensary role (that is, "lick & stick the labels, count the pills & pour liquids"), to being an integrated member of the health care team directly involved in patient care. Pharmacists undergo university-level education to understand biochemical mechanisms of action of drugs, drug uses and therapeutic roles, side effects, potential drug interactions, and monitoring parameters. This is mated to education in anatomy, physiology, and pathophysiology. Professional interpretation and communication of this specialized knowledge to patients, physicians, and other health care providers are functions which pharmacists provide, and are central to the provision of safe and effective drug therapy.

Among other licensing requirements, different countries require pharmacists to hold either a Bachelor of Pharmacy or Doctor of Pharmacy degree.

The most common pharmacist positions are that of a community pharmacist (also referred to as "retail pharmacist", "first-line pharmacist" or "dispensing chemist"), or a hospital pharmacist, where they instruct and counsel on the proper use and adverse effects of medically prescribed drugs and medicines. In most countries, the profession is subject to professional regulation. Pharmacists may also practice in a variety of other settings, including industry, wholesaling, research, academia, military, and government. Pharmacists are highly-trained and skilled healthcare professionals who perform various roles to ensure optimal health outcomes for their patients. Many pharmacists are also small-business owners, owning the pharmacy in which they practice.

Reading B. PHARMACY TECHNICIANS

A Pharmacy technician, also sometimes known as a pharmaceutical technician, is a health care worker who performs pharmacy related functions, generally working under the direct supervision of a licensed pharmacist or other health professional. Pharmacy technicians work in a variety of locations, usually in community and hospital pharmacies but also sometimes in pharmaceutical manufacturers, third-party insurance companies, computer software companies. Job duties include dispensing prescription drugs and other medical devices to patients and instructing on their use. They may also perform administrative duties in pharmaceutical practice, such as reviewing prescription requests with doctor's offices and insurance companies to ensure correct medications are provided and payment is received. In recent times, they also speak directly with the patients on the phone to aid in the awareness of taking medications on time.

In many countries, both developed and developing, the relative importance of pharmacy technicians within the pharmacy workforce has been amplified in recent years, largely as a reaction to pharmacist shortages, resulting in an increase in their numbers and responsibilities. Practical

training, such as completing an internship in a pharmacy, is also often required as part of training for employment as a pharmacy technician.

Pronunciation

The following groups of four words are all spelt with *–ea-*. Underline the word with the different pronunciation.

a) head	spread	health	easy
b) lead	teach	wealthy	clean
c) hear	clear	dear	read
d) bread	dead	weather	meal
f) defeat	scream	seat	ready

Vocabulary

Translate the following word combinations and use them in your own sentences: communication skills, health sciences, health promotion, health care, health services, a health care provider, a community pharmacist, pharmaceutical care.

Speaking

Discuss the topic “I’m a student of pharmacy”

Translation

The text to be translated:

Pharmacy practice research is a specialty within the wider area of health services research. As such its aims are similar but the context is limited to settings where pharmacists are employed or medicines are prescribed, supplied or used. It examines how and why people access pharmacy services, how much care costs, and what happens to patients as a result of this care. It is research which seeks to understand and optimise the way professionals, patients and the public think about and access medicines and pharmacy

services. The goals of pharmacy practice research are to support the clinical and effective use of medicines, ensuring that associated risks are minimised and effect is maximised. In general, it is concerned with the delivery of and access to pharmaceutical care, and other health related services delivered by pharmacists and their staff. It is undertaken by researchers, usually based in universities, from a wide range of health care disciplines. These are often pharmacists together with statisticians, health psychologists, social scientists, health economists, and epidemiologists who are regularly involved as well as doctors, nurses and other health care professionals.

Discussion

Make up dialogues of your own using the active vocabulary of the previous texts.

Comprehension

Read and translate the following text:

PHARMACIST CODE OF ETHICS

Pharmacists are health professionals who assist individuals in making the best use of medications. This Code, prepared and supported by pharmacists, is intended to state publicly the principles that form the fundamental basis of the roles and responsibilities of pharmacists. These principles, based on moral obligations and virtues, are established to guide pharmacists in relationships with patients, health professionals, and society.

I. A pharmacist respects the covenantal relationship between the patient and pharmacist.

II. A pharmacist promotes the good of every patient in a caring, compassionate, and confidential manner.

III. A pharmacist respects the autonomy and dignity of each patient.

IV. A pharmacist acts with honesty and integrity in professional relationships.

V. A pharmacist maintains professional competence.

VI. A pharmacist respects the values and abilities of colleagues and other health professionals.

VII. A pharmacist serves individual, community, and societal needs.

VIII. A pharmacist seeks justice in the distribution of health resources.

Writing

Write a translation of the following text:

Oath of a Pharmacist

At this time, I vow to devote my professional life to the service of all humankind through the profession of pharmacy.

I will consider the welfare of humanity and relief of human suffering my primary concerns.

I will apply my knowledge, experience, and skills to the best of my ability to assure optimal drug therapy outcomes for the patients I serve.

I will keep abreast of developments and maintain professional competency in my profession of pharmacy. I will maintain the highest principles of moral, ethical and legal conduct.

I will embrace and advocate change in the profession of pharmacy that improves patient care.

I take these vows voluntarily with the full realization of the responsibility with which I am entrusted by the public.

Active grammar

Conditionals II and III

I. Learn the following patterns:

1. If I were you, I would (I'd) look for another job.

2. If I weren't working, I'd come.

3. I wish it would stop raining.

4. If he hadn't been rude to his boss, he wouldn't have lost his job.

II. Translate the following:

A. I would feel better if I had somewhere to let off steam. 2. If I had a headache I would take an aspirin. 3. If we had enough money, we'd have a holiday. 4. If I were clever, I'd be a doctor. 5. If I didn't have a headache, I could go swimming. 6. I'd make an omellete, if there were some eggs. 7. If I had spare time. I'd learn French. 8. If you ate less, you might be thinner. 9. Graff might have been the best tennis player in the world, if she had not had so many injuries. 10. If you wanted, you could take up tennis. 11. If I had to choose between fizzy mineral water or still mineral water, I'd rather have fizzy mineral water. 12. I wish I could ski. (I can't ski). 13. I wish I wasn't going to the dentist. 14. It rained the whole of my holiday. I wish it hadn't rained. If only it had been warm and sunny. 15. If he had worked harder, he would have been promoted. 16. Wait until I come back. 17. If he were (was) here, he would help us. 18. Should I see him tomorrow, I should ask him about it. 19. If he had come (Had he come), I should have been glad. 20. If I had seen him, I should have told him that you wanted to speak to him. 21. If I won a million dollars, I would start a business of my own. 22. If I were (was) rich, I wouldn't work.

B. Put the verbs in brackets in the correct tense to form either a first or a second conditional clause.

a) If it _____(rain) this weekend, we _____(not be able) to play tennis.

b) If I _____(have) any spare time, I_____(take up) a sport like golf.

c) If I _____(be) taller, I_____(can) be a policeman, but I'm too short.

d) Please start your meal. If you ____(not have) your soup now, it____ (go cold).

e) If you _____(have) any problems, let me know and I____(come) and help you straight away.

f) You're a brilliant cook! If I ____(can) cook as well as you I____(open) a restaurant.

g) If you _____(need) help, who would you_____(ask)?

h) If I _____(try), I should be able to do it.

TEXT 2. A PHARMACY

A pharmacy (commonly the chemist in Australia, New Zealand and the UK; or drugstore selling not only medicines, but also miscellaneous items such as candy (sweets), cosmetics, and magazines, as well as light refreshments or groceries in North America; retail pharmacy in industry terminology; or Apothecary, historically) is the place (an establishment) where most pharmacists practice the profession of pharmacy. It is the community pharmacy where the dichotomy of the profession exists—health professionals who are also retailers.

General practice is carried on in exclusive prescription pharmacies, semiprofessional pharmacies, and drug stores. It consists of compounding and dispensing drugs on order of the physician, dentist, or veterinarian; serving as consultant on drugs to the health professions and to the public; and selling other health supplies such as antiseptics, bandages, and home remedies.

A hospital pharmacy includes special administrative features, provision of drugs for nursing stations, manufacturing of pharmaceutical preparations, teaching of nurses and medical and pharmacy interns, service to the hospital committee on pharmacy and therapeutics, preparation and revision of a hospital formulary, and monitoring the drug regimen of the individual patient (clinical pharmacy).

Pharmacies are typically required to have a pharmacist on-duty at all times when open. It is also often a requirement that the owner of a pharmacy must be a registered pharmacist, although this is not the case in all

jurisdictions, such that many retailers (including supermarkets and mass merchandisers) now include a pharmacy as a department of their store.

Likewise, many pharmacies are now rather grocery store-like in their design. In addition to medicines and prescriptions, many now sell a diverse arrangement of additional items such as cosmetics, shampoo, office supplies, confections, snack foods, durable medical equipment, greeting cards, and provide photo processing services.

The symbols most commonly associated with pharmacy are the mortar and pestle and the ℞ (recipere) character. Pharmacy organisations often employ other elements such as the Bowl of Hygeia, conical measures, and caduceuses in their logos. Other symbols are common in different countries such as the green Greek cross in France, and the Gaper in the Netherlands, Russia.

Pronunciation

1. Learn to distinguish while reading the following words and read them properly:

future, feature, further, farther; though, although; through, throughout; taught, thought; simple, sample

2. Read, translate and pronounce the following word groups:

pharmacy – pharmaceutical – pharmacist; therapy – therapeutics – therapeutic – therapist; surgery – surgical – surgeon; profession – professional; application – applicant; practice – practical – practitioner, experience – experienced – expert; science – scientific – scientist.

Vocabulary

Match these words with their definitions:

1. a clinic a) a facility that provides controlled conditions in which scientific research, experiments my be performed

2. a hospital b) a place where a wide range of health care services can be obtained without the need for an overnight stay

3. a pharmacy / a drug store c) an institution for health care providing specialized treatment for inpatient stays

4. a laboratory d) a medical facility that gives health care for patients in an area

5. a polyclinic e) an establishment engaged in retailing prescription or non prescription drugs or medicines, and other types of medical goods.

Useful information

Try to distinguish the functions of the word "one" in different sentences while reading and translating them:

1. Physics is one of the oldest academic disciplines. 2. It's a vitally important job, not an easy one. 3. The physician had previously treated one of the patients. 4. Mild cases of scarlet fever as contagious as severe ones. 5. The more one learns the more one knows. 6. This book is a good one. 7. This method permits one to get good results. 8. Methylene attacks secondary hydrogen bonds many times as fast as it does the primary ones. 9. One can read such a text without a dictionary. 10. This text is more difficult than the one we read last week. 11. No one should be allowed to break the law and escape punishment for it.

Discussion

Read the following passages and discuss the difference between types of pharmacies:

Community pharmacies usually consist of a retail storefront with a dispensary where medications are stored and dispensed.

Pharmacies within hospitals differ considerably from community pharmacies. Some pharmacists in hospital pharmacies may have more

complex clinical medication management issues whereas pharmacists in community pharmacies often have more complex business and customer relations issues. Hospital pharmacies usually stock a larger range of medications, including more specialized medications.

Clinical pharmacy is the branch of Pharmacy where pharmacists provide patient care that optimizes the use of medication and promotes health, wellness, and disease prevention. Clinical pharmacists care for patients in all health care settings but the clinical pharmacy movement initially began inside hospitals and clinics. Clinical pharmacists often collaborate with physicians and other healthcare professionals.

Ambulatory care pharmacy is based primarily on pharmacotherapy services that a pharmacist provides in a clinic. Pharmacists in this setting often do not dispense drugs, but rather see patients in office visits to manage chronic disease states.

Consultant pharmacy practice focuses more on medication regimen review (i.e. "cognitive services") than on actual dispensing of drugs. Consultant pharmacists most typically work in nursing homes.

Since about the year 2000, a growing number of Internet pharmacies have been established worldwide. Many of these pharmacies are similar to community pharmacies, and in fact, many of them are actually operated by brick-and-mortar community pharmacies that serve consumers online and those that walk in their door. The primary difference is the method by which the medications are requested and received.

Comprehension

Read the job profiles:

1. I collect drug safety information about patients on our medications. I must report any serious adverse events to the health authorities.

2. When a company starts to test drugs on live subjects, I work closely with the doctors to make sure the studies are done correctly.

3. In my work, I develop pharmaceutical dosage forms. At the moment, I am changing a tablet formulation into ointment and get forms.

4. My job is to make sure that suitable, clean containers are used to get the product from the company to the patient. In general, I check for compliance with health regulations.

5. I operate complex scientific instruments and perform tests to determine whether ingredients in liquids, powders, or tablets meet requirements.

6. I co-ordinate and manage the cross-functional teams that develop and launch a drug. It’s not easy to get people meet deadlines.

7. According to European law, I am personally responsible for the quality of each product that leaves the production line. I must manage all the processes in production, QA, and the labs to make sure Standard Operating Procedures (SOPs) are followed.

Writing

Write a translation of the following text:

Prescription drugs include barbiturates, antibiotics and certain tranquilizers. The pharmaceutical company direct it's efforts of the drugs at physicians and dentists since these drugs require a prescription. The company advertises displays at medical and dental meetings, in professional journals and in mail out literature. The medical service representatives that are employed by drug firms have the responsibility of telling doctors about the product.

Nonprescription drugs include aspirins and some cough medicines. These drugs are considered to be safe enough to be sold over the counter. They don't need prescriptions from physicians or dentists. Any store or establishment can sell such drugs. As a result of this pharmaceutical firms can advertise these drugs widely to the public.

Translation

Try to translate the following text into English:

Апте́ка – это особая специализированная организация системы здравоохранения. Она занимается изготовлением, фасовкой, анализом и продажей лекарственных средств. Аптека традиционно рассматривается как учреждение здравоохранения. Ее деятельность связана с оказанием фармацевтической помощи населению. Фармацевтическая помощь включает в себя процедуру консультирования врача и пациента с целью определения наиболее эффективного, безопасного лечения. Первые аптеки возникли в VIII веке в Багдаде. Открытие первой аптеки в России состоялось в 1581 году. В 1701 году Пётр I издал указ об организации в Москве частных аптек. Если в конце XVIII века в России насчитывалось примерно 100 аптек, то сейчас их сотни тысяч по всей стране.

Active grammar

Reported speech. Sequence of Tenses.

Change these sentences from direct into reported speech. Remember that there are three types of Direct Speech which can be reported: statements, questions, commands/requests, e.g. 1. " The plane will be late ", they said. **They said (that) the plane would be late.** 2. "Are you feeling well?" he asked me. **He asked me if I was feeling well**. 3. "Don't touch it", he said. **He told me not to touch it.** 4. He asked, "Do you speak English?" **He asked me whether / if I spoke English.**

Translate the following:

A. 1. "I work at the local pharmacy", she said. 2. "We are meeting the social worker soon", he said. 3. "He has wanted that job for ages", she said. 4. "I have been waiting for the doctor", he said. 5. "I failed my driving test", he said. 6. "She was waiting for two hours to see the chief doctor", they said. 7. "I'm having a nice time", she said. 8. "I'll be working in London next

year", he said. 9. The teacher said, "Study harder". 10. He said to me, "Please don't move~". 11. "I don't know what to do", he said to Mary. 12. He said to me, "You must not enter that room". 13. He said, "You may go". 14. She said, "Happy birthday to you!". 15. She said to Jane, "Where are Miss Johansson's medical notes?" 16. "I have never smoked", Mr. Marks said to the nurse. 17. "Is there any tenderness in your abdomen?" asked the doctor. 18. He said, «I have been waiting for you since five o'clock". 19. He said to her, "You must consult your doctor". 20. Mary said to me, «I am going to the mall this afternoon to buy some clothes". 21. "It's useless to think repeatedly about the past", he said to me. 22. "Can you help me open this bottle of medicine?", she asked the nurse. 23. The doctor asked the patient, "What is the date of your birth?".

B. 1. Она сказала, что хочет стать провизором и работать в этой аптеке. 2. Мой друг сказал, что купил эту книгу в Лондоне. 3. Студенты сказали, что окончат университет в этом году. 4. Мы спросили их могут ли они помочь нам сделать эту работу. 5. Он сказал, что его отец доктор. 6. Хирурги сказали, что проведут операцию на следующей неделе. 7. Пациентка сказала, что принимала антидепрессанты несколько лет назад. 8. Он сказал мне, что лечение было эффективным. 9. Врач сказал пациенту, что необходимо повторить процедуру десять раз. 9. «Принимайте по одной таблетке после каждой еды», сказал мне доктор. 10. Врачи говорят: «Не забывайте соблюдать личную гигиену». 11. «Я не знаю, что делать», сказал он Мэри. 12. «Выключите свет», сказал он. 13. Преподаватель сказал нам: «Занимайтесь усерднее». 14. Он спросил: «Вы работаете в этой аптеке?» 15. Она сказала, что этого лекарства нет в продаже. 16. Он сказал, что послал им прайс-лист в понедельник. 17. Он сказал, что он не может перевести текст. 18. Они сказали нам, что жили в Париже. 19. Он спросил закончился ли эксперимент успешно. 20. Она сказала, что готовит обед. 21. Пациентка

сказала, что ее зовут Джулия Стейн и что ей 23 года. 22. Медсестра спросила сколько мне лет. 23. Я сказал врачу, что впервые заболел в июле.

