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«САНКТ-ПЕТЕРБУРГСКИЙ
ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ ТЕЛЕКОММУНИКАЦИЙ
им. проф. М. А. БОНЧ-БРУЕВИЧА»
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АНГЛИЙСКИЙ ЯЗЫК

В СФЕРЕ ЦИФРОВЫХ ТЕХНОЛОГИЙ И ТЕЛЕКОММУНИКАЦИЙ

УЧЕБНИК

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Утверждено редакционно-издательским советом СПбГУТ
в качестве учебника

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Содержит основной учебный материал по дисциплине «Иностранный язык», необходимый для развития компетенций в области деловой коммуникации в устной и письменной форме на иностранном языке с учетом межкультурного разнообразия общества, а также совершенствования навыков чтения, перевода и анализа текстов.

Предназначен для студентов 1-го курса, обучающихся по программам бакалавриата всех технических направлений подготовки.

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СОДЕРЖАНИЕ

ВВЕДЕНИЕ

Дисциплина «Иностранный язык» (английский, немецкий, русский как иностранный) согласно рабочему учебному плану СПбГУТ изучается в течение двух семестров первого курса. На ее изучение отводится 6/7 ЗЕТ (216/252 часа).

Рассматриваемая дисциплина направлена на формирование компетенции УК-4 ФГОС ВО 3++ «Способен осуществлять деловую коммуникацию в устной и письменной формах на государственном языке Российской Федерации и иностранном(ых) языке(ах)».

Деловая коммуникация рассматривается в учебнике с практической точки зрения как форма официального устного стиля общения, а также письменного делового общения (отдельные виды деловой документации). Деловое общение включает учебную и будущую профессиональную деятельность студента. Учебник имеет следующую структуру: первый раздел – «Вводный курс», второй – «Курс практической грамматики» и третий – «Повседневная и деловая коммуникация».

В первом и втором разделах представлен теоретико-практический материал, необходимый для изучения таких аспектов английского языка, как правила чтения, словообразование и грамматика; также в этот раздел включены упражнения для закрепления полученных знаний и формирования фонетических и грамматических умений устного и письменного делового общения.

Третий раздел состоит из 13 тематических частей – уроков, содержащих текстовый материал и упражнения для обучения коммуникации в различных сферах – повседневной, социокультурной, деловой, профессиональной. Тексты содержат информацию об официальном и неофициальном стилях общения, правилах заполнения анкет, составления Curriculum Vitae, структуре и разновидностях деловой переписки. Материалы текстов учебника позволяют на новом уровне освоить повседневную коммуникацию по темам «Introducing myself», «Hometown», «Student's Life» и продолжить обучение коммуникации в социокультурной сфере на основе тем «Higher Education in Russia and UK», «Tech Education», «Global English». Знакомство с профессиональной сферой коммуникации осуществляется на основе текстовых материалов уроков «Jobs in IT and Telecoms», «Convergence and Mobility in Telecoms and IT», «Networking», «Media», «Computer Security, Malware & Antivirus Detection», «New Horizons in IT and Telecommunications».

Учебник может также использоваться для формирования компетенции ОК-5 ФГОС ВО 3+ «Способность к коммуникации в устной и письменной формах на русском и иностранном языках для решения задач межличностного и межкультурного взаимодействия».

Авторы выражают благодарность своим коллегам, преподавателям кафедры ИН и РЯ СПбГУТ, чьи материалы были использованы для создания учебника: Е. Н. Беловой, Т. Р. Галиевой, А. П. Маринской, И. Н. Махониной, Т. А. Оводовой, К. Д. Токаревой, М. В. Яценко.

I раздел
ВВОДНЫЙ КУРС

1. ФОНЕТИКА

Английский алфавит содержит 26 букв: 6 гласных (a, e, i, o, u, y) и 20 согласных. **Запомните их названия!** Они могут понадобиться, когда нужно уточнить, каким образом пишется то или иное слово. Вас могут попросить произнести его по буквам (spell).

Номер	Буква	Произношение названия	Номер	Буква	Произношение названия
1	**Aa**	[ei]	14	**Nn**	[en]
2	**Bb**	[bi:]	15	**Oo**	[əu]
3	**Cc**	[si:]	16	**Pp**	[pi:]
4	**Dd**	[di:]	17	**Qq**	[kju:]
5	**Ee**	[i:]	18	**Rr**	[a:(r)]
6	**Ff**	[ef]	19	**Ss**	[es]
7	**Gg**	[ʤi:]	20	**Tt**	[ti:]
8	**Hh**	[eiʧ]	21	**Uu**	[ju:]
9	**Ii**	[ai]	22	**Vv**	[vi:]
10	**Jj**	[ʤei]	23	**Ww**	['dʌblju:]
11	**Kk**	[kei]	24	**Xx**	[eks]
12	**Ll**	[el]	25	**Yy**	[wai]
13	**Mm**	[em]	26	**Zz**	[zed]

1. *Продиктуйте по буквам Ваши имя, фамилию, адрес электронной почты Вашему партнеру. Запишите его информацию на слух, а затем проверьте результат.*

Знаки транскрипции

Поскольку большинство английских букв имеет несколько вариантов чтения, в качестве условного обозначения звучания слова в словаре используются транскрипционные знаки. Каждый знак, в отличие от буквы, может обозначать *только один звук* вне зависимости от положения в слове.

Запомнив знаки транскрипции, можно прочитать любое слово по словарю.

Обратите внимание, что часть транскрипционных знаков совпадает по написанию с буквами, но при этом не всегда совпадает их чтение (Ср.: [j] – you и j – job). При написании транскрипции используются квадратные скобки [ ]; круглые скобки в транскрипции означают, что звук, заключенный в них, может не читаться.

В транскрипции любого слова, содержащего более одного слога, используются знаки ударения. Они ставятся *перед слогом* (а не над ударной гласной, как в русском языке) и могут обозначать основное (ʻ) или второстепенное (ˌ) ударение. Например: [ɪ'lektrɒn], [ˌelek'trɪsətɪ].

Ниже приводятся соответствия транскрипционных знаков звукам английского языка.

Простые гласные звуки

1. [æ]* c**a**t, bl**a**ck	4. [i]/[I] s**i**t, l**i**ttle	7. [ə] pap**er**, gen**er**al	10. [ɔ:] f**or**, m**ore**
2. [ʊ]/[u] p**u**t, p**u**ll	5. [e] t**e**n, p**e**n	8. [ɑ:]/[a:] c**ar**, f**ar**	11. [u:] bl**ue**, y**ou**
3. [ʌ] b**u**s, c**u**t	6. [ɒ]/[ɔ] n**o**t, h**o**t	9.[i:] s**ee**, m**ee**t, m**ea**t	12. [ə:]/[ɜ:] g**ir**l, p**ur**l

Дифтонги

1. [ei]* d**ay**, t**a**ke	3. [au] ab**ou**t, f**ou**nd	5. [ɔi]* b**oy**	7. [ɛə]/ [eə] squ**are**, c**are**
2. [ai]* l**i**ke, **I**	4. [ou]/[əu]/[əʊ] n**o**, r**o**se	6. [iə] n**ear**, h**ere**	8. [uə] s**ure**, c**ure**

Согласные звуки

1. [b] **b**ag	7. [m] **m**other	13. [v]* fi**v**e	19. [dʒ] **J**ames, pa**g**e
2. [d] **d**og	8. [n] **n**ever	14. [s] **s**ix	20. [h]* **h**at
3. [g] **g**ive, do**g**	9. [ŋ]* goi**ng**	15. [z] **z**ero, no**s**e	21. [l] **l**amp
4. [p]**p**a**p**er	10. [θ]* **th**ing, **th**ink	16. [ʃ] **s**ure, **sh**e	22. [r] **r**at
5. [t] **t**able	11. [ð]* **th**ey, **th**ere	17. [ʒ] gara**g**e, re**g**ime	23. [j] **y**ou, **y**oung
6. [k] **c**at, **c**a**k**e	12. [f]* **f**ive	18. [tʃ] **ch**air	24. [w] **wh**at, **w**indow

Обратите особое внимание на произнесение звуков, обозначенных звездочкой*, которые подробно рассмотрены далее.