C. 1. She realized that nobody (will come/would come). 2. We understood that she (sees/saw) nothing. 3. He said he (will arrive/would arrive) in some days. 4. My mother was sure I already (have come/had come). 5. I didn't know they (are/were) in the room. 6. We supposed the rain (will stop/would stop) in some hours. 7. He said he never (has been/had been) to London. 8. We wanted to know who (is singing/was singing) in the next room. 9. I always thought he (is/was) a brave man. 10. When I saw him, he (is working/was working). 11. We know she always (comes/came) in time. 12. They thought he (will have finished/would have finished) his work by the evening. 13. She said she (has/had) a terrible headache. 14. We supposed they (will send/would send) us the documents. 15. He said he (has not seen/had not seen) us for ages. 16. I knew this (will happen/would happen) again. 17. I saw that she (is writing/was writing) a report. 18. I knew where she (has gone/had gone). 19. Mendeleyev predicted that the vacant places in his table (will be filled/would be filled) by yet unknown elements. 20. He said that he (will help/would help) them. 21. They thought that the experiment (is successfully completed/was successfully completed). 22. We were told that the drug dosage (is individual according to the disease and its severity/was individual according to the disease and its severity). 23. Dr Weston says she (she’s sending/was sending) a patient for observation. 24. He asked if I (can/ could help him get out of bed and get dressed).

PART II

UNIT I
PHARMACY EDUCATION

TEXT 1. PHARMACY EDUCATION IN RUSSIA

In Russia, individuals who want to become pharmacists enter Schools of Pharmacy or Faculties of Pharmacy of Medical Universities. After admission, a student will typically complete a five-year pharmacy program. Curricula are usually divided into pre-professional and professional parts. Students must first complete a pre-professional track that is typically two years in length and includes scientific courses in biology, physics, chemistry and biochemistry, physiology and social sciences. Foundational courses in pharmaceutical practices may also be included.

Pharmaceutical specialization starts in the third year of studies. The curriculum includes pharmacology, pharmaceutical chemistry, pharmacognosy, technology of drugs, pharmacy law and policy, pharmacy administration.

The instructional methodology in Russian pharmaceutical schools includes lectures by the leading specialists and regular practical classes throughout the course of studies. Pharmacy education includes practice experiences. Introductory pharmacy practical courses may take many forms, and introduce students to the practice of pharmacy.

Students are taught to use their knowledge, develop their professional skills, and to become key players in primary and preventive health care. The final year of the curriculum generally consists entirely of the advanced pharmacy practice experiences. After 5 years of pharmacy education in Russia, students pass a state examination according to the curriculum, and

obtain a Pharmacist's Diploma. They can start their professional career only after completion of a one-year internship in a pharmacy.

I. Answer the following questions:

1. What is the difference between Western and Russian pharmacy education? 2. What is the duration of a typical pharmacy training programme? 3. What are the basic subjects in the curriculum? 4. When does pharmaceutical specialization start? 5. How long is the advanced pharmacy practice?

II. Read, translate and retell the text in your own words:

Saint Petersburg State Chemical Pharmaceutical Academy was founded in 1919 and is one of the oldest and best higher education establishments in Russia. This is the leading higher education institution of Russia in the training of the specialists for Pharmacy and Biotechnology fields. In 2003 the Academy was recognized as the best Russian higher education establishment and became a gold medal winner "European Quality" as the laureate of the competition in the "100 Best State Universities of Russia" nomination. In 2006 the Academy became the laureate of the international award "Profession-Life" in the nomination "Medical educational establishment" of the year. The high level of scientific and pedagogical professionalism of the Academy's teachers plays the main role in these achievements. Over 80 % of its teaching staff has got the Degrees of Doctors and Candidates of Science.

Since 1955, the Academy has been preparing specialists for foreign countries in Pharmacy and Biotechnology with further instruction in Ph.D. and scientific trainings. At present students from over 50 countries of Asia, Africa, Near and Middle East, Europe study at the Academy. Departments of Faculties consider the specific character of the future graduates' job, and that is why courses such as Inflectional Tropical Diseases, Drug Plants of

Subtropical Zone, Pharmacological Aspects of Foreign Countries' Pharmaceutical Market are introduced in the program.

The students are provided with all facilities for interesting and good education – laboratories appointed with up-to-date medical equipment, large lecture halls, computer classes, reading room, Internet center, and students hostels for comfortable accommodation. Countryside drug plants garden is created on the campus of the Academy. Over 400 drug plants are cultivated in its collection lot. Students of the Faculty of Pharmacy spend a lot of time here during their practical classes.

Student scientific society takes active part in the scientific and research activities of the Academy. Creation of new medical and drug products, elaboration and development of production technologies are the main objects of the scientific activity at present. For its most important scientific achievements, the Academy annually receives about 20 certificates for new inventions. The Academy's students receive knowledge corresponding to the modern level of scientific and technical development in the field of Pharmacy as well as in social-economic and humanities fields. Such all-round specialists are especially in demand at world employment market.

The Pharmacy Faculty's graduates successfully work in pharmacy institutions (pharmacies), scientific laboratories; they hold executive positions in the enterprises of chemical pharmaceutical and medical industry, they work at pharmaceutical depots, control and analytical laboratories, forensic laboratories and other chemical laboratories that work with chemical synthesis, research of drug substance and ready medicines. Brilliant theoretical training and rich practical experience help the majority of them to open their own pharmacies and companies for medical elaboration and production; this way they contribute to the development of world pharmaceutical science. Upon successful completion of Biotechnology Faculty (Faculty of Medicines Industrial Technology), its graduates work at pharmaceutical plants and factories, perfumes and cosmetics laboratories, etc.

Upon successful completion of the University, the graduate gets higher education degree of Russian national standard indicating Degree/qualification and speciality. The graduate also gets an additional document “European Appendix”, which allows its holder to get its equivalence in any of 45 European and other countries signed up to the “Bologna Convention on the Recognition of Qualifications Concerning Higher Education” and to further education or apply for a prestigious job in these countries.

III. Find sentences in which the following words and word combinations are used: a higher education establishment, a gold medal winner, teaching staff, the Faculty of Pharmacy, chemical laboratories, practical experience, scientific trainings, development of production technologies, employment market, world pharmaceutical science, upon successful completion of the University.

TEXT 2. WESTERN PHARMACY EDUCATION

Pharmacy is a key player in primary and preventive health care and is defined as the science of the composition, use and dispensing of drugs. Pharmacy practice is committed to achieving optimum results from medication therapies in the interest of building a healthier society.

Individuals who want to become pharmacists will need a Doctor of Pharmacy (Pharm.D.) degree. To be accepted into a Pharm.D. program, students must first complete a pre-professional track that is typically two years in length and includes scientific courses in biology, chemistry, physics, anatomy and physiology. Foundational courses in pharmaceutical practices may also be included.

Students may consider Pharm.D. programs that are accredited by the Accreditation Council for Pharmacy Education (ACPE). Accreditation demonstrates that a program is preparing students to meet the standards of the

profession. According to the ACPE, state licensing boards require applicants to have graduated from an accredited program.

Pharm.D. programs are typically completed in four years and provide instruction on medical dosages, patient consultations and medication interactions. The curricula include coursework in pharmacy law, pharmacotherapy, dosage forms and health management. Students are familiarized with the equipment used on the job, including filling machines and flow cabinets.

Clinical experience is a major segment of a Pharm.D. program. In the first two years, students take Introductory Pharmacy Practice Experiences, in which students develop essential skills, such as consulting patients, delivering immunizations and performing screenings. During the final two years, students take Advanced Pharmacy Practice Experiences (APPEs) that place them in patient care settings under the supervision of licensed pharmacists. APPEs have rotations that allow students to experience different areas of pharmacy, including inpatient, ambulatory operations and electives.

The role of pharmacy education, pharmacist licensing, and continuing education vary from country to country and between regions/localities within countries. In most countries, pharmacists must obtain a university degree at a pharmacy school or related institution, and/or satisfy other national/local credentialing requirements. In many contexts, students are required to first complete pre-professional (undergraduate) coursework followed by about four years of professional academic studies in order to obtain a degree in pharmacy (e.g. PharmD - Doctorate of Pharmacy). Pharmacists are educated in pharmacology, pharmacognosy, chemistry, organic chemistry, biochemistry, pharmaceutical chemistry, microbiology, pharmacy practice (including drug interactions, medicine monitoring, medication management), pharmaceutics, pharmacy law, physiology, anatomy, pharmacokinetics, pharmacodynamics, drug delivery, pharmaceutical care, nephrology, hepatology, and compounding of medications. Additional curriculum may

cover diagnosis with emphasis on laboratory tests, disease state management, therapeutics and prescribing (selecting the most appropriate medication for a given patient).

Upon graduation, pharmacists are licensed either nationally or by region to dispense medication of various types in the settings for which they have been trained. Some may undergo further specialized training, such as in cardiology or oncology.

I. Answer the following questions:

1. What kind of degree do individuals who want to become pharmacists need? 2. What is a Doctor of Pharmacy program? 3. What does a pre-professional track include? 4. What is the duration of Doctor of Pharmacy programs? 5. What do the curricula include? 6. What is the role of clinical experience? 7. What do four-year professional academic studies include? 8. What do pharmacists need upon graduation?

II. The expressions to be translated and memorized: a key player, a doctor of pharmacy, pharmacy education, pharmacy practice, pharmacist licensing, pharmaceutical care, specialized training, a pre-professional track

III. Translate into English the following word combinations: лекарственная терапия, курс биологии, лицензионная комиссия, клинический опыт, форма дозировки, органическая химия, программа бакалавриата, отвечать профессиональным требованиям.

IV. Render the main idea of the following text in Russia:

The basic requirement for pharmacists to be considered for registration is an undergraduate or postgraduate pharmacy degree from a recognized university. In many countries this involves a four- or five-year course to attain a master of pharmacy degree (MPharm). In the United States of America, students graduating after Jan 1, 2003, must complete a doctor of pharmacy

degree to become a licensed pharmacist. This same requirement has been coming into place in other countries such as Canada and France.

The doctor of pharmacy degree requires completion of five years at an accredited college of pharmacy (most students applying for admission into a college of pharmacy already have an undergraduate degree. However, many schools admit students after completion of two or three years of undergraduate pharmacy prerequisites or directly from high school into a six-year accelerated program). Any person holding a bachelor's degree in pharmacy who graduated before this date is grandfathered in and can register for a license.

To practice as a pharmacist, registration with the country, state or province's regulatory agency is required. There is often a requirement for the pharmacy graduate to have completed a certain number of hours of experience in a pharmacy under the supervision of a registered pharmacist. If the regulatory body governs an entire country, they will usually administer a written and oral examination to the prospective pharmacist prior to registration. If its jurisdiction is limited to a specific area (e.g., a state or province), the required examination is administered by a national examining board.

V. Translate the following sentences:

1. Pharmaceutical educational grants are awarded to promising students to further research and innovation in pharmacology. 2. Pharmaceutical education began in the United States with the founding of the Philadelphia College of Pharmacy (now the University of the Sciences in Philadelphia) in 1821. 3.Today, individuals seeking to become pharmacists must first complete a pre-pharmacy undergraduate program. This program consists of a minimum of 60-90 semester credit hours (90-100 quarter credit hours) of undergraduate coursework in basic and advanced sciences. 4. Many students find completion of a four-year program (between 120-130 semester credit

hours) leading to a Bachelor of Science degree in biology, chemistry, or a similar field enhances their chances of admission. 5. Pre-requisite and application requirements vary by individual schools/colleges of pharmacy. 6. Aside from the Pharm.D. program, many schools and colleges of pharmacy offer graduate degree programs (i.e., Master of Science [M.S.], Doctor of Philosophy [Ph.D.]). 7. Upon completion of all professional curriculum and practice experiences, the student will graduate and be awarded the Doctor of Pharmacy degree and typically seek licensure by examination. 8. The doctor of pharmacy degree is designed to produce graduates who are "educationally prepared for practice and should satisfy educational requirements for licensure." 9. A new pharmacy graduate may choose to complete an optional post-graduate residency (one to three years) rather than entering directly into pharmacy practice. 10. A pharmacy residency consists of one to two years of general residency and one to two years of specialized residency.

TEXT 3. PROFESSIONAL PHARMACY EDUCATION.

Professional Pharmacy Education in Russia encompasses all fields within pharmacy, with the common purpose of education and training. Students are accepted into the five-year professional curriculum. The innovative undergraduate pharmacy curriculum integrates foundational knowledge in the biomedical and pharmaceutical sciences with applied skills in the clinical, behavioural and social sciences to prepare our graduates to serve as medication therapy experts. The professional pharmacy curriculum is designed to produce pharmacists who have the abilities and skills which are necessary to achieve outcomes related to: providing pharmaceutical care to patients; developing and managing medication distribution and control systems; managing the pharmacy; promoting public health; providing drug information and education.

In order to provide students with the opportunity to develop a strong foundation on which to build these skills, the curriculum emphasizes some major areas of instruction.

Pharmaceutical chemistry emphasizes the application of chemical sciences to pharmacy. Some of the courses deal with chemicals used as medicines - their use, nature, preparation and preservation. In other courses, attention is given to the processes and tests used to determine the purity and strength of a chemical or its pharmaceutical form. The pharmacy student learns, for example, how to find out if aspirin is pure, or how to determine how much vitamin C is contained in a particular solution or tablet.

Pharmacognosy deals with the nature and sources of "natural drugs" - those obtained from plants or animals, either directly or indirectly. For example, with a drug such as quinine, this study involves the source, the commercial production, the marketing, the chief pure chemicals contained in the drug, and the uses made of the drug and its derivatives.

Pharmacology is concerned with understanding the action of drugs in the body. Attention is given to the effects of various doses of each medicinal substance and to the different ways in which medicine can be introduced into the body. The effects of poisons and the means to overcome them are studied in toxicology. Generally, animal tests are required to learn the strength of drugs. Physicians know a great deal about pharmacology and toxicology; yet, as the expert about drugs, the pharmacist must maintain this knowledge to an even greater extent.

Education in modern business management is important for graduates who plan to enter community pharmacy and some institution practices. This area is commonly designated pharmacy administration. Instruction frequently includes principles of basic economics, accounting, management, computer applications, marketing, merchandising, and legal phases of the profession of pharmacy. Courses in pharmacy administration are especially helpful to

pharmacists who become executives in pharmacies, hospitals, service wholesale houses, or manufacturing.

I. Answer the following questions:

1. What is the common purpose of professional pharmacy education? 2. How long does the professional curriculum last? 3. What are major areas of pharmacy instruction? 4. What is pharmaceutical chemistry? 5. What does pharmacognosy deal with? 6. What is the role of pharmacology? 7. What is necessary for graduates who plan to enter community pharmacy?

II. Render the main idea of the text below in Russian:

All colleges of pharmacy offer a variety of courses in pharmacy practice. These courses are designed to give an appreciation of the background and nature of the profession, to familiarize students with the many skilled processes used in pharmacy, to introduce the various forms of medicines, and to teach them how to dispense medication accurately and skillfully. Instruction in pharmacy practice again emphasizes the fact that pharmacy blends science and technology, and that throughout the professional services of the pharmacist there is a continuous responsibility both to the patient and the physician. Instruction in the pharmaceutical sciences and in the professional areas (except for most of the administration courses) includes some laboratory work. This laboratory work is both traditional and clinical. Laboratory instruction explores various scientific phenomena, as well as studies the clinical application of the principles of pharmaceutical sciences. Pharmacy practice is that area within the pharmacy curriculum which deals with patient care, placing an emphasis on drug therapy. Pharmacy practice seeks to develop a patient-oriented attitude in the student. The education of pharmacists who are able to meet the needs of society can be attained only through a careful blending of theoretical course work and clinical experiences.

III. Discuss the following:

The clinical component of the pharmacy curriculum varies from school to school, however, the basic objectives are the same. Some of these objectives are

to develop students' communication skills for effective interaction with patients and with practitioners of other health professions,

to help students develop a patient awareness in the practice of pharmacy,

to enable students to integrate the knowledge acquired in course work prior to clinical exposure, and to apply it to the solution of real problems, and

to develop students' awareness of their responsibility for monitoring the drugs taken by patients,

to help students become more aware of the general methods of diagnosis and patient care specifically related to drug therapy.

UNIT II

PHARMACEUTICAL TRAINING CURRICULUM

Students working toward a five-year pharmacy degree learn human biology and ways the body's chemicals interact with the medication. Pharmacists must be well versed in physiology, pathophysiology and biochemistry and have a solid background in mathematics and physics. A major part of pharmacy education is learning about drugs created from plants and animals and determining how medications interact with different people. A pharmacist must know how chemicals can be used as life-saving medication and the hazards they pose when misused. Pharmacy students may have the opportunity to work with doctors and researchers on studies of a new medication. Beyond pharmaceutical education, students are usually prepared with fundamental business practices in order to successfully operate a pharmacy.

TEXT 1. CHEMISTRY

Pharmacy is the health profession that links the health sciences with the chemical sciences. So, chemistry is of the basic subjects for pharmacy students. It studies the composition, properties and behavior of matter. Chemistry is concerned with atoms and their interactions with other atoms, and particularly with the properties of chemical bonds. Chemistry is also concerned with the interactions between atoms (or groups of atoms) and various forms of energy (e.g. photochemical reactions, changes in phases of matter, separation of mixtures, properties of polymers, etc.).

Chemistry is sometimes called "the central science" because it bridges other natural sciences like physics, geology and biology with each other. Chemistry is a branch of physical science but distinct from physics**.** It is not easy to precisely define the boundary of chemical sciences (or simply chemistry), because the discipline lies along the spectrum between physics on

the one hand and biology on the other. It overlaps and permeates both of these sciences

The word chemistry comes from the word alchemy, an earlier set of practices that encompassed elements of chemistry, metallurgy, philosophy, astrology, astronomy, mysticism and medicine. The word alchemy in turn is derived from the Arabic word al-kīmīā. The Arabic term is borrowed from the Greek χημία or χημεία. This may have Egyptian origins.

In retrospect, the definition of chemistry has changed over time, as new discoveries and theories add to the functionality of the science. The term "chymistry" meant the subject of the material principles of mixed bodies.

Chemistry is typically divided into several major sub-disciplines. There are also several main cross-disciplinary and more specialized fields of chemistry.

Analytical chemistry is the analysis of material samples to gain an understanding of their chemical composition and structure. Analytical chemistry incorporates standardized experimental methods in chemistry. These methods may be used in all subdisciplines of chemistry, excluding purely theoretical chemistry.

Biochemistry is the study of the chemicals, chemical reactions and chemical interactions that take place in living organisms. Biochemistry and organic chemistry are closely related, as in medicinal chemistry or neurochemistry. Biochemistry is also associated with molecular biology and genetics.

Inorganic chemistry is the study of the properties and reactions of inorganic compounds. The distinction between organic and inorganic disciplines is not absolute and there is much overlap, most importantly in the sub-discipline of organometallic chemistry.

Materials chemistry is the preparation, characterization, and understanding of substances with a useful function. The field is a new breadth of study in graduate programs, and it integrates elements from all classical

areas of chemistry with a focus on fundamental issues that are unique to materials. Primary systems of study include the chemistry of condensed phases (solids, liquids, polymers) and interfaces between different phases.

Neurochemistry is the study of neurochemicals; including transmitters, peptides, proteins, lipids, sugars, and nucleic acids; their interactions, and the roles they play in forming, maintaining, and modifying the nervous system.

Nuclear chemistry is the study of how subatomic particles come together and make nuclei. Modern Transmutation is a large component of nuclear chemistry, and the table of nuclides is an important result and tool for this field.

Organic chemistry is the study of the structure, properties, composition, mechanisms, and reactions of organic compounds. An organic compound is defined as any compound based on a carbon skeleton.

Physical chemistry is the study of the physical and fundamental basis of chemical systems and processes. In particular, the energetics and dynamics of such systems and processes are of interest to physical chemists. Important areas of study include chemical thermodynamics, chemical kinetics, electrochemistry, statistical mechanics, spectroscopy, and more recently, astrochemistry. Physical chemistry is a distinct discipline from chemical physics, but again, there is very strong overlap.

Theoretical chemistry is the study of chemistry via fundamental theoretical reasoning (usually within mathematics or physics). In particular the application of quantum mechanics to chemistry is called quantum chemistry. Since the end of the Second World War, the development of computers has allowed a systematic development of computational chemistry, which is the art of developing and applying computer programs for solving chemical problems. Theoretical chemistry has large overlap with (theoretical and experimental) condensed matter physics and molecular physics.

I. Give a brief summary of the text in Russian.

II. Write a translation of the following paragraph:

Chemistry is sometimes called "the central science" because it bridges other natural sciences like physics, geology and biology with each other. Chemistry is a branch of physical science but distinct from physics**.** It is not easy to precisely define the boundary of chemical sciences (or simply chemistry), because the discipline lies along the spectrum between physics on the one hand and biology on the other. It overlaps and permeates both of these sciences.

III. Complete the sentences:

1. Chemistry is concerned with ….. 2. The word chemistry comes from…. 3. The word alchemy in turn is derived from….. 4. Chemistry is typically divided into…. 5. Analytical chemistry is…. 6. Organic chemistry is….. 7. Other disciplines within chemistry are…..

IV. Read the following, put a question to the word in bold type and answer it:

Chemistry is a branch of science that deals with how **substances** are made up, how they (their elements) combine, how they act under different conditions. The chemistry laboratory stereotypically uses various forms of laboratory **glassware**, but glassware is not central to chemistry, and a great deal of experimental (as well as applied/industrial chemistry) is done without it. **Chemical engineering** is a branch of chemistry and engineering that applies the physical sciences (e.g., chemistry and physics) and/or life sciences (e.g. biology, microbiology and biochemistry) together with mathematics and economics to production, transformation, transportation and proper usage of molecules, chemicals, materials and energy.

TEXT 2. BIOCHEMISTRY

Biochemistry is a chemistry based discipline, also involving aspects of biological, medical and pharmaceutical sciences.

Biochemistry, sometimes called biological chemistry, is a multi-disciplinary area with strong links to fundamental molecular and mechanistic topics. It is the study of chemical processes in living organisms, including, but not limited to, living matter. The laws of biochemistry govern all living organisms and living processes. By controlling information flow through biochemical signaling and the flow of chemical energy through metabolism, biochemical processes give rise to the complexity of life.

Much of biochemistry deals with the structures, functions and interactions of cellular components such as proteins, carbohydrates, lipids, nucleic acids and other biomolecules —although increasingly processes rather than individual molecules are the main focus. Among the vast number of different biomolecules, many are complex and large molecules (called biopolymers), which are composed of similar repeating subunits (called monomers). Each class of polymeric biomolecule has a different set of subunit types. For example, a protein is a polymer whose subunits are selected from a set of 20 or more amino acids. Biochemistry studies the chemical properties of important biological molecules, like proteins, and in particular the chemistry of enzyme-catalyzed reactions.

The biochemistry of cell metabolism and the endocrine system has been extensively described. Other areas of biochemistry include the genetic code (DNA, RNA), protein synthesis, cell membrane transport and signal transduction.

Over the last 40 years biochemistry has become so successful at explaining living processes that now almost all areas of the life sciences from botany to medicine are engaged in biochemical research. Today the main focus of pure biochemistry is in understanding how biological molecules give

rise to the processes that occur within living cells, which in turn relates greatly to the study and understanding of whole organisms.

I. Retell the text in your own words

II. Find sentences in which the following word combinations are used:

1. a multi-disciplinary area; 2. the structures, functions and interactions of cellular components; 3. a protein is a polymer; 4. areas of biochemistry include; 5. the main focus of pure biochemistry.

III. Translate the following words and word combinations without a dictionary:

chemical processes, living organisms, biomolecules, monomers, enzyme-catalyzed reactions, cell membrane transport.

TEXT 3. PHYSICS

Physics (from Greek φυσική "knowledge of nature") is the natural science that involves the study of matter and its motion through space and time, along with related concepts such as energy and force. More broadly, it is the general analysis of nature, conducted in order to understand how the universe behaves.

Physics is one of the oldest academic disciplines, perhaps the oldest through its inclusion of astronomy. Over the last two millennia, physics was a part of natural philosophy along with chemistry, certain branches of mathematics, and biology, but during the Scientific Revolution in the 17th century, the natural sciences emerged as unique research programs in their own right. Physics intersects with many interdisciplinary areas of research, such as biophysics and quantum chemistry, and the boundaries of physics are not rigidly defined. New ideas in physics often explain the fundamental

mechanisms of other sciences, while opening new avenues of research in areas such as mathematics and philosophy.

Physics also makes significant contributions through advances in new technologies that arise from theoretical breakthroughs. For example, advances in the understanding of electromagnetism or nuclear physics led directly to the development of new products which have dramatically transformed modern-day society, such as television, computers, domestic appliances, and nuclear weapons; advances in thermodynamics led to the development of industrialization; and advances in mechanics inspired the development of calculus.

I. Give a brief summary of the text.

II. Write a translation of the following paragraph:

Classical physics is generally concerned with matter and energy on the normal scale of observation, while much of modern physics is concerned with the behavior of matter and energy under extreme conditions or on the very large or very small scale. For example, atomic and nuclear physics studies matter on the smallest scale at which chemical elements can be identified. The physics of elementary particles is on an even smaller scale, as it is concerned with the most basic units of matter; this branch of physics is also known as high-energy physics because of the extremely high energies necessary to produce many types of particles in large particle accelerators.

III. Read the following, put a question to the word in bold type and answer it:

Mathematics is the abstract study of topics such as quantity (numbers), structure, space, and change. Mathematics is used throughout the world as an essential tool in many fields, including natural science, engineering, medicine, finance and the social sciences. Applied mathematics, the branch of mathematics concerned with application of mathematical **knowledge** to other

fields, inspires and makes use of new mathematical discoveries, which has led to the development of entirely new mathematical disciplines, such as statistics and game theory. Mathematics is the **language** used for compact description of the order in nature, especially the laws of physics. Physics theories use mathematics to obtain order and provide **precise formulas**, precise or estimated solutions, quantitative results and predictions. **Experiment results** in physics are numerical measurements. Technologies based on mathematics, like computation have made computational physics an active area of research.

TEXT 4. BIOLOGY

Pharmacy is highly interdisciplinary. It is interrelated with many sciences including biology. Biology is a natural science concerned with the study of life and living organisms, including their structure, function, growth, evolution, distribution, and taxonomy. Modern biology is composed of many subdisciplines unified by five so-called axioms:

Cells are the basic unit of life

Genes are the basic unit of heredity

New species and inherited traits are the product of evolution

An organism regulates its internal environment to maintain a stable and constant condition

Living organisms consume and transform energy.

Subdisciplines of biology are defined by the scale at which organisms are studied and the methods used to study them: biochemistry examines the rudimentary chemistry of life; molecular biology studies the complex interactions among biological molecules; cellular biology examines the basic building block of all life, the cell; physiology examines the physical and chemical functions of tissues, organs, and organ systems of an organism; evolutionary biology examines the processes that produced the diversity of life; and ecology examines how organisms interact in their environment.

The term biology is derived from the Greek word βίος, bios, "life" and the suffix -λογία, -logia, "study of." The Latin form of the term first appeared in 1736 when Linnaeus (Carl von Linné) used biologi in his Bibliotheca botanica.

Although modern biology is a relatively recent development, sciences related to and included within it have been studied since ancient times. Natural philosophy was studied as early as the ancient civilizations of Mesopotamia, Egypt, the Indian subcontinent, and China. However, the origins of modern biology and its approach to the study of nature are most often traced back to ancient Greece. While the formal study of medicine dates back to Hippocrates (ca. 460 BC – ca. 370 BC), it was Aristotle (384 BC – 322 BC) who contributed most extensively to the development of biology.

Biology began to quickly develop and grow with Antony van Leeuwenhoek's dramatic improvement of the microscope. It was then that scholars discovered spermatozoa, bacteria, infusoria and the diversity of microscopic life.

Advances in microscopy also had a profound impact on biological thinking. In the early 19th century, a number of biologists pointed to the central importance of the cell.

Meanwhile, taxonomy and classification became the focus of natural historians. Carl Linnaeus published a basic taxonomy for the natural world in 1735 (variations of which have been in use ever since), and in the 1750s introduced scientific names for all his species. Georges-Louis Leclerc, Comte de Buffon, treated species as artificial categories and living forms as malleable—even suggesting the possibility of common descent. Though he was opposed to evolution, Buffon is a key figure in the history of evolutionary thought; his work influenced the evolutionary theories of both Lamarck and Darwin.

Serious evolutionary thinking originated with the works of Jean-Baptiste Lamarck, who was the first to present a coherent theory of evolution.

He posited that evolution was the result of environmental stress on properties of animals, meaning that the more frequently and rigorously an organ was used, the more complex and efficient it would become, thus adapting the animal to its environment. Lamarck believed that these acquired traits could then be passed on to the animal's offspring, who would further develop and perfect them. However, it was the British naturalist Charles Darwin, combining the biogeographical approach of Humboldt, the uniformitarian geology of Lyell, Malthus's writings on population growth, and his own morphological expertise and extensive natural observations, who forged a more successful evolutionary theory based on natural selection; similar reasoning and evidence led Alfred Russel Wallace to independently reach the same conclusions. Although it was the subject of controversy (which continues to this day), Darwin's theory quickly spread through the scientific community and soon became a central axiom of the rapidly developing science of biology.

The discovery of the physical representation of heredity came along with evolutionary principles and population genetics. In the 1940s and early 1950s, experiments pointed to DNA as the component of chromosomes that held the trait-carrying units that had become known as genes. A focus on new kinds of model organisms such as viruses and bacteria, along with the discovery of the double helical structure of DNA in 1953, marked the transition to the era of molecular genetics. From the 1950s to present times, biology has been vastly extended in the molecular domain.

I. Answer the following questions:

1. What does biology study? 2. What are subdisciplines of biology? 3. What is the term biology derived from? 4. When did biology begin to develop? 5. Who was the author of a coherent theory of evolution? 6. When was the physical representation of heredity discovered? 7. What is molecular genetics?

II. Complete the sentences:

1. Modern biology is composed of…. 2. The Latin form of the term biology…. 3. Biology began to quickly develop and grow…. 4. Carl Linnaeus published…. 5. The discovery of the physical representation of heredity…. 6. From the 1950s to present times, biology….

III. Translate the following words into English:

структура, функция, эволюция, клетка, ген, среда, бактерии, вид, природа.

IV. Read and translate the following short text:

The cell is the basic structural, functional and biological unit of all known living organisms. Cells are the smallest unit of life that is classified as a living thing, and are often called the "building blocks of life". Cells consist of a protoplasm enclosed within a membrane, which contains many biomolecules such as proteins and nucleic acids. Organisms can be classified as unicellular (consisting of a single cell; including most bacteria) or multicellular (including plants and animals). While the number of cells in plants and animals varies from species to species, humans contain about 100 trillion (1014) cells. Most plant and animal cells are between 1 and 100 micrometres and therefore are visible only under the microscope.

TEXT 5. MICROBIOLOGY

Microbiology (from Greek μῑκρος, mīkros, "small"; βίος, bios, "life"; and -λογία, -logia) is the study of microscopic organisms, either unicellular (single cell), multicellular (cell colony), or acellular (lacking cells). Microbiology includes the disciplines virology, mycology, parasitology, bacteriology, and so on.

Eukaryotic microorganisms exhibit cell organelles and include fungi and protists, whereas prokaryotic organisms—which all are microorganisms—are conventionally classified as lacking organelles and include eubacteria and archaebacteria. Microbiologists traditionally relied on culture, staining, and microscopy. Apparently, however, only some 1% of the microorganisms present in some environments are culturable. Microbiologists often rely on extraction or detection of nucleic acid, either DNA or RNA sequences.

Viruses are not always classified as organisms, as they have been identified either as very simple microorganisms or very complex molecules. Prions, never considered microorganisms, have been investigated by virologists, however, as the clinical effects traced to them were originally presumed due to chronic viral infections, and virologists took search—discovering "infectious proteins".

As an application of microbiology, medical microbiology is often introduced with medical principles of immunology as microbiology and immunology. Otherwise, microbiology, virology, and immunology as basic sciences have greatly exceeded the medical variants, applied sciences.

The branches of microbiology can be classified into pure and applied sciences. Microbiology can be also classified based on taxonomy, in the cases of bacteriology, mycology, protozoology, and phycology. There is considerable overlap between the specific branches of microbiology with each other and with other disciplines.

I. Render the main idea of the text

II. Give synonyms for:

single cell, cell colony, lacking cells, prokaryotic microorganisms.

III. Write a translation of the text below:

Bacteria (singular: bacterium) constitute a large domain of prokaryotic microorganisms. Bacteria were among the first life forms to appear on Earth, and are present in most habitats on the planet. Bacteria inhabit soil, water, acidic hot springs, radioactive waste, and the deep portions of Earth's crust. Bacteria also live in plants, animals (see symbiosis), and have survived in space. There are typically 40 million bacterial cells in a gram of soil and a million bacterial cells in a millilitre of fresh water.

IV. Read and translate the following definition:

Microbiology is the study of organisms beyond the scope of human vision, particularly bacteria, viruses, fungi, and protozoa. Since its founding in the nineteenth century, the science has largely focused on the isolation, identification, and elimination of pathogens from humans, animals, plants, food, and drinking water. Microbiologists have also examined nonpathogenic forms, seeking to understand their structure, function, and classification in order to control or exploit their activities.

V. Translate the following text into English:

Микробиология — наука о живых организмах, невидимых невооруженным глазом (микроорганизмах): бактерии, архебактерии, микроскопические грибы и водоросли, простейшие и вирусы. В область интересов микробиологии входит их систематика, морфология, физиология, биохимия, эволюция, роль в экосистемах, а также возможности практического использования. Разделы микробиологии: бактериология, микология, вирусология и т. д. Наука о микробах в своем развитии дифференцировалась на такие специальные дисциплины как общая микробиология, медицинская, промышленная (или техническая), космическая, геологическая, сельскохозяйственная и ветеринарная микробиология.

TEXT 6. PHYSIOLOGY

Physiology (from Ancient Greek φύσις (physis), meaning "nature, origin", and -λογία (-logia), meaning "study of") is the scientific study of function in living systems. This includes how organisms, organ systems, organs, cells, and bio-molecules carry out the chemical or physical functions that exist in a living system. The highest honor awarded in physiology is the Nobel Prize in Physiology or Medicine, awarded since 1901 by the Royal Swedish Academy of Sciences.

The study of human physiology dates back to at least 420 BC and the time of Hippocrates, also known as the father of medicine. The critical thinking of Aristotle and his emphasis on the relationship between structure and function marked the beginning of physiology in Ancient Greece, while Claudius Galenus (c. 126–199 AD), known as Galen, was the first to use experiments to probe the function of the body. Galen was the founder of experimental physiology.

Jean Fernel, a French physician, introduced the term "physiology" in 1525.

In the 19th century, physiological knowledge began to accumulate at a rapid rate, in particular with the 1838 appearance of the Cell theory of Matthias Schleiden and Theodor Schwann. It radically stated that organisms are made up of units called cells. Claude Bernard's (1813–1878) further discoveries ultimately led to his concept of milieu interieur [mēl′yü in¦tir·ē·ər] (internal environment), which would later be taken up and championed as "homeostasis" by American physiologist Walter Cannon (1871–1945).