Отличия фонетического строя русского и английского языков

1. В английском языке долгота гласного звука влияет на смысл: live [liv] – жить, leave [li:v] – оставлять; pot [pɒt] – котелок, горшок, port [pɔ:t] – порт. Долгота гласного обозначается в транскрипции двумя вертикально расположенными точками [:].

2. Английские звонкие согласные на конце слова и перед глухими согласными никогда не оглушаются. Оглушение может привести к изменению смысла: nod [nɒd] – кивать, not [nɒt] – нет, не.

3. Английские согласные звуки произносятся твердо перед любыми гласными звуками: did [did], ten [ten].

4. В английских дифтонгах [ei], [ai], [ɔi] важно не заменять последний элемент звуком [й/j]. Первая часть дифтонга – «ядро» – произносится довольно четко; вторая часть представляет собой скольжение в направлении звука [ɪ], который, однако, четко не произносится – boy.

5. При произнесении звука [æ] рот раскрывается значительно шире, чем для [e]. Сравните произнесение русского звука [э] в словах «этот» и «эти», где различие не влияет на смысл. В английском это различие несет смыслоразличительную нагрузку, например: a man [æ] – человек; мужчина, men [e] – люди, мужчины.

6. Чтобы произнести звуки [ð]/[θ], положите кончик языка на кромку нижних зубов; между кромкой верхних зубов и поверхностью кончика языка образуется щель, через которую проходит струя воздуха. Звук [ð] звонкий (произносится при участии голоса), [θ] – глухой. На письме оба эти звука обозначаются только сочетанием *th.*

7. Звуки [f] и [v] напоминают русские [ф] и [в], но английские звуки более напряженные и всегда произносятся при участии верхних зубов и нижней губы. На письме эти звуки чаще всего обозначаются буквами *f*, *v.*

8. При произнесении звука [w] губы сильно вытянуты вперед и напряжены, зубы и язык в артикуляции не участвуют. Этот звук может быть только звонким. Он обозначается на письме буквой *w* или буквосочетанием *wh.*

9. Чтобы произнести [ŋ], довольно широко откройте рот и сделайте вдох через нос, затем, сохраняя это положение органов речи, дайте голос, выдыхая воздух через нос. Кончик языка упирается в нижние зубы.

10. Звук [h] значительно отличается от русского [х] и представляет собой скорее легкое придыхание. Именно поэтому при произнесении русских имен собственных, содержащих звук [х], англичане заменяют его на [k]: Chekhov, Palekh.

11. Звуки [b], [p], [g], [k], [d], [t] произносятся с бóльшим усилием, чем русские; они еще называются взрывными согласными. Звуки [p], [t], [k]

(особенно перед ударными гласными в начале слова) произносятся с придыханием.

12. При произнесении [t] и [d] кончик языка упирается в альвеолы (бугорки над верхними зубами), а не в зубы, как в русском языке.

2. *Прочтите следующие слова по транскрипции*.

1. [kæt], [blæk], [pʊt]/[[put], [bʌs], [‘lɪtl], [ten], [nɔt]/[nɒt], [‘peɪpə], [‘ʤenərəl], [fɑ:], [mi:t], [fɔ:], [mɔ:], [ju:], [gɜ:l]/[gə:l], [pɜ:l], [deɪ], [teɪk], [laɪk],[ə’baut], [faund], [nəu], [rəuz], [bɔɪ], [nɪə], [hɪə], [skweə], [keə]/[kɛə], [θɪŋ], [θɪŋk], [ðeɪ], [ðeə]/[ðɛə], [ʃuə], [ʃi:], [‘gærɑ:ʒ], [reɪ’ʒi:m], [ʧeə]/[ʧɛə], [ʤeɪmz], [peɪʤ], [hæt], [jʌŋ], [wɔt]/[wɒt], [‘wɪndəu]/[‘windəʊ].

2. [‘θrɒtl], [θrəut], [gɜ:θ], [wɜ:θ], [‘ðɛəfɔ:], [‘weðə], [ˌkɒrɪ’ɒgrəfɪ], [ɪ’lektrɒn], [ˌðɛərə’pɒn], [ʧɒp], [ʧu:z], [‘ɪsju:], [ˌelek’trɪsətɪ], [ˌelek’trɒnɪks], [‘kwɒlətɪ], [kwɪt], [wɛə’revə], [ɪ’senʃ(ə)l], [‘vaɪə], [vi:ə], [ˌvɛərɪ’eɪʃ(ə)n], [ʤi:n], [‘ʤenərəs], [‘ʤenjuɪn], [‘ʤeləs], [‘ʤʌʤ], [‘ʤesʧə], [ˌʤenə’reɪʃ(ə)n], [kən’vɜ:ʤ(ə)n(t)s], [‘ʤen(ə)r(ə)laɪzd], [‘vɛərɪəs], [‘vælɪd], [θru’aut], [‘kʌrənt], [daɪ’vɜ:s], [‘ʤu:əl], [‘aɪðə], [ʧɛə], [‘ɪʃu:], [ˌθɪərə’tɪʃ(ə)n], [ɪn’ʃuər(ə)ns], [θeft].

Правила чтения

Большая часть английских согласных произносится в соответствии со следующими правилами.

Чтение отдельных согласных

c	[s]	перед e, i, y	place, cycle, pencil
	[k]	в остальных случаях	come, can, clock, cut,
	[ʃ]	перед i + гласная (в безударном положении)	special, social, efficient
g	[dʒ]	перед e, i, y	wage, region; искл. give, get
	[g]	в остальных случаях	glad, got, big
s	[s]	в начале слова и в конце слова после глухих согласных	sun, same, its, books, keeps
	[z]	между гласными; в конце слова после гласных и звонких согласных	rise, nose, rose, boys, plays, is, lands
x	[gz]	перед ударной гласной	exam, exist
	[ks]	в остальных случаях	text, six, box
j	[dʒ]	перед гласными	job

Чтение согласных в сочетаниях с буквой ***h***

sh	[ʃ]		fresh, shape
ch	[tʃ]	в словах английского происхождения	French, check, bench, much
	[k]	в словах латинского и греческого происхождения	mechanic, chemistry, school
	[ʃ]	в словах французского происхождения	machine
gh	–	после ударной гласной	night, brought
	[f]	в конце слова	enough, rough
th	[ð]	(звонкий звук) в служебных словах и между двумя гласными	this, these, that, with, bathe, mother
	[θ]	(глухой) в остальных случаях	thick, thin, three, tenth, teeth, depth
wh	[h]	перед «*o*»	whom, whole
	[w]	в остальных случаях	when, why
tch	[tʃ]		switch, pitch
ph	[f]		physics, phone

Сочетания, которые чаще всего встречаются в суффиксах существительных

tion	[ʃn]		dictation
sion	[ʃn]	после согласной	tension
	[ʒn]	после гласной	division
ture	[tʃə]		fracture, future
sure	[ʃ]	после согласной	pressure
	[ʒ]	после гласной	measure, treasure

Прочие сочетания

wr	[r]		write, wrote
qu	[kw]		quite, quick
kn	[n]		knife, knee
nk	[ŋk]		sink, ink, sunk
ng	[ŋg]	перед звуками [l, r, w]	single, language, angry
	[ŋ]	в остальных случаях	song, long, hang, bring

3. *Прочтите данные пары слов.*

Sin – thin; sink – think; wise – with; zip – this; this – myth; that – depth; rice – rise; caps – cabs; wine – vine; went – vent; back – bag; lack – lag.