In the 20th century, biologists also became interested in how organisms other than human beings function, eventually spawning the fields of comparative physiology and ecophysiology. Major figures in these fields include Knut Schmidt-Nielsen and George Bartholomew. Most recently, evolutionary physiology has become a distinct subdiscipline.

The biological basis of the study of physiology, integration refers to the overlap of many functions of the systems of the human body, as well as its accompanied form. It is achieved through communication that occurs in a variety of ways, both electrical and chemical.

The endocrine and nervous systems play major roles in the reception and transmission of signals that integrate function in animals. Homeostasis is a major aspect with regard to such interactions within plants as well as animals.

I. Render the main idea of the text you've read.

II. Read and translate the following definition:

Physiology is the study of the functioning of living organisms or their constituent tissues or cells. Physiological processes are dynamic; cells change their function in response to changes in the composition of their local environment, and the organism responds to alterations in both its internal and its external environment. Many physiological reactions are aimed at preserving a constant physical and chemical internal environment (homeostasis).

III. Write a translation of the text on "Human physiology"

Human physiology is the science of the mechanical, physical, and biochemical functions of humans, their organs, and the cells of which they are composed. The principal level of focus of physiology is at the level of organs and systems within systems. Much of the foundation of knowledge in human physiology was provided by animal experimentation. Physiology is closely related to anatomy; anatomy is the study of form, and physiology is the study of function. Due to the frequent connection between form and function, physiology and anatomy are intrinsically linked and are studied in tandem as part of a medical curriculum.

IV. Read and translate the following text on “Human anatomy”:

Human anatomy is primarily the scientific study of the morphology of the human body. Anatomy is subdivided into gross anatomy and microscopic anatomy. Gross anatomy (also called topographical anatomy, regional anatomy, or anthropotomy) is the study of anatomical structures that can be seen by the naked eye. Microscopic anatomy is the study of minute anatomical structures assisted with microscopes, which includes histology (the study of the organization of tissues), and cytology (the study of cells). Anatomy, human physiology (the study of function), and biochemistry (the study of the chemistry of living structures) are complementary basic medical sciences that are generally together (or in tandem) to students studying medical sciences. The human body consists of biological systems, that consist of organs, that consist of tissues, that consist of cells and connective tissue.

V. Translate the following sentences into Russian:

1. Anatomy is the primary discipline of scientific medicine. It is the scientific study of the structure of living things including their systems, organs, and tissues. 2. Anatomy is essentially a descriptive science, dealing with the form and arrangement of the parts of the body. 3. Human anatomy, including gross human anatomy and histology, is primarily the scientific study of the morphology of the adult human body. It differs from physiology in that anatomy is only the structures involved, and Physiology is the way those structures actually work. 4. Microscopic anatomy, physiology, pathology, and pharmacy were the basic sciences in the nineteenth century. 5. Progress in histology was to a large extent dependent on the construction of better microscopes and the introduction of staining methods.

TEXT 7. PATHOPHYSIOLOGY

Pathophysiology is a convergence of pathology with physiology. Pathology is the medical discipline that describes conditions typically observed during a disease state, whereas physiology is the biological discipline that describes processes or mechanisms operating within an organism. Pathology describes the abnormal or undesired condition, whereupon pathophysiology seeks to explain the physiological processes or mechanisms whereby such condition develops and progresses.

Pathophysiology can also mean the functional changes associated with or resulting from disease or injury.

Pathophysiology is the study of the disturbance of normal mechanical, physical, and biochemical functions, either caused by a disease, or resulting from a disease or abnormal syndrome, or condition that may not qualify to be called a disease.

Pathophysiology can be looked at as the intersection of two older, related disciplines: (normal) physiology and pathology.

Examples

An example from the field of infectious disease would be the study of a toxin released by a bacterium, and what that toxin does to the body to cause harm, one possible result being sepsis.

Another example is the study of the chemical changes that take place in body tissue due to inflammation.

I. Retell the text in your own words.

II. Find English equivalents for the following word combinations:
состояние болезни, патологическое состояние, физиологический процесс, биохимическая функция, нарушение функции, причинить вред, химические изменения.

III. Read the text and try to understand its content

Pathology is the precise study and diagnosis of disease. The word pathology is from Ancient Greek πάθος, pathos which may be translated into English as either "experience" or "suffering". and -λογία, -logia, "An account of" or "the study of". Pathologization, to pathologize, refers to the process of defining a condition or behavior as pathological, e.g. pathological gambling. Pathologies is synonymous with diseases. The suffix "path" is used to indicate a disease, e.g. psychopath.

Pathology addresses four components of disease: cause/etiology, mechanisms of development (pathogenesis), structural alterations of cells (morphologic changes), and the consequences of changes (clinical manifestations).

IV. Write a translation of the following definitions:

1. Physiology is the study of normal, healthy bodily function (as opposed to anatomy, which is the study of normal structure). When something disrupts normal physiological processes, it enters the realm of pathophysiology.

2. Pathology, broadly speaking, is the "study of the nature and cause of disease." or the results of disease in the body.

3. Pathophysiology looks at the detailed malfunctioning that comes from or - alternately - causes disease.

4. A pathophysiology definition states that it is a hybrid family of pathology and physiology. The first refers to conditions that usually appear when there is disease, while the second refers to the biological discipline that studies operation inside an organism.

TEXT 8. SOCIAL SCIENCES

Social science refers to the academic disciplines concerned with the society and the relationships of individuals within a society, which primarily rely on empirical approaches. It is commonly used as an umbrella term to refer to anthropology, economics, political science, psychology and sociology. In a wider sense, it may often include humanities such as archaeology, area studies, communication studies, cultural studies, folkloristics, history, law, linguistics, and rhetoric.

Positivist social scientists use methods resembling those of the natural sciences as tools for understanding society, and so define science in its stricter modern sense. Interpretivist social scientists, by contrast, may use social critique or symbolic interpretation rather than constructing empirically falsifiable theories, and thus treat science in its broader sense. In modern academic practice, researchers are often eclectic, using multiple methodologies (for instance, by combining the quantitative and qualitative techniques).

The Social Science disciplines are branches of knowledge which are taught and researched at the college or university level. Social Science disciplines are defined and recognized by the academic journals in which research is published, and the learned Social Science societies and academic departments or faculties to which their practitioners belong. Social Science fields of study usually have several sub-disciplines or branches, and the distinguishing lines between these are often both arbitrary and ambiguous.

Anthropology is the holistic "science of man," — a science of the totality of human existence. The discipline deals with the integration of different aspects of the Social Sciences, Humanities, and Human Biology.

Communication studies deals with processes of human communication, commonly defined as the sharing of symbols to create meaning. The discipline encompasses a range of topics, from face-to-face conversation to mass media outlets such as television broadcasting.

Economics is a social science that seeks to analyze and describe the production, distribution, and consumption of wealth.

Education encompasses teaching and learning specific skills, and also something less tangible but more profound: the imparting of knowledge, positive judgment and well-developed wisdom. Education has as one of its fundamental aspects the imparting of culture from generation to generation.

History is the continuous, systematic narrative and research into past human events as interpreted through historiographical paradigms or theories.

Law in common parlance, means a rule which (unlike a rule of ethics) is capable of enforcement through institutions. However, many laws are based on norms accepted by a community and thus have an ethical foundation.

Linguistics investigates the cognitive and social aspects of human language. The field is divided into areas that focus on aspects of the linguistic signal, such as syntax (the study of the rules that govern the structure of sentences), semantics (the study of meaning), morphology (the study of the structure of words), phonetics (the study of speech sounds) and phonology (the study of the abstract sound system of a particular language); however, work in areas like evolutionary linguistics (the study of the origins and evolution of language) and psycholinguistics (the study of psychological factors in human language) cut across these divisions.

Psychology is an academic and applied field involving the study of behavior and mental processes. Psychology also refers to the application of such knowledge to various spheres of human activity, including problems of individuals' daily lives and the treatment of mental illness.

I. Give a brief summary of the text.

II. Find the Russian equivalents for the following:

1. social sciences; 2. empirical approaches; 3. humanities; 4. natural sciences; 5. in a broader sense; 6. academic journals; 7. distinguishing lines;

8. human language; 9. academic and applied field; 10. from generation to generation.

III. Are these sentences true or false?

1 Social sciences are academic disciplines.

2 The Social Science disciplines are branches of knowledge which are taught and researched at school.

3 Anthropology is the holistic science of animal.

4 Economics is a social science that seeks to analyze and describe the production, distribution, and consumption of wealth.

IV. Write a translation of the following definitions:

1. The social sciences comprise academic disciplines concerned with the study of the social life of human groups and individuals. 2. The word "science" is older than its modern use. 3. Universities throughout the world consider the study of the social sciences as vital for the future of society, and most cater for many degrees in the multiplicity of social science fields. 4. Economics has two broad branches: microeconomics, where the unit of analysis is the individual agent, such as a household, firm and macroeconomics, where the unit of analysis is an economy as a whole. 5. Modern geography is an all-encompassing discipline that seeks to understand how the world has changed in terms of human settlement and natural patterns. 6. Political science is an academic and research discipline that deals with the theory and practice of politics and the description and analysis of political systems and political behavior.

APPENDIX

GRAMMAR REFERENCE

NOUNS: Countable and uncountable - исчисляемые и неисчисляемые существительные

Countables / Исчисляемые существительные употребляются как в единственном, так и во множественном числе и согласуются с соответствующей формой глагола.

bed/bed**s** [z] There are four beds in the ward. **Но**: It's a four bed ward.

book/book**s** [s] I have a lot of different books.

day/days [z] There are seven days in a week

pen/pens [z] He has many pens.

dish/dishes [iz] We need to get some new dishes for the evening.

baby/babies [iz] They have new toys for babies in there.

box/boxes [iz] These boxes are empty.

leaf/leaves [z] There are so many colourful leaves everywhere!

Они могут употребляться с ◦ a, an ◦ many ◦ a few: a pen, many pens, a few pens.

Ряд существительных образуют форму множественного числа не по правилам:

one child, two children	one person, two people
one foot, two feet	one tooth, two teeth
one man, two men	one woman, two women

Uncountables / Неисчисляемые существительные обозначают вещества и отвлеченные понятия. Они употребляются только в единственном числе и, даже если оканчиваются на –s, согласуются с глаголом в единственном числе: advice, bread, fruit, furniture, hair, information, money, news, paper, rice, work, etc.

Where **is** my **money**? The **news was** a complete shock. Your **hair is** really long.

A little, much, a bit of, a piece of используются с неисчисляемыми существительными.

A lot of, some, lots of используются как с исчисляемыми, так и неисчисляемыми существительными.

Any используется в вопросительных и отрицательных предложениях как с исчисляемыми, так и неисчисляемыми существительными:

Do you have **any** work to do? There aren't **any** eggs left.

Некоторые неисчисляемые существительные имеют форму только множественного числа и согласуются с глаголом во множественном числе: Your clean **clothes are** on the bed. Her new **jeans look** great!

ARTICLES / Артикли

A, an (indefinite article) неопределенный артикль употребляется:

С исчисляемыми существительными в единственном числе в значении «один», «любой» I need **a** new coat. I don't have enough money for **an** expensive dress.

Использование **a** или **an** зависит не от буквы, с которой начинается слово, а от звука, который она дает: **an** honest man, **an** hour, **a** euro, **a** uniform.

Неопределенный артикль употребляется в восклицательных предложениях: **What a** nice man! She is **such a** clever woman!

the (definite article) определенный артикль употребляется:

С исчисляемыми существительными в единственном числе в значении «конкретный»

Let's go to **the** new shopping centre.

С исчисляемыми существительными во множественном числе в значении «конкретные»: Where are **the** books I ordered?

С исчисляемыми существительными в значении «конкретный»

I gave the shop assistant **the** money and then left.

No article (zero article) нулевой артикль употребляется с:

С исчисляемыми существительными во множественном числе Prices have gone up recently.

С неисчисляемыми существительными: Fresh fruit is really good for you.

Special rules / Особые случаи употребления

местонахождение	**the** океаны (the Atlantic) моря (the Black), реки (the Amazon), территории (the Antarctic); некоторые страны (the USA, the UK), общественные места (the theatre), the Earth, the world, the sky, the moon, the sun, the sea, the environment **нулевой артикль**: города (Moscow), страны (France), континенты (Europe), улицы (Baker Street), планеты (Mars)
род деятельности	**a/an**: have a job, work as a pharmacist…. **the**: on the radio, the media, play the piano **нулевой артикль**: go to work, on TV, go shopping, play tennis, listen to music, go to school, be at school, be at university, учебные дисциплины (maths, chemistry)
время	**the**: in the morning/afternoon/evening, on the 20th March, in the 1990s **нулевой артикль**: дни недели (Thursday), месяцы (May) , годы (2011)

люди **the:** the King, the Prime Minister, the army, the navy, the police, the Germans, the English

нулевой артикль: become king, he's English, speak English

ADJECTIVES and ADVERBS / Прилагательные и наречия

Comparatives and superlatives / Степени сравнения прилагательных и наречий

Comparatives - Сравнительная степень употребляется при сравнении двух предметов/ людей/ явлений

My new job is **more enjoyable** than my old one. I'd like to get to the office **earlier** tomorrow.

Прилагательные	**Положительная степень**	**Сравнительная степень**
односложные	**hard + er** **late + r** **big**	**harder** **later** **bigger**
двусложные	**pretty y→ier**	**pritier**
многосложные	**interesting more/less**	**more/less interesting**

исключения: good→better, bad→worse, little→less, far→farther, many/much→more

Наречия carefully more/less more/less carefully

исключения: well→better, badly→worse, near→nearer, fast→faster, early→earlier

Сравнительная степень часто употребляется с союзом than

My working day is longer **than** it used to be.

Superlatives - Превосходная степень употребляется при сравнении трех или более предметов/людей/явлений.

Out of all the jobs, my job is the hardest. The person who does best will get a pay rise.

Прилагательные	**Положительная степень**	**Сравнительная степень**
односложные	**hard + est** **late + st** **big + est**	**hardest** **latest** **biggest**
двусложные	**pretty y→iest**	**pritiest**
многосложные	**interesting most/least**	**more/least interesting**

исключения: good→best, bad→worst, little→least, far→farthest/furthest, many/much→ most

Наречия carefully most/least most/least carefully

Исключения: well→best, badly→worst, early→earliest, fast→fastest

a) Наречия частотности: always, sometimes, often, never, usually, again, seldom, once, twice, frequently.

b) Наречия времени: now, today, yesterday, ago, since.

c) Наречия места: near, everywhere, far, there, here, inside, outside, upstairs, downstairs.

d) Наречия образа действия: quietly, carefully, bravely, slowly, badly, clearly, sweetly. **Exceptions**: well, fast, hard.

e) Наречия степени: very, rather, quite, enough, fully, too, partly, almost, hardly, much, little.

f) Наречия причины: therefore, consequently, so, moreover.

PRONOUNS and POSSESSIVE DETERMINERS

Личные, притяжательные и возвратные местоимения

Subject pronouns I/you/he/she/it/we/they

Личные местоимения употребляются в качестве подлежащего. **They** are students.

Objective pronouns me/you/him/her/it/us/them

Личные местоимения в объектном падеже употребляются в качестве дополнения:

Could you give **me** your book? Could you give your book to **me**?

Possessive determiners my/your/his/her/its/our/their

Притяжательные местоимения употребляются для обозначения принадлежности предмета/предметов тому или иному лицу That's **their** car.

It's – сокращенная форма **it is**. **Its** – притяжательное местоимение.

Possessive pronouns mine/yours/his/hers/ours/theirs

Абсолютная форма притяжательных местоимений употребляется для обозначения принадлежности предмета/предметов тому или иному лицу. That car is **ours**.

У притяжательного местоимения **it** абсолютной формы нет. This car is **hers**.

Reflexive pronouns

myself/yourself/himself/herself/itself/ourselves/yourselves/themselves

Возвратные местоимения употребляются:

Для описания действия, направленного на его исполнителя:

My computer turns **itself** off after half an hour.

Для указания на то, что подлежащее или дополнение совершает действие без посторонней помощи. Nobody helped me. I did it **myself.**

Relative clauses / Определительные придаточные предложения

Relative pronouns - Относительные местоимения вводят определительные придаточные предложения и относятся к определяемому ими слову.

That man over there is called Bill Gates. He started Microsoft. → That man over there, who's called Bill Gates, started Microsoft.

Относительные местоимения употребляются для обозначения:

who - людей What's the name of that man who created the Internet?

which - неодушевленных предметов и животных The experiment which worked was the last one.

where - места This is the town where his father was born/

whose - принадлежности That's the man whose sister is your doctor.

Who может относиться к животному, если оно наделяется человеческими чертами. Our dog, who's called Benji, is eight years old.

Non-defining relative clauses

Определительное предложение называется неограничительным, если сообщает дополнительные сведения о лице или предмете. Оно может быть опущено без ущерба для смысла главного предложения.

That man over there, **who** is called Bill Gates, started Microsoft.

That man over there started Microsoft.

Неограничительное придаточное предложение употребляется для передачи дополнительной информации.

This programme, **which** is totally free, protects your computer against viruses.

Неограничительное придаточное предложение выделяется запятыми.

Carl, **whose** sister is famous, is a friend of mine

Defining relative clauses

Определительное придаточное предложение называется ограничительным, если сообщает важную информацию о лице или предмете, без которой главное предложение утрачивает смысл.

The person **who** is wearing the blue shirt started Microsoft.

Ограничительное придаточное предложение употребляется для передачи существенной, уточняющей информации.

This is the TV **which** works. This is the TV **which** doesn't work.

Ограничительное придаточное предложение не выделяется запятыми.

В таком предложении можно использовать that вместо who или which. Did you see the programme about the woman **who** invented

Tippex? Did you see the programme about the woman **that** invented

Tippex - a brand of correction fluid and other products?

TENSE REVIEW

Tenses	**Aspect**			
	simple	**continuous**	**perfect**	**perfect continuous**
Present	He **works** He **doesn't work** **Does** he **work**?	He **is working** He **isn't working** **Is** he **working**?	He **has worked** He **hasn't worked** **Has** he **worked**?	He **has been working** He **hasn't been working** **Has** he **been working**?
Past	She **worked** She **didn't work** **Did** she **work**? He **will work**	She **was working** She **wasn't working** **Was** she **working**? He**'ll be working**	She **had worked** She **hadn't worked** **Had** she **worked**? He **will have worked**	She **had been working** She **hadn't been working** **Had** she **been working**? He **will have been working**
Future	He **is going to work** He **won't work** **Wil**l he **work**?	He **won't be working** **Will** he **be working**?	He **won't have worked** **Will** he **have worked**?	He **won't have been working** **Will** he **have been working?**

Present Simple and Present Continuous – Настоящее простое и настоящее длительное

Present simple употребляется для описания:

▪ констатации факта**:** He **works** for a medical company.

▪ общеизвестных фактов: The sun **rises** in the east.

▪ повторяющихся действий в настоящем (с **always, usually**, etc). He usually **starts** work at 8 o'clock

▪ расписаний и программ (в будущем): My train **departs** at 5.32 exactly.

▪ повествования: The lights **go** out and a figure **tears** out of the villa.

Present simple обычно употребляется с наречиями и выражениями: *usually, often, always, every day/week/month/year, in the morning/ afternoon/ evening, at night/the weekend, on Fridays ,etc.*

Present continuous (to be + verb –ing) употребляется для описания

▪ действий, происходящих в момент речи: They **are examining** the patient now.

▪ действий, происходящих в течение ограниченного периода времени:

She **is working** at the hospital until the end of the month.

▪ запланированных действий на ближайшее будущее: **I'll be flying** to Paris this time tomorrow.

▪ меняющихся ситуаций и развивающихся событий: My English **is getting** better.

▪ с наречием **always** для выражения раздражения чьими-либо действиями:

She **is** always **complaining**. She **is** always **using** the hairdryer when I need it.

Present continuous обычно употребляется с наречиями и устойчивыми словосочетаниями, обозначающими время: *now, at the moment, at present, these days, nowadays, still, today, tonight*, etc.

Stative Verbs / Глаголы состояния

Глаголы состояния - это глаголы, которые описывают чувства, мысли, состояния. Как правило, эти глаголы не употребляются во временах группы continuous. Наиболее распространенными являются глаголы, выражающие:

▪ чувства и ощущения (**see, hear, smell, taste, feel, look, sound, seem, appear**, etc). The air **smells** fresh.

▪ восприятие (**know, believe, understand, realize, remember, forget**, etc) I **understand** how she feels.

▪ чувства и эмоции (**like, love, hate, enjoy, prefer, detest, desire, want**, etc.) He **hates** going shopping.

▪ и некоторые другие глаголы **(be, contain, include, belong, fit, need, matter, cost, own, weigh, wish, have, keep**, etc) I **wish** I hadn't said that.

Некоторые из этих глаголов могут использоваться и в группе continuous, но с другим значением.

I **think** he's a very good doctor (=believe) We **are thinking** about our future (=considering)

She **has** many interesting books (=own, possess) She **is having** a bath (=is taking).

I **see** what you mean (=understand) **I'm seeing** the doctor next week (=am meeting).

Present Perfect – настоящее совершенное простое

Present perfect (have + past participle) употребляется для описания:

▪ действия, происходящего в неуказанное время в прошлом. Внимание акцентируется на самом действии. Время совершения действия неизвестно или неважно. I **have cleaned** the car. Wendy **has been** to Spain twice.

▪ действия, которое началось в прошлом и продолжается в настоящий момент, особенно при наличии глаголов состояния. **I have known** Jack for twenty years.

▪ действие, которое в момент речи воспринимается как совершившееся**.** I **have completed** my research project.

С present perfect используются: for, *since, already, always, just, ever, never, so far, today, this week/month etc., how long, lately, recently, still.*

Present Perfect Continuous – настоящее совершенное длительное

Present perfect continuous (have been + verb –ing) употребляется для описания:

▪ действия, начавшегося в прошлом и продолжающегося в настоящем времени. Акцентируется продолжительность действия. I **have been working** all afternoon.

▪ действия, начавшегося в прошлом и продолжавшегося какое-то время. Оно может все еще продолжаться или завершилось к моменту речи с явным результатом в настоящем времени. He's bad-tempered because he **has been overdoing** things recently.

▪ гнева, раздражения. He **has been taking** my coffee without asking me.

▪ повторяющихся действий, которые начались в прошлом и продолжаются в настоящем. He **has been going** to the beach every weekend.

The present perfect continuous употребляется со следующими наречиями и словосочетаниями: *for, since, how long…?, all day/morning/month etc., lately, recently.*

Past Simple - прошедшее простое

Past simple употребляется для описания:

▪ законченных действий. I **finished** my work yesterday**.**

▪ повторяющихся действий в прошлом. I **went** to the laboratory four times last month**.**

▪ общеизвестных фактов в прошлом. Fifty years ago, people **didn't spend** as much time on entertainment as they do today.

▪ последовательных действий в прошлом. He **pushed the door open and looked** inside the room.

Past simple употребляется с: *yesterday, last week/summer/year/etc, in January/2010/etc, an hour/a week/a year ago*

Past Continuous - прошедшее длительное

Past Continuous употребляется для описания:

▪ действий, которые происходили в определенный момент или период времени в прошлом. At nine o'clock last night, I **was watching** TV.

▪ одновременно происходящих действий в прошлом. I **was reading** a book while you **were doing** the washing-up.

▪ фона событий в рассказах. It **was raining** so Wendy decided to go to the cinema.

Past continuous обычно употребляется с: *at that moment, at one/two/etc o'clock, while.*

Past Perfect - прошедшее совершенное

Past Perfect употребляется для описания:

▪ действий или состояний, которые закончились до определенного момента или другого действия в прошлом. I **had finished** my work a few minutes before it started to rain. Mr Cross **had been** a doctor for twenty years before he became chief doctor.

▪ действия, которое закончилось к определенному моменту в прошлом, а результат проявился позже. He **had twisted** his knee a few days earlier and he was still limping heavily.

▪ обычной ситуации в прошлом. Everything **had appeared** normal at first.

Past Perfect обычно употребляется с:

by I'd finished my work *by* eight o'clock

***by the** time* *By the time* I got to work it started to snow

before The doctor had examined the patient *before* the briefing

after I left *after* I'd finished the test.

just He had *just* finished his work when the phone rang

when I left *when* I'd finished the test.

Past perfect continuous - прошедшее совершенное длительное

Past perfect continuous употребляется для описания:

▪ действий, которые начались до определенного момента в прошлом и продолжаются в этот момент, либо завершились к этому моменту. We'**d been doing** this boring work for over three hours, so we were really tired. They had a break because they'**d been working** so hard.

Past perfect обычно употребляется с: *for, since, before, all day/night/etc., how long, until* I'd been studying **all day.**

Used to + инфинитив

Оборот used to употребляется для описания регулярно повторяющихся действий в прошлом. When he was younger, **he used to walk** to work.

Future simple - будущее простое

The future simple (will + infinitive) употребляется для выражения:

▪ решений, принятых в момент речи. It's cold in here, **I'll close** the window.

▪ наших предположений о будущем. She **will probably** call him later.

▪ обещаний, просьб, надежд. **Will** you **help** me with my work?

▪ действий, событий, ситуаций, которые произойдут наверняка. Our son **will be** two months old in May.

Be going to

Оборот be going to употребляется для описания:

▪ намерений. **I'm going to** become a doctor.

▪ будущих действий, признаки которых очевидны. It's **going to** rain, so take an umbrella.

▪ действий или событий в будущем. The new airport **is going to** be the biggest in Europe.

Для выражения времени the future simple и с оборотом be going to употребляются следующие наречия и словосочетания: *tomorrow, the day after tomorrow, tonight, soon, next week/month/year/summer/etc, in a week/month*

Future Continuous - будущее длительное

The future continuous (will be + verb –ing) употребляется для описания:

▪ действий, которые будут продолжаться в указанное время в будущем. This time next week I'**ll be lying** in the sun.

▪ запланированных действий, обычно при наличии договоренности. I'**ll be going** up to London at the weekend.

▪ вежливого вопроса о планах на ближайшее будущее. **Will** you **be needing** that needle for much longer?

THE PASSIVE VOICE / Страдательный залог

The passive (1) (present simple, past simple, will) to be в соответствующей форме + III форма смыслового глагола (причастия прошедшего времени)

Everyone **is invited** Some people **are not invited** **Is** everyone **invited?**

	Действительный залог	**Страдательный залог**
Present simple	**They perform operations**	**Operations are performed**
Past simple	**They monitored his heart rate**	**His heart rate was monitored by them**
Future simple	**We will study this phenomenon**	**This phenomenon will be studied**

Страдательный залог употребляется:

◦ когда в центре внимания говорящего находится лицо или предмет, который подвергается действию. **English is spoken here.**

◦ когда лицо, совершающее действие, неизвестно. **The problem was solved**

◦ когда нет необходимости называть лицо, совершающее действие. **Was Tom invited?**

The passive (2) (present continuous, present perfect simple, past continuous, past perfect simple, be going to, modals

be в соответствующей форме + III форма смыслового глагола

The drug **is being prepared**	The drug **isn't being prepare**	**Is** the drug **being prepared?**	
Present continuous	I'm studying the problem.	The problem **is being studied** by me.	
Present perfect	The doctor has examined the patient	The patient **has been examined** by the doctor	
Past continuous	He was taking a history	The history **was being taken** by him.	
Past perfect	She had finished the work.	The work **had been finished** by her.	
Be going to	They are going to invite Tom to the party	Tom **is going to be invited** to the party.	
Модальные глаголы	They might invite Tom to to the party.	Tom **might be invited** to the party.	
	We should tell Tom about the party	Tom **should be told** about the party.	
	We must tell Tom the truth.	The truth **must be told** to Tom.	
	We can do the work now.	The work **can be done** now.	

Предлог **by** используется для того, чтобы подчеркнуть, кем совершается действие. The work was done **by** us.

Предлог **with** используется для того, чтобы подчеркнуть, при помощи чего совершается действие. Soup is usually eaten **with** a spoon. Если неизвестно, кто совершает действие, предлоги **by** и **with** не используются. Mr Brown was taken to hospital yesterday.

MODAL VERBS / Модальные глаголы

Modals 1: ability, permission, advice Модальные глаголы (1): способность, разрешение, совет.

Модальные глаголы – особая группа глаголов, которые не обозначают действие, а выражают отношение к нему. Они:

◦ не изменяются по лицам и числам I/you/he/she/it/we/they **may** write an e-mail

◦ употребляются в сочетании с инфинитивом без частицы **to**

You **should** call us.

◦ не имеют неопределенной формы

Глаголы с модальным значением: ought to (ought not to), have to (don't have to), need to (don't need to/ needn't)

Ability

Случаи употребления (способность совершать действие)	**Модальные глаголы**	**Примеры**
В настоящем	**can**	**Can** you use this PC?
В прошлом	**could**	He **could** swim when he was 10.

В некоторых временных формах значение способности передается сочетанием **be able to.**

It's useful **to be able to** order things by e-mail. Soon, I'**ll be able to** speak French quite well.

Permission

Случаи употребления	**Модальные глаголы**	**Примеры**
Вопросы с просьбой о разрешении	**can/could/may**	**Can/could/may** I use your pen?
Разрешение	**can/may**	You **can/may** send the fax when you like.

May – более вежливая форма обращения, чем **could, a could –** более вежливая, чем **can**

Advice

Случаи употребления	**Модальные глаголы**	**Примеры**
Выражение слов	**ought to/ should**	You **ought to/ should** watch less TV.

Modals 2: obligation, probability, possibility – долженствование, вероятность, возможность.

Obligation

Случаи употребления	**Модальные глаголы**	**Примеры**
Обязанность/необходимость	**must/mustn't**	All visitors **must** turn off their mobile phones
Совершения действия в настоящем или будущем	**have to** **need to**	You **have to/need to** press "send"
Отсутствие необходимости	**don't have to** **don't need to** **needn't** **needn't**	You **don't have to/don't need to/** pay to send an e-mail.
Обязанность/необходимость совершения действия в прошлом	**had to**	Yesterday, he **had to** go to the shops.
Отсутствие необходимости совершения действия в прошлом	**didn't have to** **didn't need to**	I learnt a little Italian, but spoke English, so I **didn't have to/didn't need to use it.**

Have to чаще используется в устной речи. **Must** - чаще в письменной речи, как правило, в объявлениях и инструкциях.

“We have to pay the phone bill today,” Rita said. Passengers must turn off all mobile phones.

Mustn’t выражает запрет, а **don’t have to** – отсутствие необходимости.

You **mustn’t** do that! Не делай этого!.

You **don’t have to** do that. Ты можешь не делать этого.

Probability and possibility

Случаи употребления	**Модальные глаголы**	**Примеры**
Высокая степень вероятности	**must**	The phone is ringing – it **must** be Ted.
Совершения действия в настоящем	**can’t** **couldn’t**	The letter **can’t /couldn’t** be from Japan because it has a French stamp.
Вероятность совершения действия в настоящем или будущем	**should** **ought to**	We **ought to/should** hear from them this week.
Возможность совершения действия в настоящем или будущем.	**could** **may**	I’m not sure what language it is – it **could/may/might** be Polish.

Must, can’t и couldn’t часто используются для выражения предположения, основанного на уверенности. I just rang my friend, but there’s no answer. He **must** be out.

Modals 3: the modal perfect / Модальные глаголы 3: действия в прошлом

Модальный глагол + have + III форма смыслового глагола

You **should have told** me you were going out. You **shouldn't have told** her what Bill said.

Should I **have invited** Sam to the party?

Ability

Случаи употребления	**Модальные глаголы**	**Примеры**
Неиспользованная возможность совершить действие в прошлом	**could**	We **could have gone** to party, but we decided not to go in the end.

Criticism

Случаи употребления	**Модальные глаголы**	**Примеры**
Упрек, неудовольствие	**ought to/should**	You **should have invited** Tom to the party

Probability and possibility

Случаи употребления	**Модальные глаголы**	**Примеры**
Высокая степень вероятности	**must**	They **must have had** a nice day!
Совершения действия в прошлом	**can't**	They **can't have had** any sleep.

NON-FINITE FORMS OF THE VERB / Неличные формы глагола

The Infinitive / Инфинитив

Инфинитив – неличная форма глагола, которая только называет действие, не указывая ни лица, ни числа. Формальным признаком инфинитива является частица **to.**

Инфинитив может служить в предложении:

1. Подлежащим **To read** is useful.

2. Именной частью сказуемого The purpose of the work is **to study** this pathology.

3. Частью составного глагольного сказуемого He began **to translate** the text.

4. Дополнением I asked him **to help** me.

5. Определением He expressed a desire **to help** me.

6. Обстоятельством. She went to Germany to study medicine.

Оборот for + существительное (или местоимение) + инфинитив

It is easy for you **to say** that. Вам легко это говорить. It's up to you **to decide**. Вам решать.

Оборот «объектный падеж с инфинитивом» (Objective with the infinitive).

I want him to help me. Я хочу, чтобы он помог мне. He wanted me to come on Sunday. He wishes the work to be done at once. I should like to be invited to the meeting. They don't like to be asked about it.

Оборот «объектный падеж с инфинитивом» употребляется после глаголов: 1) to see, to watch, to observe, to hear, to feel, etc. Have you heard him play the piano? I saw her enter the room. Вы слышали, как он играет на пианино?

2) to expect, to think, to believe, to consider, to suppose, to find, to know, to declare

I know them to be right. Я знаю, что они правы. I consider him to be an excellent doctor. I suppose him to be about fifty.

3) to order, to command, to ask, to allow He was allowed to have a walk.

Оборот «именительный падеж с инфинитивом» (Nominative with the infinitive/complex subject)

С этим оборотом употребляются выражения: it is said, it is reported, it seems, it is likely

He is said to live in London. Говорят, что он живет в Лондоне. He is said to have lived in London. He was said to have been traveling a lot. He is known to be studying this phenomenon. He seems to know English well. Кажется, он хорошо знает английский язык.

Употребление инфинитива без частицы «to»

1. После модальных глаголов You must do it at once.

2. После глаголов to make, to let, to help He made me read this book. Он заставил меня

3. В обороте «объектный падеж с инфинитивом» I saw her leave the room.

4. После выражений had better лучше бы, would rather, would sooner предпочел бы. You had better go there at once.

The Gerund and the verbal noun / Герундий и отглагольное существительное.

Герундий – неличная форма глагола, выражающая название действия и обладающая как свойствами существительного, так и свойствами глагола. Герундий может служить в предложении:

1. Подлежащим. Making a correct diagnosis is of great importance/

2. Именной частью составного сказуемого. His greatest pleasure is playing.

3. Частью составного глагольного сказуемого. He finished performing the surgery.

4. Прямым дополнением. I remember reading it.

5. Предложным косвенным дополнением. I'm fond of walking.

6. Определением. I had the pleasure of reading in the newspaper about your success.

7. Обстоятельством. After reading the book I went out.

К числу глаголов, после которых часто употребляется герундий относятся: admit, avoid, consider, delay, deny, discuss, enjoy, finish, imagine, keep, mind, miss, practice, recommend, risk, suggest We are considering going to see that new 3D movie. He keeps telling me how good the film was. Do mind my smoking here? I suggested going home.