4. *Прочтите слова, обращая внимание на правила чтения согласных.*

Educational center, technical, located, location, national, building, discharge, theory, atmosphere, structure, switching, channel, television, management, further, branch, excellent, lecture, gym, equipment, experiment, journal, region, complex, specialized.

Чтение гласных

Гласные в английском языке читаются по-разному в зависимости от положения в слове. Если гласная буква стоит **под ударением** и **не вступает в сочетание с другой гласной**, то она чаще всего произносится в соответствии с типом слога.

Выделяют **четыре типа слога.**

I тип – открытый слог:

1) заканчивается на гласную – m**e,** g**o**;

2) после гласной стоит одна согласная, а затем гласная, чаще всего – непроизносимая «**e**»: l**a-**ke, n**o-**se, v**i-**ne.

Гласная читается так, как она называется в алфавите.

II тип – закрытый слог:

1) после гласной стоит одна согласная, а далее нет гласной – p**o**t;

2) после гласной стоят две или более согласных, за которыми может следовать гласная – l**i**ttle.

Все гласные обозначают краткие звуки**.**

III тип – «гласная + r»:

1) после гласной стоит **r**, на которую слово заканчивается – c**ar**;

2) после группы «гласная + r» стоит согласная – g**i**rl.

Все гласные обозначают долгие звуки.

IV тип – «гласная + r + гласная».

После группы «гласная + r»

1) всегда стоит гласная, не читаемая «e» – c**are**, h**ere**

2) или читаемая гласная – M**ary**.

Гласные (кроме «o») обозначают дифтонги, **i** – трифтонг.

Определив тип слога, Вы сможете прочитать большинство одиночных ударных гласных даже в незнакомых словах.

Чтение гласных в четырех типах слога

Гласная	**I тип – открытый слог**	**II тип – закрытый слог**	**III тип – «гласная + r»**	**IV тип – «гласная + r + гласная»**
a	**[ei]** t**a**ke, skate, brave	**[æ]** l**a**mp, that, hand	**[a:]** c**a**r, charge, march	**[ɛə]/[eə]** squ**a**re, care
e	**[i:]** th**e**se, Swede, cede	**[e]** d**e**sk, spend, text	**[ə:]/[з:]** h**e**r, term, nerve	**[iə]** h**e**re, sphere
u	**[ju:]** h**u**ge, cube, dupe	**[ʌ]** b**u**t, bulb, bus	**[ə:]/[з:]** p**u**rl, hurt, burn	**[(j)uə]** c**u**re, lure
i/y	**[ai]** dr**i**ve, wide, size	**[i]** s**i**t, little, gyp	**[ə:]/[з:]** g**i**rl, first, bird	**[aiə]** f**i**re, tire, hire
o	**[ou]/[əu]/[əʊ]** st**o**ne, slope, woke	**[ɒ]/[ɔ]** st**o**p, spot, box	**[ɔ:]** f**o**rm, storm, north	**[ɔ:]** m**o**re, store, core

5. *Пользуясь таблицей «Чтение гласных в четырех типах слога», прочтите следующие слова и обратите внимание на чтение гласной в соответствующих типах слога*.

A: plate, flag, spark, fare. **O**: close, job, short, spore. **E**: scene, pen, serve, here. **U**: use, must, curve, pure. **Y/I**: type, hint, Byrd, wire.

Далеко не всегда на чтение гласной влияет только тип слога. Рассмотрим основные случаи изменения чтения ударных гласных в зависимости от расположения в слове.

*Чтение гласной **a** в зависимости от сочетания с согласными*

Расположение буквы в слове	Транскрипция	Пример
Перед «**l**+ согл.»	[ɔ:]	also, fall, talk
Перед нечитаемой «**l** + согл. m, f, v»	[a:]	half, calm
Перед нечитаемой «**l** + др. Согл.»	[ɔ:]	chalk, walk, talk, always
Перед «**n** + согл.»	[a:]	answer, can't. **But!** hand
Перед «**s** + согл.»	[a:]	class, last, task
Перед **th**	[a:]	bath, father
Перед «**f** + согл.»	[a:]	staff, craft
После **w**	[ɔ:][ɒ]	want, wall

6. *Пользуясь таблицей выше, прочтите следующие слова.*

Tall, plant, ask, was, call, father, all, small, fast, pass, install, shaft, warm, path, rather.

*Чтение гласной **a** в сочетаниях с гласными и **w***

aw	**au**	**ai**	**ay**
[ɔ:]	[ɔ:]	[ei]	[ei]
law, saw	auto, autumn	plain, pain	may, say

7. *Пользуясь таблицей выше, прочтите следующие слова.*

Flaw, fault, audio, launch, author, main, domain, draw, mail, play, way.

*Чтение гласной **e** в различных сочетаниях*

ea перед d, l (th)	**ear** перед согласной	**ei** перед gh	**eu, ew**	**ey**
[e]	[ə:]	[ei]	[(j)u:]	[ei]
bread health weather	earth learn heard	eight weight weigh	few new neutral	convey they **But!** key [i:]

8. *Пользуясь таблицей выше, прочтите следующие слова.*

Head, spread, death, earn, search, heard, grew, few, grey, news, thread, steady.

*Чтение гласной **i** в различных сочетаниях*

ie	**igh, ign**	i + ld	**i** + nd
[i:]	[ai]	[ai]	**[**ai]
brief, chief, field	light, might, sign	child, wild, mild	kind, find, mind

9. *Пользуясь таблицей выше, прочтите следующие слова.*

Design, believe, assign, high, piece, bright, resign, right, highlight, remind.

*Чтение гласной **o** в различных сочетаниях*

Сочетание	Транскрипция	Пример
oi, oy	[ɔi]	boil, oil, toil, boy, joy, toy
o + ld	[ou]	bold, gold, hold
oo + k	[u]	book, look, hook
oo	[u:]	moon, soon, too
oor	[ɔ:]	door, floor. **But!** poor
ou	[au]	found, pound, round
ough + t	[ɔ:]	ought, brought, fought
ough	[ʌf]	enough
our	[ɔ:]	course, source, resource
O + m, n, th, v	[ʌ]	some, none, mother/cover
ow	[ou]	blow, slow, below
ow	[au]	down, cow, how
w + or	[ɔ:]	work, word, world

10. *Пользуясь таблицей «Чтение гласной **o** в различных сочетаниях», прочтите следующие слова*.

Load, flow, grow, road, round, sound, down, about, mouse, loop, cool, worm, worse, mountain, son, show, how, company, bought, founder, tool, coin, sought, rough, tough, other, reboot.

Чтение окончаний и суффиксов

В английском языке очень мало окончаний, поэтому особенно важно помнить о правильном их произношении.

I. Окончание **-(e)s** *3-го лица единственного числа глагола в Present Simple* совпадает по форме и чтению с *окончанием большинства существительных во множественном числе*. Запомните правила чтения -(e)s.

Произношение окончания – (e)s

[s] после глухих согласных	[z] после звонких согласных и гласных	[iz] поле шипящих и свистящих согласных* [s] [z] [ʃ] [ʒ] [ʧ] [ʤ] [ks]
likes laughs asks wakes eats stops	answers plays stays flies goes loves	watches catches washes matches boxes glasses *после этих звуков окончание всегда имеет форму -es

II. Суффикс **-ed** времени *Past Simple* и причастия II (*Participle II* = 3-я форма глагола), используемый для стандартных (правильных) глаголов произносится в зависимости от предшествующего звука. Запомните правила чтения **-ed**.

*Произношение **-ed***

[t] после глухих согласных	[d] после звонких согласных и гласных	[id] после звуков [t] и [d]
asked liked stopped washed watched passed laughed surfed talked	played ignored planned arrived loved returned preferred travelled achieved	wanted traded skated corrected selected protected connected communicated decided

11. *Пользуясь таблицами выше, прочтите следующие слова.*

A. Students, machines, sales, courses, tubes, scientists, viruses, bugs, rays, receivers, plans, controls, allows, protects, corrects, thinks.

B. Lived, developed, started, introduced, realized, accepted, changed, influenced, created, provided, moved, carried, transmitted, finished, corrected.

12. *Произнесите и запомните список слов, при чтении которых чаще всего допускаются ошибки*.

верно	неверно	Список слов
[æ]	[a]	chat, spam, scanner, hacker, camera, antivirus, android, macro-, nano-, avatar, add-on, atom, gadget, as
[ei]	[a]	data, calculator, operator, generator, navigator, modulator
[ʌ]	[y]	function, consultant, industry, instruction, result, publish, structure, illustrate, public, customer, multi-, sub-
[ʌ]	[o]	company, front, other, cover, some
[ai]	[и]	idea, virus, client, diagram, priority, satellite, via, binary, bio-, biology, cyber-, hyper-, micro-, supply, apply, reply, rely, identify, amplify
[ou]	[o]	control, protocol, process, photo, program, radio, video
[ɔ:]	[ay]	author, authorization, audio, audible, automatic, launch, fault
[ɔ:]	[a]	call, alternative, install
[dʒ]	[г]	general, generate, logic, register, digital, intelligent
[s]	[ц]	centre, medicine, process, access, cell
ударение		ec'ommerce, comm'and, 'engine, r'egister, contr'ol, c'ontent, 'access

2. СЛОВООБРАЗОВАНИЕ

В английском языке используются несколько способов словообразования: аффиксация (при помощи префиксов и суффиксов), конверсия и словосложение (рис. 1).

micro – process – or

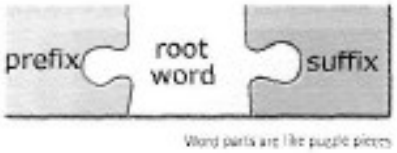


Рис. 1

Значения наиболее распространенных префиксов

В научно-технической литературе чаще всего встречаются префиксы (приставки), приведенные ниже.

Префиксы с отрицательным значением

Префикс	Пример	Перевод
anti [ˊænti-]	antivirus	антивирус
in-, im-, il-, ir-	illogical, invisible	нелогичный, невидимый
mis-	misunderstand	неправильно понять
non– [nɔn]	non-volatile	энергонезависимый
un– [Λn]	unformatted	неформатированный

Префиксы, обозначающие местоположение

Префикс	Пример	Перевод и пояснение
extra– (вне, дополнительно)	extranet	сеть Экстранет (корпоративная сеть для взаимодействия с внешними партнерами, и т. п.)
inter– (между)	interaction, Internet	взаимодействие, сеть Интернет
intra– (внутри)	intranet	сеть Интранет (корпоративная внутренняя компьютерная сеть)
tele– (на расстоянии)	teleconference	телеконференция (конференц-связь)
trans– [træn]/[trɑːn-] (через)	transatlantic	трансатлантический
sub– [sʌb] (под, ниже)	submarine	подводный

Префиксы, обозначающие размер, меру

Префикс	Пример	Перевод и пояснение
micro– [‘maikrou]	microbrowser	микробраузер (для мобильных устройств)
semi– [‘semi]	semiconductor	полупроводник
super-	supercomputer	суперкомпьютер (сверхмощный, быстрый)
over– (пере-, сверх-)	overuse	злоупотреблять
under– (недо-, ниже нормы)	underestimate	недооценивать, занижать

Некоторые другие значения префиксов

Префикс	Пример	Перевод
cyber– [‘saibə]	cyberspace	киберпространство
de– (противоположное действие)	decrypt	расшифровывать
dis– (раз-, рас-, дез-)	disconnect	разъединять
e– (электронный)	e-commerce	электронная коммерция
en– (em-)	embedded encrypt	встроенный шифровать
re– (снова, вновь)	recharge	перезаряжать
up–	update	обновлять

1. *Подберите к словам правильный перевод.*

1. Enable (v)	a) устранять ошибки
2. Debug (v)	b) магистрант или аспирант
3. Undergraduate (n)	c) активировать
4. Disable (v)	d) недоставка
5. Postgraduate (n)	e) студент вуза
6. Reassemble (v)	f) дезактивировать
7. Non-delivery	g) удаленная работа
8. Teleworking	h) собрать заново

2. *Переведите слова на английский язык, используя подсказки.*

Междугородный (city), повторно обрабатывать (process), зарядить не полностью (charge), противовоздушный (aircraft), зашифровывать/расшифровывать (code), повышать качество (scale), усовершенствовать (grade), перегрев (heat), внутриклеточный (cellular), полуавтоматический (automatic).

Значения суффиксов по частям речи

Основные суффиксы существительных (nouns)

Суффикс	Значение суффикса	Пример	Перевод
-er/-or	профессия, действующее лицо, устройство	programmer visitor scanner	программист посетитель сканер
-ant	профессия	assistant	ассистент
-ian	профессия	technician	техник
-ist	профессия	scientist	ученый
-age	действие, состояние	shortage	нехватка
-ance/-ence	действие, состояние	assistance	помощь
-ing*	процесс, действие, состояние	pharming	фарминг – метод интернет-мошенничества
-ion/-tion/-ation	процесс, действие, состояние	compression connection	сжатие связь
-ment	действие, его результат	management	управление
-ty	качество или состояние	density	плотность
-ness	качество или состояние	effectiveness	эффективность
-ship	качество или состояние	partnership	партнерство
-ics	название науки, отрасли	physics	физика
-ware	изделия одного вида	software	программное обеспечение

* -ing также может быть суффиксом причастия или герундия

Основные суффиксы прилагательных (adjectives)

Суффикс	Значение суффикса	Пример	Перевод
-able, -ible	возможность действия	portable accessible	портативный доступный
-al	наличие качества	electrical	электрический
-ant, -ent	наличие качества	resistant different	сопротивляющийся различный
-ful	наличие качества	colourful	красочный
-ive	наличие качества, свойства	active	активный
-less	отсутствие качества	wireless	беспроводной
-ous	наличие качества	famous	известный

Основные суффиксы наречий (adverbs)

Суффикс	Пример	Перевод
-ly	greatly	очень, значительно
-wards	backwards	назад, обратно

Основные суффиксы глаголов (verbs)

Суффикс	Пример	Перевод
-ate [-’eit]	graduate	окончить вуз
-en [-(ə)n]	harden	закаливать
-fy [-’fai]	intensify	усиливать
-ize, -ise [-’aiz]	specialize	специализироваться

Обратите внимание: при добавлении суффикса может измениться ударение!

Ph’**o**tograph phot’**o**grapher photogr’**a**phic photogr’**a**phically

3. *Прочтите и переведите слова.*

Nouns	Verbs	Adjectives	Adverbs
activity	activate	active	actively
magnet, magnetism	magnetize	magnetic	magnetically
digit, digitizer, digitizing	digitize	digital	digitally
electricity	electrify	electrical	electrically
computer, computation	compute, computerize	computable, computational	computationally

4. *Закончите предложения, используя слова в скобках с нужными суффиксами.*

1) I’ll email my report to you as an _____ (attach).

2) The growth of the Internet has increased the need for effective data _____ (secure).