Герундий употребляется после следующих выражений: It's (not) worth…, it's no use/good…., there's no point…, …can't help…, ….can't stand….

There's no point trying to get tickets for the match; it's sold out. I can't help thinking that you should have been a comedian.

The verbal noun / отглагольное существительное

Отглагольное существительное обладает только свойствами существительного и, в отличие от герундия, употребляется с артиклем, может иметь форму множественного числа.

He took part in **the sittings of the** committee. I was awaken by their loud talking.

Present and past participle / Причастие настоящего и прошедшего времени

Причастие – это неличная форма глагола, которая наряду со свойствами глагола имеет свойства прилагательного или наречия. Обладая свойствами прилагательного, причастие служит определением к существительному и соответствует русскому причастию. A **broken** cup lay on the table. Разбитая чашка…. Обладая свойствами наречия, причастие служит обстоятельством и соответствует русскому деепричастию. He sat at the table **thinking**. Он сидел у стола, задумавшись.

Present Participle Active выражает действие, одновременное с действием, выраженным глаголом-сказуемым. **Knowing** English well, you can translate articles without a dictionary. Зная английский очень хорошо, можно переводить статьи без словаря.

Perfect Participle Active выражает действие, предшествующее действию, выраженному глаголом-сказуемым. **Having lived** in London for many years, he knew that city very well. Прожив в Лондоне много лет, он знал город очень хорошо.

Present Participle Passive выражает действия, совершающиеся в настоящий момент в страдательном залоге. Yesterday the professor told us about the experiments now **being carried** out in his laboratory. Вчера профессор рассказывал об опытах, проводимых в лаборатории.

Past Participle Passive соответствует русским причастиям настоящего времени. The results **obtained** show the effectiveness of the new method. Полученные результаты показывают эффективность нового метода.

Perfect Participle Passive выражают предшествование действия. **Having been sent** to the wrong address, the letter didn't reach him. Так как письмо было отправлено по неверному адресу, оно не дошло до него.

CONDITIONALS / Условные предложения

Conditionals 1: (zero, first, second) / Типы условных предложений (1): нулевой, первый, второй

Условное предложение обычно вводится союзом if и выполняет функцию придаточного предложения в составе сложноподчиненного предложения.

Если придаточное предложение предшествует главному предложению, оно отделяется запятой. If you join a gym, I'll join too. Если придаточное предложение следует за главным предложением, запятая не ставится. I'll join too if you join a gym.

Zero conditional if + present simple

Условное предложение нулевого типа употребляется для описания: общеизвестных фактов, законов природы If people **eat** too much, they often **get** fat.

First conditional if + present simple, will/can/may + инфинитив без частицы to

Вместо **if** может быть использовано **when, provided (that), as long as**

When she has a problem with her weight, she **tries** to take more exercise.

Provided (that) the referee arrives on time, the game will start at seven.

I will let you borrow my exercise bike **as long as** you promise to be careful with it.

Для объяснения чего-либо иногда используется выражение **in case**

Take your anorak when you go jogging **in case** it starts raining later.

Условное предложение первого типа употребляется для описания: реального или вероятного условия в настоящем или будущем

If you **take** these pills, you'**ll start** to feel better very soon.

You **may hurt** yourself **if** you **try** to lift those weights.

If you get some rest, you **might feel** better tomorrow.

В условном предложении можно использовать повелительное наклонение.

If you don't feel well, **go home.**

В этом типе условных предложений в отрицательном значении вместо if not может использоваться **unless** We'll go swimming **unless it rains.** He'll die **unless** we act quickly.

Second conditional if + past simple, would + инфинитив без частицы to

Условное предложение второго типа употребляется для описания: нереального или маловероятного условия в настоящем или будущем **If** you **ate** less, you **might be** thinner.

Условное предложение второго типа может выражать совет. Такое предложение начинается со слов. **If I were you** и **If I was you.**

If I were you, I **would eat** less chocolate (официальный стиль)

If I was you, I**'d eat** less chocolate (неофициальный стиль).

In case может использоваться и во втором типе условного предложения

She advised her son to wear two pairs of socks **in case** the weather changed.

Third conditional if + past perfect, would/could/might + have + III форма смыслового глагола

Условное предложение третьего типа употребляется для описания: нереального условия в прошлом

If the chemist **had been open,** I **would have bought** some aspirin.

Я бы купил аспирин, если бы аптека была открыта.

(аптека была закрыта, поэтому я не купил аспирин).

If I **hadn't listened** to you, I **would have come** late.

Если бы я тебя не послушал, я бы опоздал. (я последовал твоему совету и пришел во время).

If he **had seen** the doctor**,** he **wouldn't have been** ill for such a long time.

Если бы он посетил врача, он бы не болел так долго. (он не посещал врача, поэтому долго болел).

В условном предложении вместо **would** можно использовать модальные глаголы **could** или **might.**

If you had eaten a giant pizza, you **might** have been sick!

Если бы ты съел огромную пиццу, тебе могло бы быть плохо. (возможно было бы плохо, но необязательно).

If Mary had told me she was coming? I **could** have cooked a nice meal.

Если бы Мэри предупредила меня о своем приходе, я бы приготовил что-нибудь вкусное (я мог бы сделать это).

Условное предложение третьего типа – единственный тип условных предложений, связанный с прошлым.

If I **had had** a headache, I would have taken an aspirin. (в прошлом).

В условном предложении второго типа используется форма глагола в past simple, но связь с прошедшим временем отсутствует.

If I **had** a headache? I would take an aspirin (сейчас или вообще).

Выражение **even if** в значении «даже если» может использоваться со всеми типами условных предложений

I won't work with them **even if** they change their attitude towards me.

Even if he changed tactics, the team would never win.

They wouldn't have beaten Real Madrid **even if** they had had Beckham and Giggs.

REPORTED SPEECH / Косвенная речь

Косвенная речь используется для передачи чужого высказывания. He said (that) his father **worked** as a doctor.

Правила преобразования прямой речи в косвенную:

Прямая речь	**Косвенная речь**
Present simple "I **want** to solve this problem", he said.	Past simple He said he **wanted** to solve that problem.
Present continuous "We **are examining** our patients", they said.	Past continuous They said they **were examining** their patients.
Present perfect continuous **"**I **have been working** here all day", he said.	Past perfect continuous He said she **had been working** there all day.
Past continuous "I **was doing** the housework", said. Ann	Past perfect continuous Ann said she **had been doing** the housework.
Will "I **will** make you a cup of tea", said Tom.	Would Tom said he **would** make me a cup of tea.
Am/is/are going to They **are going to** travel to Paris", said Joe.	was/were going to Joe said they **were going to** travel to Paris.
Can "I **can** speak French", Emma said.	Could Emma said she **could** speak French.
Must / have to "You **have to** go there", she said.	Had to She said we **had to** go there.
May "I **may** see my doctor next week", said Ted.	Might Ted said he **might** see his doctor the following week.

В косвенной речи обычно требуется замена ряда слов.

Местоимения:	**Обстоятельства времени и места:**
I → he/she	here → there
You → I/me/they/them	now → then/at that moment
We → they	tomorrow → the next day
Us → them	tonight → that night
My → his/her	next week → the following week
Your → my/their	yesterday → the day before
	last week → the week before
	ago → before

Согласование времен производится только в том случае, если вводная фраза содержит глагол в **past simple** (например, **said**). Tony **says** he **is going to** study medicine.

Глаголы в **past perfect simple и past perfect continuous** остаются без изменений.

“I **had seen** the picture” → He said he **had seen** the picture.

Модальные глаголы **would, should, could, might** также остаются без изменений.

“I **migh**t go there”. → She said she **might** go there.

Согласование времен не употребляется в предложениях выражающих общеизвестную истину:

The speaker **said** that humankind completely **depends** on environment.

Косвенная речь может содержать такие глаголы, как **apologise, deny, promise, refuse, suggest.**

He **apologized for** losing the book. He **denied** breaking the cup.

Sam **promised to** help me decorate the house. My dad **suggested** go**ing** to the museum.

She **refused to** let me see her painting.

QUESTIONS, QUESTION TAGS, INDIRECT QUESTIONS / Вопросы: общие, специальные, альтернативные, разделительные, косвенные

Questions

Общие вопросы с обычными глаголами	**Do** you **fee**l cold? **Did** they **go** shopping? (simple tenses) **Am** I **annoying** you? **Were** they **waiting** for you? (continuous) **Have** you **seen** this film? **Had** it **started**? (perfect tenses)
Общие вопросы с be	**Am** I late? **Were** you all right? **Have** you been ill?
Общие вопросы с have	**Does** she **have** a bath every day? **Did** they **have** lunch at 2 o'clock?
Общие вопросы с модальными глаголами	Should I call the police? Could you call me later?
Специальные вопросы	**Who** was in hospital? **What**'s your name? **Where** are you from?
Альтернативные вопросы	**Do** you like tea or coffee? **Does** he study or work?

В вопросе в страдательном залоге вспомогательный глагол ставится перед подлежащим

Was Mr Brown **discharged** from the hospital? **Has** he **been discharged** from hospital?

В вопросе к подлежащему используется порядок слов утвердительного предложения. В вопросе к дополнению после **who** или **what** ставится вспомогательный глагол.

Who told you that? (вопрос к подлежащему).

Who did you tell? (вопрос к дополнению).

Question tags

Разделительные вопросы употребляются:	**Примеры**
Для получения согласия с высказанной точкой зрения	**It's** confusing, **isn't it**?
Для подтверждения справедливости высказывания	You **haven't** been there, **have you**?
Вопросы с обычными глаголами	Phil **works** here, **doesn't** he? They **didn't** go, **did** they? You**'re coming**, aren't you? They **weren't working**, **were** they? They've gone, **haven't** they? You hadn't seen it, **had you**?
Вопросы с be	He's now here, **isn't** he? You weren't late, **were** you?
Вопросы с have	They have a car, **haven't/don't** they? He didn't work, **did** he?
Вопросы с модальными глаголами	You should be there by now, **shouldn't** you?

Если вопрос начинается с I am, то краткая часть содержит aren't I? I'm right, **aren't I**?

Если вопрос начинается с I am not, то краткая часть содержит am I. I'm not late, **am I**?

В разделительных вопросах с let's краткая часть содержит shall we. Let's go, **shall we**?

Indirect questions

Вводная фраза + предложение с прямым порядком слов

Косвенные вопросы употребляются:	**Примеры**
В качестве вежливой формы запроса информации	**Can/could you tell me** where the bank is? **Can/could you let me know** what time the film starts? **Do you know if** Bill lives there? **I wonder if you know** how much this costs?

Во второй части косвенного вопроса сохраняется порядок слов утвердительного предложения.

Irregular verbs

Infinitive	Past simple	Past participle
be	was/were	been
beat	beat	beaten
become	became	become
begin	began	begun
bend	bent	bent
bet	bet	bet
bite	bit	bitten
blow	blew	blown
break	broke	broken
bring	brought /brɔ:t/	brought /brɔ:t/
build /bɪld/	built /bɪlt/	built /bɪlt/
burn	burnt/burned	burnt/burned
burst	burst	burst
buy /baɪ/	bought /bɔ:t/	bought /bɔ:t/
can	could /kʊd/	(been able)
catch	caught /kɔ:t/	caught /kɔ:t/
choose	chose	chosen
come	came	come
cost	cost	cost
cut	cut	cut
deal /di:l/	dealt /delt/	dealt /delt/
dig	dug	dug
do	did	done
draw	drew	drawn
dream	dreamt/dreamed	dreamt/dreamed
drink	drank	drunk
drive	drove	driven
eat	ate	eaten
fall	fell	fallen
feed	fed	fed
feel	felt	felt
fight	fought /fɔ:t/	fought /fɔ:t/
find	found	found
fly	flew	flown
forget	forgot	forgotten
forgive	forgave	forgiven
freeze	froze	frozen
get	got	got
give	gave	given
go	went	gone/been
grow	grew	grown
hang	hung/hanged	hung/hanged
have	had	had
hear	heard /hɜ:d/	heard /hɜ:d/
hide	hid	hidden
hit	hit	hit
hold	held	held
hurt /hɜ:t/	hurt /hɜ:t/	hurt /hɜ:t/
keep	kept	kept
kneel	knelt/kneeled	knelt/kneeled
know	knew /nju:/	known
lay	laid	laid
lead	led	led
learn	learnt	learnt
leave	left	left
lend	lent	lent

Infinitive	Past simple	Past participle
let	let	let
lie	lay/lied	lied/lain
light	lit/lighted	lit/lighted
lose	lost	lost
make	made	made
mean	meant /ment/	meant /ment/
meet	met	met
must	had to	(had to)
pay	paid	paid
put	put	put
read	read /red/	read /red/
ride	rode	ridden
ring	rang	rung
rise	rose	risen
run	ran	run
say	said /sed/	said /sed/
see	saw /sɔ:/	seen
sell	sold	sold
send	sent	sent
set	set	set
shake	shook	shaken
shine	shone	shone
shoot	shot	shot
show	showed	shown
shrink	shrank	shrunk
shut	shut	shut
sing	sang	sung
sink	sank	sunk
sit	sat	sat
sleep	slept	slept
slide	slid	slid
smell	smelt/smelled	smelt/smelled
speak	spoke	spoken
spell	spelt/spelled	spelt/spelled
spend	spent	spent
spill	spilt/spilled	spilt/spilled
split	split	split
spoil	spoilt/spoiled	spoilt/spoiled
spread	spread	spread
stand	stood	stood
steal	stole	stolen
stick	stuck	stuck
swear	swore	sworn
swell	swelled	swollen/swelled
swim	swam	swum
take	took /tʊk/	taken
teach	taught /tɔ:t/	taught /tɔ:t/
tear	tore	torn
tell	told	told
think	thought /θɔ:t/	thought /θɔ:t/
throw	threw	thrown
understand	understood	understood
wake	woke	woken
wear	wore /wɔ:/	worn
win	won /wʌn/	won /wʌn/
write	wrote	written

GLOSSARY

A

abnormal [æb´nɔ:ml] ненормальный, неправильный

abrasion [ə´breiʒn] истирание; ссадина

absorption [əb´sɔ:pʃn] всасывание, поглощение

abuse [ə´bju:s] злоупотребление; неправильное употребление

acceleration [ək ˌselə´reʃn] ускорение, акселерация

acceptance [ək´septəns] принятие, прием; одобрение

access [´ækses] доступ; подход

accidental [ˌæksi´dentl] случайный; второстепенный

accounting [ə´kauntiŋ] учет, отчетность; расчет, балансирование

accreditation [ə´kreditei∫n] аккредитация

acid [´æsid] кислота

action [´æk∫n] действие; воздействие; деятельность

addiction [ə´dik∫ən] склонность к чему-либо, пагубная привычка

addition [ə´di∫n] прибавление, дополнение; in addition to вдобавок, кроме

administer [əd´ministə] назначать, давать (лекарство); drug administration назначение или прием лекарства

adrenal [ə´dri:nl] надпочечный

adverse [´ædvə:s] неблагоприятный, вредный

adult [´ædʌlt] взрослый, совершеннолетний, зрелый

aerosol [´eərəusɔl] аэрозоль

affect [ə´fekt] действовать, воздействовать, влиять; поражать (о болезни)

agent [´eiʤənt] действующая сила, фактор, вещество

alchemy [´ælkəmi] алхимия

alcohol [´ælkəhɔl] спирт, спиртовой

algae [ˌælʤi:] водоросли

alleviate [ə´li:vieit] облегчать (боль, страдание), смягчать

alteration [ˌɔ:ltə´rei∫n] изменение, перемена

ambiguous [æm´bigjuəs] двусмысленный; сомнительный

ambulatory [æmbju´leitəri] амбулаторный; передвижной, временный

ameliorate [ə´mi:liəreit] улучшать(ся)

amorphous [ə´mɔ:fəs] аморфный, бесформенный

amount [ə´maunt] количество; сумма, итог

amoxicillin [ə´mɔksilin] антибиотик

anabolic steroid [ˌænə´bɔlik ´stiərɔid] анаболические стероиды

anaesthesia [ˌænəs´θi:ziə] анестезия, обезболивание

anaesthetic [ˌænəs´θetik] анастезирующий; обезболивающее средство

analgesia [ˌænl´ʤi:ziə] анальгезия (отсутствие болевой чувствительности)

analgesic [ˌænl´ʤi:zik болеутоляющий; болеутоляющее средство

analogues [ə´næləgəs] аналогичный, сходный

analysis [ə´næləsis] анализ; (хим) разложение

anatomy [ə´nætəmi] анатомия

angina pectoris [æn´ʤainə ´pektəris] стенокардия

animal [´æniml] животное

antagonist [æn´tægənist] антагонист, соперник, противник

antagonistic [æn,tægə´nistik] противодействующий

anthropology [ˌænθrə´pɔləʤi] антропология

anti-allergic [ˌæntiæ´lə:ʤik] противоалергенный

antibiotic [ˌæntibai´ɔtik] антибиотик

anticoagulant [ˌæntikəu´ægjulənt] антикоагулянт

antidepressant [ˌæntidi´pres(ə)nt] антидепрессант

antihistamine [ˌænti´histəmi:n] антигистамин; антигистаминный препарат

antiinfection [ˌæntiin´fekʃn] противоинфекционный

anti-inflammatory [ˌænti in´flæmətəri] противовоспалительный

antipathogenic [ˌæntipæθə´ʤenik] противопатогенный

antipyretic [ˌæntipai´retik] жаропонижающий

antiquity [æn´tikwəti] древность, старина; античность

antiseptic [ˌænti´septik] антисептическое средство

antiviral [ˌænti´vairəl] противовирусный

antiulcer [ˌænti´ʌlsə] противоязвенный

anxiety [æŋ´zaiəti] беспокойство, тревога

apothecary [ə´pɔθikəri] уст. аптека; аптекарь

applicability [ˌæplikəˊbiləti] применимость, пригодность
application [ˌæpliˊkeiʃn] заявление, прошение; употребление; применение
approve [əˊpru:v] одобрять; утверждать, санкционировать
archaebacteria [α:tʃbækˊtiəriə] основные бактерии
artificial [ˌɑ:tiˊfiʃl] искусственный
aspirin [ˊæsprin] аспирин
asthma [ˊæsmə] астма, приступ удушья
astrology [əˊstrɔlədʒi] астрология
astronomy [əˊstrɔnəmi] астрономия
atom [ˊætəm] атом, мельчайшая частица
available [əˊveiləbl] доступный, имеющийся в наличии; полезный;