3) Aircraft flight _____ is used to train pilots (simulate).

4) The field of _____ studies the ways people and machines process information (cybernetics).

5) Niels Bohr was one of the most distinguished _____ of all time (physics).

6) Today we can see the _____ of telecommunications, IT and media at a device level (converge).

5. *Переведите на английский язык, используя слова в скобках и необходимые суффиксы.*

Производить, производитель, производство, продукция, продуктивный (produce); потреблять, потребитель, потребление, потребляемый (consume); обмениваться информацией, коммуникационное устройство, передача (связь) (communicate); управлять, устройство управления, управление (администрирование), легко управляемый (manage), обрабатывать, устройство для обработки, обработка (process).

Конверсия и словосложение

Конверсия – это один из самых распространенных способов словообразования в современном английском языке, который заключается в образовании одной части речи от основы другой без изменения основной формы.

Примеры конверсии

Nouns	Verbs	Adjectives
water – вода	water – поливать	
control – контроль/ управление	control – контролировать/управлять	
	empty – освобождать, очищать	empty – пустой, свободный
	secure – обеспечивать защиту	secure – защищенный

Хотя о значении таких слов легко догадаться, зная значение одной части речи, *при переводе специальной лексики необходимо пользоваться специальными словарями*!

6. *Переведите на русский язык, пользуясь словарем и давая два или более вариантов.*

Graduate, switch, wire, process, file, scan, complete, model, power, link, access.

7. *Переведите на русский язык, обратите внимание на выделенные слова.*

1. Companies can offer **secure** credit card transactions over the Internet. 2. You should **secure** your wireless router to prevent unwanted access to your network. 3. Most **networks** are linked with cables, wires or radio waves. 4. The company will need to **network** together more personal computers. 5. There are two separate power **feeds** coming into the data center. 6. You need to **feed** the data into the computer for processing.

Следующий способ словообразования – ***словосложение***, т. е. соединение двух и более слов в одно. Такие слова пишутся по-разному: в два слова, через дефис или слитно: *clip art/clip-art/clipart.*

Примеры словосложения

Сложные существительные		Сложные прилагательные	
noun + noun	bandwidth – полоса пропускания, website	noun + past participle	voice-activated – запускаемый голосом
adjective + noun	smartphone	noun + present participle	time-saving – экономящий время
verb/verbal noun + + noun	scrollbar – прокрутка, recording amplifier – усилитель записи	noun + adjective	hands-free – без использования рук
verb + particle	add-on – расширение, setup – установка		

Следует отметить тот факт, что при словосложении может иметь место соединение частей слов:

transistor (*transfer resistor*) – транзистор;

modem (*modulator* + *demodulator*) – модем;

codec *(coder* + *decoder*) – кодек, кодер/декодер;

transceiver (*transmitter* + *receiver*) – трансивер, приемопередатчик.

Особое внимание необходимо уделять терминам-акронимам, т. е. терминам, которые образованы из начальных букв слов:

radar (*radio detection* + *ranging*) – радар;

laser (*light amplification by stimulated emission of radiation*) – лазер;

UPS (*uninterrupted power supply*) – источник бесперебойного питания;

IP (*Internet protocol*) – межсетевой протокол.

8. *Переведите на русский язык, пользуясь словарем.*

A silicon chip, a search engine, a web portal, a clipboard, a short cut, a laptop, a back-up, a spreadsheet, a feedback, a rollout, a helpdesk, a database, a start-up, market-leading, space-saving, cost-saving, hand-written, menu-driven, stand-alone.

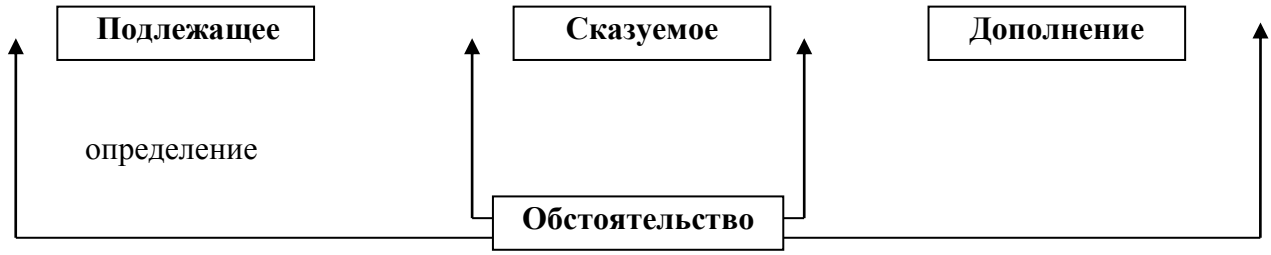
II раздел
КУРС ПРАКТИЧЕСКОЙ ГРАММАТИКИ

1. ПОРЯДОК СЛОВ В АНГЛИЙСКОМ ПРЕДЛОЖЕНИИ

Английский язык относится к группе аналитических языков. Это значит, что в английском языке, в отличие, например, от русского, грамматические связи между различными членами предложения (сказуемым, подлежащим, дополнением, обстоятельством, определением) осуществляются не с помощью падежей, а посредством служебных слов (артиклей, предлогов, вспомогательных слов) и фиксированного порядка слов в предложении.

1.1. Порядок слов в утвердительном и отрицательном предложениях

Порядок слов в английском утвердительном предложении в общем виде может быть представлен схемой, из которой видно, что подлежащее, сказуемое и дополнение располагаются в строго фиксированной последовательности относительно друг друга.



Обстоятельство может находиться практически в любой части предложения, а определение располагается рядом с тем членом предложения, к которому оно относится, и входит в структуру предложения только в составе этого члена.

Подлежащее	Сказуемое	Дополнение с определением	Обстоятельство
We	use	our smartphones	every day
Мы	*пользуемся*	*нашими смартфонами*	*каждый день*

В отрицательном предложении порядок слов такой же. Разница в том, что в отрицательном предложении используется отрицательная частица ***not*** или слова, имеющие негативное значение, например: ***never*** (*никогда*), ***nowhere*** (*никуда, нигде*), ***nothing*** (*ничто*), ***nobody*** (*никто*), ***no*** (*никакой*).

Подлежащее	Сказуемое	Дополнение
I	will **not** use	this program
Я	*не буду использовать*	*эту программу*
The cable	does **not** transmit	any signals
Кабель	*не передает*	*сигналы*

Место обстоятельства, выраженного наречием

Трудности часто вызывают обстоятельства, выраженные наречием. Рассмотрим основные правила.

А. Обстоятельство места

Находятся после прямого дополнения или сказуемого.

Подлежащее	Сказуемое	Прямое дополнение	Обстоятельство
I	need	that machine	**here**
Мне	*нужен*	*этот станок*	*здесь*

В. Обстоятельство времени

Обстоятельство времени обычно располагается в конце предложения, но часто оно может находиться и в начале.

Подлежащее	Сказуемое	Косвенное дополнение	Прямое дополнение	Обстоятельство времени
I	will send	you	the letter	**tomorrow**
Я	*отправлю*	*тебе*	*письмо*	*завтра*

Обстоятельство времени	Подлежащее	Сказуемое	Косвенное дополнение	Прямое дополнение
Tomorrow	I	will send	you	the letter

C. Обстоятельства времени, обозначающие частоту действия

Особый случай – обстоятельства, обозначающие частоту действия, например: **always** (*всегда*), **seldom** (*редко)*, **usually** (*обычно*), **never** (*никогда*) и т. д.

В предложениях со сказуемыми без вспомогательных и модальных глаголов, **исключая глагол *to be***, такие обстоятельства располагаются перед сказуемым.

Подлежащее	Обстоятельство	Сказуемое	Дополнение
I	**often**	download	applications
Я	*часто*	*загружаю*	*приложения*

Если сказуемое **включает глагол *to be*** в одной из простых форм, т. е. без вспомогательного или модального глагола, обстоятельство ставится **после *to be***.

Подлежащее	**Сказуемое *to be***	**Обстоятельство**	**Обстоятельство места**
We	are	**usually**	here
Мы		*обычно*	*здесь*
Подлежащее	**Глагольная часть сказуемого**	**Обстоятельство**	**Именная часть сказуемого**
They	are	**rarely**	late
Они		*редко*	*опаздывают*

Если в составе сказуемого есть вспомогательный или модальный глагол, то обстоятельство должно стоять после него.

Подлежащее	Вспомогательный/ модальный глагол	Обстоятельство	Основной глагол	Дополнение
The user	has	**never**	run	this antivirus program
Пользователь		*никогда*	*не запускал*	*эту антивирусную программу*
I	will	**always**	use	this antivirus program
Я	*буду*	*всегда*	*использовать*	*эту антивирусную программу*
We	can	**usually**	call	the technician
Мы	*можем*	*обычно*	*позвонить*	*технику*

1.2. Порядок слов в вопросительном предложении

A. Общий вопрос (general question)

В вопросительном предложении без вопросительного слова вспомогательный глагол выносится в начало предложения, за которым следуют подлежащее и основной глагол. На такие вопросы мы отвечаем «да/нет».

Do you need my assistance? – *Вам нужна моя помощь*?

Did your brother pass the exam? – *Твой брат сдал экзамен*?

B. Альтернативный вопрос (alternative question)

Альтернативный вопрос похож по структуре на общий вопрос, но в этом типе вопроса обязательно присутствует слово **or**, так как он предполагает выбор из предложенных вариантов.

Is the cellphone you bought silver **or** black? – *Сотовый телефон, который ты купил, серебристый или черный?*

C. Специальный вопрос (special question)

Такие предложения начинаются с вопросительных слов, например: what (что, какой), who (кто), which (какой из), when (когда), why (почему), where (где, куда), how (как) и др. После вопросительного слова ставится вспомогательный или модальный глагол, затем следуют подлежащее и основной глагол.

What does she read? – *Что она читает?*

What can we do? – *Что мы можем делать?*

When will you solve this problem? – *Когда ты решишь эту проблему?*

Разновидностью специального вопроса является ***вопрос к подлежащему*** (subject). В этом случае на первое место ставятся слова **What/Who**, которые выступают в предложении в функции подлежащего, затем следует сказуемое. Обратите внимание на то, что во временах Present и Past Simple в таких вопросах не используется вспомогательный глагол do/does/did!

What happened? – *Что случилось?*

Who reads this book? – *Кто читает эту книгу?*

D. Разделительный вопрос (disjunctive/tag question)

Разделительный вопрос используется для выражения удивления, сомнения или получения подтверждения. Первая часть вопроса выглядит как обычное предложение, вторая – как краткий общий вопрос. Если первая часть утвердительная, то вторая будет отрицательной, и наоборот.

You like programming, don't you? – *Ты любишь программирование, не так ли?*

You don't like programming, do you? – *Ты не любишь программирование, не так ли?*

You have done your work, haven't you? – *Вы сделали вашу работу, не так ли?*

It is not so easy to translate that text, is it? – *Нелегко перевести тот текст, не правда ли?*

Обратите внимание на прямой порядок слов в придаточном предложении в функции дополнения.

I know ***where you live***. – *Я знаю, где ты живешь.*

I don't know ***where you live***. – *Я не знаю, где ты живешь.*

Do you know ***where I live***? – *Ты знаешь, где я живу?*

Частая ошибка заключается в том, что придаточное предложение, которое начинается с союзов ***who***, ***why***, ***when***, ***where***, строится, как вопросительное предложение.

Неправильно: I don't know **why did she call me**.

Правильно: I don't know **why she called me**.

1.3. Порядок слов в повелительном предложении

Обратите внимание на образование глагольных форм и порядок слов в повелительном предложении. Для 2-го лица единственного и множественного числа повелительное наклонение образуется с помощью инфинитива без частицы **to**. В отрицательных предложениях используются вспомогательный глагол ***do*** и частица ***not***.

Go – *иди(те).* **Take** the pen – *возьми(те) ручку.* **Do not** take the pen – *не берите ручку.*

Для 1-го и 3-го лица единственного и множественного числа повелительное наклонение образуется с помощью глагола ***let***, за которым следуют личное местоимение в объектном падеже и инфинитив без частицы **to**.

Let me go. – *Позвольте мне уйти*. **Let** us (= **let's**) go. – *Давайте пойдем*. **Let** her take the bag. – *Разрешите ей взять сумку/Пусть она возьмет сумку.* **Do not let** the process start. – *Не давайте процессу начаться*.

Фиксированный порядок слов является часто единственным критерием разграничения частей речи и членов предложения в английском языке. Английское слово в зависимости от его места в предложении может выполнять различные функции. Например:

A. We **must** carry out this experiment. – *Мы должны провести этот эксперимент* (must – часть сказуемого, модальный глагол).

B. There is **a must** in it. – *В этом есть необходимость* (a must – дополнение, существительное).

Упражнение 1. Переведите предложения, определяя, каким членом предложения и частью речи являются выделенные слова.

1. This hardware *features* extraordinary stability. 2. *These features* are assigned to the stability of systems involved. 3. *The increase* of operating speed is achieved by using special kind of gadget. 4. The speed *is increased* by using a very cheap technology. 5. The book was concerned with *the subject* of natural science and its applications. 6. An instrument which reads correctly at one frequency *may be subjected* to considerable errors at other frequencies.

Упражнение 2. Расположите слова в предложении в правильном порядке.

1. Usually at 10 o'clock / out of the garage / in the morning / drives / his bike / Fred.
2. A shower / after dinner / often / Mr. Lewis / takes.
3. A parking place / near the library / we / find / seldom.
4. Fly / my parents / to Australia / sometimes / I / in winter / and.
5. Enjoys / very much / swimming / in the pool / always / Mary.
6. Hardly / last year / could / skate / I.
7. Is / near / house / there / new / a / our / cinema.
8. Got / my / problems / I / with / have / home-task / some.
9. Well / think / your / very / I / don't / sister / drives.
10. To / parents / once / the theatre / month my / a / go.
11. His / car / two / ago / Jim / sold / years.
12. Been / to / India / Mike / has / year / already / this.
13. Lunch / never / weekdays / she / has / on.

Упражнение 3. Выберите правильный вариант.

1. Could you tell us what time *a*) it is; *b*) is it; *c*) does it?
2. Do you know when *a*) our bus leave; *b*) our bus leaves; *c*) does our bus leave)?
3. I wonder if *a*) he is a doctor; *b*) is he a doctor; *c*) a doctor is he.
4. Do you remember what *a*) did Jane wear; *b*) Jane wear; *c*) Jane wore yesterday?
5. Do you think *a*) she can cook well; *b*) can she cook well; *c*) she can well cook?

Упражнение 4. Переведите на английский язык, обращая внимание на порядок слов.

1. Я дал ему эту книгу. 2. Это письмо я отправил своему другу. 3. Завтра мы пойдем в кино. 4. Я обычно читаю газеты дома. 5. К сожалению, мы вместе очень редко. 6. Он никогда не читал эти книги. 7. Она ни-

когда не была заграницей. 8. Что он изобретает? 9. Что это? 10. Кто проектирует этот прибор? 11. Что означает этот термин? 12. Когда был изобретен компьютер? 13. Я не знаю, почему она пришла. 14. Кто разработал этот проект? 15. Где используются электронные устройства? 16. Я не знаю, где используются транзисторы. 17. Я не понимаю, почему мой компьютер такой дорогой. 18. Почему развитие электроники называется революцией? 19. Кто мог сделать это устройство? 20. Покажи мне этот прибор. 21. Давайте загрузим это приложение. 22. От чего зависит скорость сигнала? 23. Не позволяй ему стирать эту важную информацию.