B

bacteria [bækˊtiəriə] бактерии; ед.число bacterium
bacteriology [bækˌtiəriˊɔlədʒi] бактериология
balm [bα:m] бальзам, болеутоляющее средство
bandage [ˊbændiʤ] бинт, перевязочный материал; бандаж
behaviour [biˊheivjə] поведение, манеры
beneficial [ˌbeniˊfiʃl] выгодный, полезный
beta-blocker [ˊbi:tə ˌblɔkə] бета-блокатор
betel nut [ˊbi:tl nʌt] орех бетеля
binding [ˊbaindiŋ] связь
bioactive [ˌbaiəuˊæktiv] биоактивный
bioactive molecule [ˌbaiəuˊæktiv ˊmɔlikju:l] биоактивная молекула
bioavailability [ˌbaiəuəveiləˊbiliti] биодоступность, биопригодность
biochemistry [ˌbaiəuˊkemistri] биохимия
bioequivalence [ˌbaiəuiˊkwivələns] биоэквивалентность
biology [baiˊɔləʤi] биология; marine biology [məˊri:n baiˊɔləʤi] морская биология
biological [ˌbaiəˊlɔʤik(ə)l] биологический
biopharmaceutical [ˌbaiəufα:məˊsu:tik(ə)l] биофармацевтический
biotechnology [ˌbaiəutekˊnɔləʤi] биотехнология

bizarre [bi´zɑ:] странный, причудливый, эксцентричный

blood [blʌd] кровь

body [´bɔdi] тело, организм

bond [bɔnd] связь; соединение

botany [´bɔtəni] ботаника

boundary [´baundəri] граница, межа; пограничный

bowl [bəʊl] кубок, чаша; чашка; ваза

brain [brein] мозг; рассудок, ум

branch [brɑ:ntʃ] ветвь; филиал, отделение; отрасль

brand [brænd] сорт, качество; тавро; марка

burn [bə:n] ожог; клеймо

C

caduceus [kə´dju:sɪəs] кадуцей – символ мира и красноречия

caffeine [´kæfi:n] кофеин

capsule [´kæpsju:l] капсула, оболочка

cardiology [ˌkɑ:di´ɔlə ʤi] кардиология

cardiovascular [ˌkɑ:diəu´væskjulə] сердечно-сосудистый

care [´keə] забота, уход, попечение

case [´keis] случай; заболевание; история болезни; пациент

catalysis [kə´tæləsis] катализ

cavity [´kæviti] впадина, полость

cellular [´seljulə] клеточный

central nervous system центральная нервная система

challenge ['tʃælən ʤ] вызов; сложная задача, проблема

chemistry [´kemistri] химия

chemical [´kemik(ə)l] химический

chemist [´kemist] химик

chemobioinformatics [ˌki:məubaiəuinfɔ:´mætiks] химиобиоинформатика

chlorofluorocarbon [ˌklɔ:rəfluərə´kɑ:bən] хлорофлюороуглерод

cholesterol [kə´lestərɔl] холестерин

chronic disorder [´krɔnik dis´ɔ:də] хроническая болезнь

circulation [ˌsə:kjuˊleiʃ(ə)n] круговорот; кровообращение

clear-cut [ˌkliəˊkʌt] ясно очерченный, четкий, ясный

clinic [ˊklinik] клиника, лечебница; clinical setting стационар

code [kəud] код; кодекс

cognitive [ˊkɔgnətiv] познавательный

collaborate [kəˊlæbəreit] сотрудничать

colloquial [kə'ləukwiəl] разговорный, нелитературный

combine [kəmˊbain] объединять(ся); комбинировать, сочетать

commence [kəˊmens] начинать(ся)

commercial [kəˊmə:ʃl] торговый, коммерческий

commodity [kəˊmɔdəti] предмет потребления; товарный

company [ˊkʌmpəni] компания

compensate [ˊkɔmpənseit] возмещать, компенсировать

competence [ˊkɔmpitəns] способность, умение; компетентность

compilation [ˌkɔmpiˊleiʃn] компилирование, собирание

complete [kəmˊpli:t] заканчивать; комплектовать

composition [ˌkɔmpəˊziʃn] составление, построение; состав; соединение

compound [ˊkɔmpaund] смесь, состав, соединение

comprehensive [ˌkɔmpriˊhensiv] исчерпывающий; обширный

concentration [ˊkɔnsəntreiʃn] концентрация

concurrent [kənˊkʌrənt] сопутствующее обстоятельство

condition [kənˊdiʃ(ə)n] условие; состояние, положение; обстоятельства

conjunctiva [ˌkɔnʤʌŋkˊtaivə] конъюнктива

consciousness [ˊkɔnʃəsnəs] сознание

consistency [kənˊsistənsi] последовательность, логичность; постоянство

consultant [kənˊsʌltənt] консультант

contraceptive [ˌkɔntrəˊseptiv] противозачаточный

convergence [kənˊvə:ʤəns] конвергенция

course [kɔ:s] курс, направление; ход, течение; курс лекций

cream [kri:m] крем; пена

create [krieit] творить, создавать

crystalline [ˊkristəlain] кристалл

cure [ˊkjuə] лечение; излечение; лекарство, средство
curriculum [kəˊrikjuləm] курс обучения, учебный план
cytology [saiˊtɔləʤi] цитология

D

deaggregation [ˌdi:ægriˊgeiʃn] диагрегация
deficiency [diˊfiʃ(ə)nsi] отсутствие, нехватка, дефицит
dehydration [ˌdi:haiˊdreiʃ(ə)n] обезвоживание, дегидратация
delivery [diˊlivəri] поставка, доставка; передача, вручение
dependence [diˊpendəns] зависимость
depression [diˊpreʃ(ə)n] угнетенное состояние, депрессия
derive [diˊraiv] получать, извлекать; происходить; производить
derivative [diˊrivətiv] производный
description [diˊskripʃn] описание, изображение
design [diˊzain] проект, план, расчет; замысел
detailed [ˊdi:teild] подробный, детальный
detection [diˊtekʃn] выявление, обнаружение; расследование
development [diˊveləpmənt] развитие, рост, расширение, эволюция
device [diˊvais] устройство, приспособление, механизм, аппарат, прибор
diabetes [ˌdaiəˊbi:ti:z] диабет, сахарная болезнь
diagnosis [ˌdaiəgˊnəusis] диагноз; оценка
dichotomy [daiˊkɔtəmi] дихотомия, деление целого на части
digoxin [daiˊgɔksin] дигоксин
discipline [ˊdisəplin] дисциплина; обучение, тренировка
discovery [diˊskʌvəri] раскрытие, обнаружение
disease [diˊzi:z] болезнь
disintegration [disˌintiˊgreiʃn] измельчение; распадение; расщепление
dispense [diˊspens] приготовлять и распределять лекарства
dispersion [diˊspə:ʃn] распределение, рассеивание; разбросанность
dissolution [ˌdisəˊlu:ʃn] растворение, разложение, разжижение
distillation [ˌdistiˊleiʃn] дистилляция, перегонка
distinction [diˊstiŋkʃn] распознавание; отличительная особенность
distribution [ˌdistriˊbju:ʃn] распределение, раздача; распространение

diuretic [ˌdaiju:´retik] мочегонное средство

dosage [´dəusiʤ] дозировка; доза

dose [dəus] доза, прием; порция, доля

drop [drɔp] капля

drowse [drauz] дремота; сонливость

drug [drʌg] лекарство, медикамент; наркотик

druggist [´drʌgist] аптекарь

drugstore [´drʌgstɔ:] амер. аптекарский магазин

drug interaction [drʌg ˌintər´ækʃn] взаимодействие лекарств

drug nomenclature [drʌg nəu´meŋkləʧə] номенклатура лекарств

drug therapy [drʌg ´θerəpi] лекарственная терапия

duration [dju´reiʃn] продолжительность

dye-free [dai fri:] без красителей

dyskenesia [ˌdiskai´ni:ziə] дискенезия

E

ecology [i´kɔləʤi] экология

economics [ˌikə´nɔmiks] экономика как наука; народное хозяйство

ecophysiology [ˌikəfizi´ɔləʤi] экофизиология

education [edjʊ´keiʃn] образование, просвещение, обучение

effect [i´fekt] результат; действие

side effect побочное действие

efficacy [´efikəsi] эффективность, сила, действенность

efficiency [i´fiʃnsi] действенность, эффективность; продуктивность

elixir [i´liksə] эликсир; панацея

elucidation [iˌlu:si´deiʃn] разъяснение

embryology [ˌembri´ɔləʤi] эмбриология

emergency [i´mə:ʤənsi] непредвиденный случай, крайняя необходимость

emulsion [i´mʌlʃn] эмульсия

endogenous [en´dɔʤənəs] эндогенный

engineering [ˌenʤi'niəriŋ] прикладной, технический; техника, инженерия

enhance [in´hɑ:ns] увеличивать, усиливать; повышать

entity [ˊentəti] существо, организм, организация
environment [inˊvairənmənt] окружающая обстановка, среда
enzyme [ˊenzaim] энзим, фермент
epithelium [ˌepiˊθi:liəm] эпителий
equilibrium [ˌi:kwiˊlibriəm] равновесие; уравновешанность
equipment [iˊkwipmənt] оборудование, оснащение
ethnobotany [ˌeθnəˊbɔtəni] этноботаника
ethnopharmacology [ˌeθnəfa:məˊkələʤi] этнофармакология
eubacteria [ˌju:bækˊtiəriə] настоящие бактерии с клеточными стенками
euphoria [ju:ˊfɔ:riə] эйфория, повышенно-радостное настроение
evolution [ivəˊlu:ʃn] развитие, постепенное изменение; эволюция
excretion [iksˊkri:ʃn] выделение
expand [iksˊpænd] расширять(ся), увеличивать(ся); развивать(ся)
experience [ikˊspiəriəns] опыт; квалификация, мастерство
expert [ˊekspə:t] знаток, эксперт, специалист
exposure [ikˊspəuʒə] подвергание риску, опасности, экспозиция
external [ikˊstə:nl] наружный, внешний
extract [ˊekstrækt] экстракт; выдержка, извлечение

F

fat [fæt] жир, сало; смазка fatty acids [fæti æsidz] жирные кислоты
fertilizer [ˊfə:təlaizə] удобрение
flavour [ˊfleivə] вкус, аромат, запах; особенность
flow [fləʊ] течение, поток
fluid [ˊflu:id] жидкость
food [fu:d] пища, питание, еда
food additive пищевая добавка
forensic [fəˊrensik] судебный
formulation [ˌfɔ:mjuˊleiʃn] формулировка, редакция
frequency [ˊfri:kwənsi] частотность, частота
function [ˊfʌŋkʃn] функция, назначение
fungus [ˊfʌŋgəs; plural: fungi or funguses] грибок

G

gaseous [ˊgæsjəs] газовый, газообразный

gel [ʤel] гель

gender [ˊʤendə] пол

gene [ʤi:n] ген

generic [ʤə'nerik] общий, непатентованный

geriatric [ˌʤeriˊætrik] гериатрический

glucocorticoid [ˌgluːkəuˊkɔːtikɔid] глюкокортикоид

glycerine [ˊglisərin] глицерин

government [ˊgʌvnmənt] правление, управление; правительство

graduation [ˌgrædʒuˊeiʃn] окончание учебного заведения

grocery [ˊgrəusəri] бакалея

growth [grəuθ] рост, развитие; увеличение

gustatory [ˊgʌstətəri] вкусовой

gut [gʌt] кишка, пищеварительный канал, кишки

H

habitation [ˌhæbiˊteiʃn] проживание, житье; жилище

hallucinogen [ˌhælu:ˊsinəʤən] галлюциноген

health [helθ] здоровье; благосостояние, жизнеспособность

health care здравоохранение

health care system система здравоохранения

health care professional специалист в области здравоохранения

health care provider медработник

health promotion укрепление здоровья

health services медицинские услуги

heat [hi:t] жара, зной; жар

herb [hə:b] трава, растение

histology [hisˊtɔləʤi] гистология

homeostasis [ˌhəumiəuˊsteisis] гомеостаз

hormone [ˊhɔ:məun] гормон

hormone replacement therapy гормоно-замещающая терапия

hospice [ˊhɔspis] хоспис

hospital [ˊhɔspit(ə)l] больница, госпиталь

hypersensitivity [ˌhaipəsensiˊtiviti] гиперчувствительность

hypertension [ˌhaipəˊtenʃn] гипертония, повышенное кровяное давление

hypertensive [ˌhaipəˊtensiv] чрезмерно чувствительный

hyperthermia [ˌhaipəˊθə:miə] гипертермия, высокая температура

hypothalamic [ˌhaipəuθəˊlæmik] относящийся к гипоталамусу

I

identification [ai,dentifiˊkeiʃn] отождествление; опознание; выяснение

illegal [iˊli:gl] нелегальный незаконный

illegitimate [ˌiləˊʤitəmət] незаконный

illness [ˊilnəs] нездоровье, болезнь

immunization [i,mjunaiˊzeiʃn] иммунизация

implant [ˊimplɑ:nt] вживленная ткань

implementation [ˌimplimenˊteiʃn] осуществление, выполнение

improve [imˊpru:v] улучшать(ся), совершенствовать(ся)

increase [ˊinkri:s] возрастание, увеличение; [inˊ kri:s] возрастать

independent [ˌindiˊpendənt] независимый, самостоятельный

indication [ˌindiˊkeiʃn] указание; симптом; показания для применения

industry [ˊindəstri] отрасль промышленности; промышленность

infectious [inˊfekʃəs] инфекционный, заразный

influence [ˊinfluəns] влияние, действие, воздействие; фактор

influenza [ˌinfluˊenzə] инфлюэнца, грипп

infusion [inˊfju:ʒn] настой, настойка; внутривенное вливание

infusoria [ˌinfjuˊzɔ:riə] инфузория

informatics [ˌinfəˊmætiks] информатика

ingestion [inˊʤest] глотание, проглатывание

ingredient [inˊgri:diənt] составная часть, ингредиент

inhalation [ˌinhəˊleiʃn] вдыхание

inhibitor [inˊhibitə] замедлитель реакции

initial [iˊniʃl] начальный, первоначальный

injection [in´ʤekʃn] инъекция, вливание; лекарство для впрыскивания
injury [´inʤəri] рана, ушиб, травма; вред, ущерб, повреждение
in-patient [´inpeiʃnt] стационарный больной
insect [´insekt] насекомое
insecticide [in´sektisaid] средство от насекомых
insert [´insə:t] вставка, вкладыш, вклейка
insulin [´insju:lin] инсулин
integral [´intiɡrəl] целый, полный; неотъемлемый, существенный
intentional [in´tenʃnəl] намеренный, умышленный
interaction [ˌintər´ækʃn] взаимодействие
interference [ˌintə´fiərəns] вмешательство; препятствие, помеха
intoxication [in´tɔksikeiʃn] интоксикация, отравление
intravenous [ˌintrə´vi:nəs] внутривенный
in vitro [in ´vi:trəu] в пробирке
in vivo [in ´vi:vəu] в живом организме
isotope [´aisətəup] изотоп
issue [´iʃu:] выпуск, издание; вытекание, истечение; выход

J

join [ʤɔin] соединять(ся); присоединять(ся); объединяться
jurisdiction [ˌʤuəris´dikʃn] юрисдикция; подведомственная область
justice [´ʤʌstis] справедливость; правосудие, юстиция

K

keep [ki:p] держать, хранить, сохранять
key [ki:] ключ; ключевой
knowledge [´nɔlidʒ] знание

L

label [leibl] ярлык, этикетка, бирка; наклеивать ярлык
laboratory [lə´bɔrətəri] лаборатория
laxative [´læksətiv] слабительное средство
licence [´laisns] разрешение, лицензия; license [´laisns] разрешать

lick [lik] лизать, облизывать
life threatening [ˌlaif ˊθretniŋ] угрожающий жизни
lining [ˊlainiŋ] подкладка, содержимое; выпрямление, выравнивание
link [liŋk] звено, петля; связь, соединение; соединять, связывать
liquid [ˊlikwid] жидкость
list [list] список, перечень, реестр; вносить в список
locum tenens [ˌləukəmˊtenenz] временный заместитель
lotion [ˊləuʃn] лосьон, жидкое косметическое средство
lozenge [ˊlɔzinʤ] ромб; таблетка
lubricant [ˊlu:brikənt] смазочный материал, смазка