1.4. Порядок слов и логико-смысловое членение предложения

Очень важно выбрать при переводе правильный порядок слов с учетом логико-смыслового членения предложения. Следует заметить, что логико-смысловое членение предложения в русском и английском языках часто не совпадает. В русском языке (особенно в научно-технических текстах) наиболее важные в логико-смысловом отношении отрезки предложения, которые, как правило, содержат новую информацию, обычно стоят в конце предложения. И наоборот, в английских научно-технических текстах наиболее весомые с точки зрения смысла части предложения нередко располагаются ближе к началу предложения, например:

A conductor of any kind carrying an electric current, **a magnetic field** is set up about that *conductor.*

Первая часть этого предложения до запятой представляет собой конструкцию «обособленный причастный оборот», и мы можем перевести ее следующим образом: *Когда проводник любого типа проводит электрический ток…*

При переводе второй части предложения следует обратить внимание на порядок слов, а именно: слово «conductor», хотя и стоит в конце предложения, уже упоминалось в первой части предложения и, следовательно, не содержит новой и самой весомой в смысловом отношении информации. Поэтому при переводе мы поместим его ближе к началу второй части предложения, освободив в конце место для более важного с точки зрения смысла словосочетания **a magnetic field**.

Когда проводник любого типа проводит электрический ток, вокруг этого проводника устанавливается ***магнитное поле***.

Упражнение 5. Выберите правильный порядок слов при переводе выделенного предложения в контексте всего текстового отрезка.

In 1914, following a year as a lecturer at the University *of Copenhagen* Bohr returned to Manchester, remaining there until 1916, when he was made professor of Theoretical Physics at the University *of Copenhagen*. **In 1920, largely due to Bohr's efforts, the Institute of Theoretical Physics was established *at Copenhagen***.

1.5. Случаи отступления от прямого порядка слов в английском предложении (инверсия)

Как уже говорилось, в английском языке смысловая насыщенность ослабляется к концу предложения. Поэтому в начале следует ставить тот член предложения, который необходимо особенно эмоционально или логически выделить. Перестановка слов в предложении с целью смыслового выделения разных его членов называется инверсией, например:

In Table 3 are given the results of the new experiment. *В таблице 3 представлены результаты нового эксперимента.*

Нарушения прямого порядка слов встречаются в предложениях с уступительными союзами: **though**, **although** – *хотя*; наречиями **here**, **only** – *только*, **never** – *никогда* и др.; сложными союзами **neither** … **nor** – *ни ... ни*, **hardly** … **when** – *едва ... как* и др. В этих предложениях инверсия используется прежде всего для улучшения ритма предложения, например:

Never in this case will speed remain constant. – *Никогда в этом случае скорость не будет оставаться постоянной.*

Нарушения обычного порядка слов могут также иметь место в некоторых грамматических конструкциях, в частности, **в бессоюзных условных придаточных предложениях**, например:

Were our computers not very powerful we would not be able to download some applications. – ***Если бы*** *у нас были не очень мощные компьютеры, мы бы не смогли загрузить некоторые приложения.*

Упражнение 6. Объясните порядок слов в предложениях с инверсией и переведите эти предложения.

1. Important for this result is temperature. 2. Of great importance in this case is type of software used. 3. A gradual improvement in productivity brought these innovations. 4. Faraday was no mathematician, nor was Hamilton much of a physicist. 5. Also confident information can be stolen. 6. They finished their work yesterday. So did he. 7. Closely relating to this problem is the problem of encoding. 8. Here is the magazine you asked for. 9. Seldom has he felt so pleased with his results. 10. Should you happen to be there, come to see it by all means.

2. СКАЗУЕМОЕ (THE PREDICATE)

2.1. Распознавание сказуемого в предложении

Сказуемым называется член предложения, связанный с подлежащим и отвечающий на вопрос: *что оно делает?*/*что с ним делается/каково оно*? Сказуемое в предложении всегда занимает место после подлежащего и может состоять из одного или нескольких компонентов.

Найти сказуемое помогают следующие формальные признаки:

1) вспомогательные и модальные глаголы, всегда являющиеся первым компонентом сказуемого (явные сказуемые): am, is, are, was, were, do, does, did, have, has, had, will, should, would, can, may, might, must, и др.;

2) три неявных признака сказуемого (имеющие их слова могут быть сказуемыми лишь при наличии согласованного подлежащего):

a) окончание -s (-es) – если слову предшествует подлежащее в третьем лице единственного числа;

b) -ed – если перед словом стоит активное подлежащее, в остальных случаях это – Participle II в одной из характерных функций (аналогично с совпадающими 2-й и 3-й формами неправильных глаголов);

c) слово, не имеющее никакого окончания. В Present Simple – если слову предшествует подлежащее 1-го, 2-го лица или 3-го лица множественного числа.

Упражнение 7. Найдите в предложениях сказуемые и определите, какими частями речи они выражены. Переведите эти предложения.

a) 1. I have a computer at home. 2. I will buy a new mobile phone. 3. I can actually[1] download many applications. 4. This cell phone is very reliable. 5. Heat[2] is a form of energy. 6. The street is mine. 7. I am in a hurry. 8. All the doors of the laboratories are closed. 9. My computer is working now. 10. My smart phone was bought two weeks ago. 11. How long have you been waiting?

b) 1. You have to develop[3] this device. 2. You are to live here for the next six months. 3. At least one radioactive isotope is known to exist for all known elements. 4. He began to tell them about his problems. 5. Everyone now began talking to us. 6. Our goal is to design this device 7. Our aim is mastering English.

Обратите внимание на 5-е и 7-е предложения, в которых вторая часть составного сказуемого выражена герундием. Как правило, герундий в качестве второй части сказуемого переводится на русский язык неопределенной формой глагола. (О герундии более подробно см. 3.2.5.)

Упражнение 8. Найдите в предложениях сказуемые и подлежащие.

1. The hunter killed the bear. The bear killed the hunter. The bear was killed by the hunter. 2. He books tickets for us. These are my books. 3. I like

coffee. He looks like his father. 4. I translated the text yesterday. The text translated was sent to us by the teacher. I can translate this text.

Упражнение 9. Определите функции выделенных слов. Скажите, какие из них являются сказуемыми. Переведите предложения.

1. Further **work** on this problem **led** to the **unexpected** results. 2. The engineer **took** the diagram **brought** by his assistant and **left** the laboratory. 3. Nobody **knows** the **causes** of the quick **rises** of temperature. 4. You can **rely** on the calculations **contained** in this report.

2.2. Образование и использование времен

2.2.1. Основные формы глагола

Форма	Способ образования	Пример
I – инфинитив (Infinitive)		to connect
II – прошедшее неопределенное время (Past Indefinite)	правильные глаголы -ed	connected
	неправильные глаголы II форма	broke
III – причастие прошедшего времени (Participle II)	правильные глаголы -ed	connected
	неправильные глаголы III форма	broken
IV – причастие настоящего времени (Participle I)	-ing	connecting breaking

Основные формы глагола – инфинитив и причастия – используются в образовании различных сложных глагольных форм (с вспомогательными глаголами).