M

makeup [ˊmeikʌp] косметика; состав, структура, строение
malignant [məˊlignənt] злокачественный, болезнетворный
management [ˊmæniʤmənt] управление; дирекция, администрация
manifestation [ˌmænifeˊsteiʃn] проявление; манифестация
manufacturing [ˌmænjuˊfæktʃəriŋ] производство, обработка
marine [məˊri:n] морской
marketing [ˊmɑ:kitiŋ] торговля, сбыт; маркетинг
measure [ˊmeʒə] мера, единица измерения; мерка; предел, степень
medical insurance [medikl inˊʃuərəns] медицинское страхование
medication [ˌmediˊkeiʃn] медикаментозное лечение
medicine [ˊmedsn] медицина; лекарство
medicinal [məˊdisnl] лекарственный, лечебный, целебный
    medicinal chemistry медицинская химия
    medicinal plant лекарственное растение
    medicinal substance лекарственное вещество
medieval [ˌmediˊi:vl] средневековый
merchandise [ˊmə:tʃəndaiz] товары; торговать
metabolism [məˊtæbəʊlizəm] метаболизм, обмен веществ
metabolic [ˌmetəˊbɔlik] относящийся к обмену веществ
microbiology [ˌmaikrəubaiˊɔləʤi] микробиология
midwifery [ˌmidˊwifəri] акушерство

mineral [ˊminrəl] минеральный

miscellaneous [ˌmisəˊleiniəs] смешанный, разнообразный

misuse [ˌmisˊju:s] неправильное употребление; злоупотребление

mix [miks] смешивание; смесь; смешивать, перемешивать

mixture [ˊmikstʃə] смешивание смесь; микстура

molecule [ˊmɔlikju:l] молекула

mortar [ˊmɔ:tə] ступка, ступа

movement [ˊmu:vmənt] движение, передвижение

mucous membrane [ˊmju:kəs ˊmembrein] слизистая оболочка

muscle [ˊmʌsl] мускул, мышца

mycology [maiˊkɔləʤi] микология, наука о грибках

N

name [neim] название

nanotechnology [ˌnænəʊtek ˊnɔləʤi] нанотехнология

narcotic [nɑ:ˊkɔtik] наркотик, наркотическое вещество

nature [ˊneitʃə] природа; характер

nephrology [neˊfrɔləʤi] нефрология

nitroglycerine [ˌnaitrəʊˊglisərin] нитроглицерин

nomenclature [nəu'meŋklətʃə] номенклатура, перечень, список

nonproprietary [ˌnɔnprəˊpraiətəri] непатентованный

noxious [ˊnɔkʃəs] вредный, пагубный, ядовитый

nuclear [ˊnju:kliə] ядерный

nutrient [ˊnju:triənt] питательное вещество

nutrition [njuˊtriʃn] питание

nursing home [ˊnə:siŋhəum] частная лечебница

O

oestrogen [ˊi:strəʤən] эстроген

occur [əˊkə:] случаться, происходить

off-label use нарушение инструкции по применению

ointment [ˊɔintmənt] мазь, притирание

operate [ˊɔpəreit] работать, действовать; управлять

opiod [ˊəʊpiɔid] опиоидный

optimize [ˊɔptimaiz] оптимизировать

oral [ˊɔ:rəl] оральный; orally [ˊɔ:rəli] орально

organism [ˊɔ:gənizəm] организм

living organism живой организм

microorganism микроорганизм

origin [ˊɔriʤn] источник, начало; происхождение

outcome [ˊautkəm] результат, последствие, исход

outline [ˊautlain] очертание, контур

out-patient [ˊautˊpeiʃnt] амбулаторный больной

overdose [ˊəuvədəus] передозировка

P

packet [ˊpækit] пакет, связка; куча, масса

pain [pein] боль, страдание

pain killer обезболивающее средство

pain relief средство, облегчающее боль

papyrus [pəˊpaiərəs] pl. papyri [pəˊpaiərai] папирус

pancreas [ˊpæŋkriəs] поджелудочная железа

paracetamol [ˌpærəˊsi:təməl] парацетамол

parenteral [pæˊrentərəl] парентеральный

paste [peist] паста. мастика

patch [pætʃ] заплата; повязка; пятно; латать; заделывать

pathogen [ˊpæθəʤən] микроорганизм, вызывающий болезнь

patent [ˊpeitnt] патент

patient [ˊpeiʃnt] пациент, больной

patient care уход за пациентом

patient safety безопасность пациента

penicillin [ˌpenəˊsilin] пенициллин

perception [pəˊsepʃ] восприятие, ощущение; осознание, понимание

perform [pəˊfɔ:m] исполнять, выполнять; представлять

permeability [ˌpəmiəˊbiləti] проницаемость

pessary [ˊpesəri] пессарий, маточное кольцо
pesticide [ˊpestisaid] пестицид
pestle [ˊpesl] пестик (ступки)
pharmacist [ˊfa:məsist] фармацевт; аптекарь
pharmacy [ˊfa:məsi] фармация; аптека
pharmaceutical [ˌfa:məˊsju:tikl] фармацевтический
pharmaceutics [ˌfa:məˊsju:tiks] фармацевтика
pharmacodynamics [ˌfa:məkədaiˊnæmiks] фармакодинамика
pharmacogenomics [ˌfa:məkəʤiˊnɔmiks] фармакогеномика
pharmacognosy [ˌfaməkəgˊnəʊzi] фармакогнозия
pharmacoinformatics [ˌfaməkəinfəˊmætiks] фармакоинформатика
pharmacokinetics [ˌfa:məkəkiˊnetiks] фармакокинетика
pharmacology [ˌfa:məˊkɔləʤi] фармакология
pharmacopeia [ˌfa:məkəˊpi:ə] фармакопея
pharmacotherapeutic [ˌfa:məkəθerəˊpju:tik] фармакотерапевтический
phenomenon [fəˊnɔminən] явление, феномен
physician [fiˊziʃn] врач
physicochemical [ˌfizikəuˊkemikl] физикохимический
physics [ˊfiziks] физика
physiology [ˌfiziˊɔləʤi] физиология
phytochemistry [ˌfaitəuˊkemistri] фитохимия
phytotherapy [ˌfaitəuˊθerəpi] фитотерапия
pill [pil] пилюля
pioneer [ˌpaiəˊniə] инициатор, новатор, зачинатель
plant [plɑ:nt] растение; урожай
plasma [ˊplæ:zmə] плазма; протоплазма
poison [ˊpɔizn] яд, отрава; poisonous [ˊpɔiznəs] ядовитый
pour [pɔ:] лить(ся), вливаться; наливать
powder [paudə] порошок; пудра
practice [ˊpræktis] практика; установленный порядок; упражнение
precursor [ˌpri:ˊkə:sə] предтеча, предшественник; предвестник
preparation [ˌprepəˊreiʃn] приготовление; препарат; лекарство

prerequisite [pri:´rekwəzit] предпосылка
prescription [pri´skripʃn] рецепт; прописанное лекарство
presentation [ˌprez(ə)n´teiʃn] презентация, представление
preservative-free [pri´zə:vətiv fri:] без консервантов
preserve [pri´zə:v] сохранять, консервировать
prevention [pri´venʃən] предотвращение, предупреждение, профилактика
primary [´praiməri] что-л., имеющее первостепенное значение
prion [´priɔ:n] частица протеина, не содержащая нуклеиновой кислоты
prior [praiə] прежний; раньше, прежде
process [prəu´ses] процесс, ход развития
product [´prɔdəkt] продукт, продукция; результат
production [prə´dʌkʃn] выработка; производство, изготовление
promote [prə´məut] выдвигать, продвигать; способствовать
protein [´prəuti:n] белок, белковый
protozoology [ˌprəutəuzəu´ɔlədʒi] протозоология
property [´prɔpəti] свойство, качество
provide [prə´vaid] снабжать, обеспечивать; предоставлять
psychiatry [sai´kaiətri] психиатрия
psychoactive [ˌsaikəu´æktiv] психоактивный
psychology [sai´kɔlədʒi] психология
psychological [ˌsaikəu´lɔdʒikl] психологический
pulmonary [´pʌlmənəri] легочный
pure [pjuə] чистый, беспримесный
purity [´pjuərəti] чистота; беспримесность

Q

qualify [´kwɔlifai] обучаться, приобретать специальность
quality [´kwɔliti] качество; свойство, особенность
quantity [´kwɔntiti] количество
quantum [´kwɔntəm] квант; количество, сумма, доля
quinine [kwi´ni:n] хинин

R

radioopaque [ˌreidiəʊˊpeik] рентгеноконтрастный

rapidity [rəˊpidəti] быстрота, скорость

receive [riˊsi:v] принимать, получать, воспринимать, вмещать

receptor [riˊseptə] рецептор

recognize [ˊrekəgnaiz] узнавать; признавать; одобрять

recreational [ˌrekriˊeiʃnəl] развлекательный

rectum [ˊrektəm] прямая кишка

redistribution [ˌri:distriˊbju:ʃn] перераспределение, передел

reduction [riˊdʌkʃn] снижение, сокращение

refreshment [riˊfreʃmənt] подкрепление, восстановление

regard [riˊgɑ:d] взгляд, внимание, уважение

regimen [ˊreʤimən] режим, диета

registered [ˊreʤistəd] зарегистрированный

relapse [riˊlæps] повторение, рецидив

relationship [riˊleiʃnʃip] родство, отношение

relevant [ˊreləvənt] уместный

remedy [ˊremədi] средство, лекарство

remuneration [ri ˌmju:nəˊreiʃn] вознаграждение, компенсация

repercussion [ˌri:pəˊkʌʃn] отдача, отражение

represent [ˌrepri ˊzent] изображать, отражать; представлять

research [riˊsɜ:tʃ] исследование, поиски

residency [ˊrezidənsi] проживание, пребывание

resistance [riˊzistəns] сопротивление, противодействие

response [riˊspɔns] ответ, отклик

responsibility [riˊspɔnsəˊbiləti] ответственность, обязанность

restriction [riˊstrikʃn] ограничение

result [riˊzʌlt] результат, исход

retailer [ˊri:teilə] розничный торговец, лавочник

retail shop [ˊri:teil ʃɔp] магазин розничной торговли

require [riˊkwaiə] приказывать, требовать

review [riˊvju:] обзор, просмотр

root [ru:t] корень, основание

route [ru:t] маршрут, курс, дорога

rudimentary [ˌru:di´mentəri] элементарный, недоразвитый

S

safety [´seifti] безопасность, надежность, сохранность

saline [´seilain] соль; соляной раствор

schedule [´ʃedju:l] список, перечень, каталог, опись; план; расписание

science [´saiəns] наука; *собир*. естественные науки sciences

scientific [´saiəntifik] научный

scientist [´saiəntist] ученый

scope [skəʊp] границы, рамки; предел, масштаб, сфера

screening [´skri:niŋ] скрининг; высевки; просеивание; отсев, отбор

secondary [´sekəndəri] вторичный, побочный; второстепенный

secure [si´kjʊə] спокойный; безопасный, надежный; прочный

sell [sel] (sold) продавать(ся); торговать

semi-pure [ˌsemi´pjuə] получистый

separate [´seprət] особый; особый, самостоятельный

serendipitous [ˌser(ə)n'dipətəs] связанный со счастливым случаем

serum [´siərəm] pl. sera сыворотка

service [´sə:vis] служба; услуга, одолжение; обслуживание

shift [ʃift] изменение, сдвиг; смена, перемена

similarity [ˌsimə´lærəti] сходство, подобие

simple [simpl] простой; элементарный

skill [skil] искусство, мастерство, умение

small intestine [ˌsmɔ:l in´testin] тонкая кишка

soil [sɔil] почва, земля; земля, территория

solid [´sɔlid] твердый; сплошной, цельный

solubility [ˌsɔlju´biləti] растворимость

solvent [´sɔlv(ə)nt] растворитель

solution [sə´lu:ʃ(ə)n] решение; растворение; раствор; микстура

sorcery [´sɔ:səri] колдовство, волшебство, чары

source [´sɔ:s] исток; начало, источник

specific [spə´sifik] определенный, точный, конкретный

specify [ˊspesəfai] точно определять, указывать; отмечать
spectrum [ˊspektrəm] спектр
spermatozoa [ˌspə:mətəˊzəu] сперматозоид
spermicide [ˊspə:misaid] вещество убивающее сперму
spinal cord [ˊspain(ə)l kɔ:d] спинной мозг
spray [sprei] водяная пыль, брызги; распылитель
sterile [ˊsterail] стерильный
stick [stik] (stuck) наклеивать
stimulant [ˊstimjulənt] возбуждающее средство; спиртной напиток
stomach [ˊstʌmək] желудок
storage [ˊstɔ:riʤ] хранение
structure [ˊstrʌkʧə] структура
sublimation [ˌsʌbliˊmeiʃn] сублимация
sublingual [sʌbˊliŋʊwəl] подъязычный
substance [ˊsʌbstəns] вещество
suitability [ˌsu:təˊbiliti] соответствие, годность
supervision [ˌsu:pəˊviʒn] надзор, наблюдение
supply [səˊplai] снабжать, обеспечивать
suppository [səˊpɔzit(ə)ri] суппозиторий, свеча
suppression [səˊpreʃn] подавление
suspension [səˊspenʃən] суспензия
symbol [ˊsimbl] символ, эмблема; обозначение, знак
symptom [ˊsimptəm] симптом
syndrome [ˊsindrəʊm] синдром
synergistic [ˊsinəʤistik] синергетический
syringe [siˊrinʤ] шприц
syrup [ˊsirəp] сироп; очищенная патока

T

tablet [ˊtæblət] таблетка, дощечка
tardy [ˊtɑ:di] медлительный; запоздалый, поздний
taxonomy [tækˊsɔnəmi] таксономия, принципы классификации

technique [tek´ni:k] техника, прием

technology [tek´nɔləʤi] технология, техника

therapeutics [ˌθerə´pju:tiks] терапия, терапевтика

therapist [´θerəpist] терапевт

therapy [´θerəpi] лечение, терапия

thorough [´θʌrə] подробный, основательный

throughout [θru´aʊt] на всем протяжении

tissue [´tiʃu:] ткань

tongue [tʌŋ] язык

toxic [´tɔksik] ядовитый, токсический

toxicology [ˌtɔksi´kɔləʤi] токсикоология

transduction [trænz´dju:kʃn] трансдукция

transfusion [træns´fju:ʒn] переливание

tranquillizer [´træˌkwəlaizə] успокаивающее

trial [´traiəl] проба, испытание

U

undergo [ˌʌndə´gəʊ] испытывать, переносить, подвергаться

undergraduate [ˌʌndə´græʤʊət] студент

unit [´ju:nit] единица, целое; единица измерения

unpredictable [ˌʌnpri´diktəbl] не могущий быть предсказанным

unprepared [ˌʌnpri´peəd] неподготовленный, неготовый

urethra [ju´riθrə] мочеиспускательный канал, уретра

V

vaccine [´væksi:n] вакцина

vapour [´veipə] пар, пары, испарение

veterinary [´vetrənəri] ветеринарный

viability [ˌvaiə´biliti] жизнеспособность

vital [´vaitl] жизненный, существенный

virus [´vaiərəs] вирус

W

warfarin [ˊwɔ:f(ə)rin] вещество от свертываемости крови

well-being [ˌwelˊbi:iŋ] здоровье; благополучие; благосостояние

welfare [ˊwelfeə] благосостояние

whole [həul] весь, целый; wholesale [ˊhəulseil] оптовая торговля

withdrawal [wiðˊdrɔ:l] изъятие; отозвание; удаление

wound [wu: nd] рана, ранение

X

X-ray [ˌeksˊrei] рентгеновские лучи; рентгеновский; просвечивать

Y

yeast [ji:st] дрожжи

yield [ji:ld] сбор плодов, урожай; производить

Z

zinc [ziŋk] цинк; цинковый: оцинковывать

zoopharmacognosy [ˌzu:fəməkɔgˊnəuzi] зоофармакогнозия

Suggested Readings / Рекомендуемая литература

Основная литература

1. Марковина И.Ю., Громова Г.Е., Никитина Е.Е. Английский язык. Грамматический практикум для фармацевтов. Учебное пособие М.: ГЭОТАР-Медиа, 2006.
2. Марковина И.Ю., Громова Г.Е. Английский язык. Грамматический практикум для фармацевтов. Рабочая тетрадь М.: ГЭОТАР-Медиа, 2006.
3. Марковина И.Ю., Максимова З.К., Бабченко Е.В., Трофимова Н.А., Фёдорова Л.Н. Англо-русский медицинский словарь. М.: «Медицинское информационное агентство», 2008.

Дополнительная литература:

4. Лесохина Т.Б., Марковина И.Ю., Карагезьян М.В. Практикум по устному профессиональному общению для медиков. International Communication: Medical Conference. Допущено Министерством образования и науки РФ в качестве учебного пособия для медицинских вузов. Рабочая тетрадь для студента. (CD) М.: «Билингва» 2005.
5. Английский язык. Учебник для студентов медицинских вузов. Рекомендовано Министерством образования и науки РФ в качестве учебника для медицинских вузов. Под ред. Т.П. Щедриной М., «Высшая школа», 2004.
6. Щедрина Т.П. Английский язык в медицине. Практика чтения и устной речи. Учебное пособие. М., «Высшая школа», 2004.
7. Марковина И.Ю. Новый англо-русский и русско-английский медицинский словарь М.: «Живой язык», 2009.

Программное обеспечение

8. SPSS for Windows 14.0. Microsoft Office Word. Microsoft Office Excel. Microsoft Office Power Point.

Базы данных, информационно-справочные и поисковые системы

9. www.lingvo.ru электронный словарь Abby Lingvo
10. www.multitran.ru электронный словарь Multitran
11. mednet.ulca.edu Ресурс Калифорнийского университета Лос Анджелеса (UCLA)
12. www.cdc.gov Centers for disease control and prevention fda.gov U.S. Food and Drug Administration

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