2.2.2. Времена глаголов

*Таблица спряжения глагола **to write***
в изъявительном наклонении действительного залога

Группа времен	Настоящее (Present)	Прошедшее (Past)	Будущее (Future)	Будущее в прошедшем (Future in the Past)
Simple (Indefinite)	I write	I wrote	I will (shall) write	I (should) would write
Continuous (Progressive)	I am writing	I was writing	I will (shall) be writing	I (should) would be writing
Perfect	I have written	I had written	I will (shall) have written	I (should) would have written
Perfect Continuous	I have been writing	I had been writing	I will (shall) have been writing	I (should) would have been writing

2.2.3. Значения групп времен глаголов изъявительного наклонения и принципы образования каждой из них

Система глагольных времен в английском языке выражает не только действие в настоящем, прошедшем и будущем времени, но и отношение действия к данному моменту времени или другому действию. Основное значение этих времен разъясняется в таблице.

Группа времен	Характер действия	Указатели времени	Форма глагола
Present Simple (Indefinite)	обычное, регулярное, постоянное	*обычно*/***usually*** *всегда*/***always*** *каждый год*/***every year***	I, you, we, they ***ask*** He, she, it ***asks***
Present Continuous (Progressive)	происходит в настоящий момент; длительное или непрерывное действие, которое происходит не только в данный момент, но носит непрерывный характер	*сейчас*/***now*** *в данный момент*/ ***at the moment*** *в настоящее время*/ ***at present***	I ***am asking*** You, we, they ***are asking*** He, she, it ***is asking***
Present Perfect Continuous (Progressive)	действие, которое началось до момента речи и продолжается/ продолжалось вплоть до этого момента; важны длительность, процесс	*с ... года/* ***since 1994*** *в течение ... часов/* ***for 2 hours*** *с ... до/****from … till***	I, you, we, they ***have been asking*** He, she, it ***has been asking***
Present Perfect	действие, законченное к настоящему моменту; важен результат	*только что*/***just*** *еще*/***yet*** (в вопросах и отрицаниях) *уже/****already*** *когда-нибудь*/***ever*** *никогда*/***never*** Не употребляется в вопросах с ***when***!	I, you, we, they ***have asked (written)*** He, she, it ***has asked (written)***
Past Simple (Indefinite)	обычное, повторяющееся или единичное действие в прошлом	*вчера/****yesterday*** *в прошлом …/* ***last… (month)*** *в ...году*/***in 2018*** *… назад*/***3 days ago***	I, you, we, they, he, she, it ***asked*** (***wrote)***
Past Perfect	действие, законченное к определенному моменту в прошлом	*До 9*/***before 9*** *К 3 часам*/***by 3 o'clock***	I, you, we, they, he, she, it ***had asked (written)***
Past Continuous (Progressive)	действие происходило в указанный момент в прошлом; важна длительность	*тогда*/***at that moment*** *в 5 часов*/***at 5 o'clock*** *когда он вошел*/ ***when he came in***	I, he, she, it ***was asking*** You, we, they ***were asking***

Окончание таблицы

Группа времен	Характер действия	Указатели времени	Форма глагола
Past Perfect Continuous (Progressive)	длительное действие, которое началось до какого-либо момента в прошлом, или длилось в этот момент, или закончилось непосредственно перед ним	*в течение …/**for 3 hours/a long time**/ **2 years***	I, you, we, he, she, it, they ***had been asking***
Future Simple (Indefinite)	единичное, постоянное или повторяемое действие в будущем	*завтра*/tomorrow *в будущем году*/next year	I, we ***will (shall) ask*** you, he, she, it, they ***will ask***
Future Continuous (Progressive)	длительное действие, продолжающееся в определенный момент в будущем	*завтра в 5 часов/* ***at 5 o'clock tomorrow*** *когда ты придешь/* ***when you come***	I, we ***will (shall) be asking*** you, he, she, it, they ***will be asking***
Future Perfect	действие, которое будет завершено до указанного момента в будущем	*до звонка*/***before the bell*** *к тому времени*/***by that time***	I, we ***will (shall) have asked (written)*** you, he, she, it, they ***will have asked (written)***
Future Perfect Continuous (Progressive)	длительное действие, которое будет продолжаться в течение указанного периода времени в будущем	*в течение ... часов/**for 3 hours*** *с ... до …/**from … till***	I, we ***will (shall) have been asking*** you, he, she, it, they ***will have been asking***

Примечание 1. Глаголы, выражающие физическое восприятие и ощущения (here, notice, etc.), чувства, эмоции (like, dislike, hate, etc.), ментальные процессы (assume, consider, understand, forget, etc.) и некоторые другие глаголы (belong, contain, consist, etc.), **обычно не употребляются в Continuous**, поскольку они выражают состояния, а не действия. Однако в определенном контексте для эмоционального подчеркивания многие из этих глаголов могут употребляться в Continuous.

Something is wrong with my eyes. I'm seeing double. I think he's forgetting his German. Don't shout! I'm hearing you perfectly well.

Примечание 2. Обратите внимание на многообразие средств, которые могут служить для обозначения действия в будущем.

- Если мы решаем сделать что-то в момент говорения:

– Future Simple

What would you like to drink? – **I'll have** some tea, please.

- Если речь идет о расписании, программах и т. д.:

– Present Simple

The train **leaves** Plymouth at 10.30.

- Если уже заранее было решено делать эти вещи:

– Present Continuous

This is Tom's diary for next week.

He **is playing** tennis on Monday afternoon.
He **is having** dinner with Ann on Friday.
– Конструкция *going to (do)*
I'm **going to** travel to Scotland on Monday.
Или: I'm travelling to Scotland on Monday.

- Для обозначения длительного действия, которое будет совершаться в определенный период времени в будущем. Или недлительного, но заранее запланированного действия:

– Future Continuous
He **will be working** *on a new play during this summer.*
I'll be meeting *them at the station.*

Упражнение 10. Прочтите следующие предложения.

А. Найдите в каждом предложении глагол-сказуемое и определите, к какой группе времен в настоящем, прошедшем или будущем относится глагол. Переведите эти предложения.

1. What are the children doing? 2. The sun goes round the earth. 3. I won't be here tomorrow. 4. I'll be watching the match on television. 5. We invited them to our party. 6. He has lost his key. 7. How long have you been learning English? 8. My father has always worked hard. 9. I have been living in London since January. 10. When I arrived at the party, Tom wasn't there. 11. It is getting[4] dark. 12. Computers have helped me to look differently at my work. 13. He will be compiling[5] a program. 14. By the time we arrived they had already installed[6] software. 15. They will have reinstalled the application by 5 p. m.

Б. Раскройте скобки, употребляя глаголы в Present Perfect, Past Simple, Past Continuous или Past Perfect.

1. Only when she was going to bed, she remembered that she (to forget) to ring up her friend. 2. We already (to study) seven English tenses. 3. He (to spend) two weeks in Scotland two years ago. 4. I (to speak) to my friend yesterday. 5. Look! Kate (to wash) all the dishes. 6. You ever (to be) to Piccadilly Circus? 7. I yet (not to receive) an answer to my letter. 8. My brother (to train) at the stadium from six to till eight yesterday. 9. I (not to dance) for ages! 10. I never (to be) to the Bahamas. 11. At this time yesterday we (to talk) about you. 12. When you (to receive) a letter from your friend.

Упражнение 11. Прочтите предложения. При их переводе предлагается употребить одну из двух временных форм.

А. **Present Continuous** или **Simple Present**. Назовите номера предложений, в которых вы употребили бы форму **Present Continuous**.

1. Я не вижу, что ты сейчас пишешь. 2. Он приезжает через три недели. 3. Мы большие друзья. 4. Мы часто пишем письма друг другу. 5. В настоящее время он работает над диссертацией. 6. Я хорошо вижу этого человека.

Б. **Simple Past** или **Present Perfect**. Назовите номера предложений, в которых вы употребили бы форму **Present Perfect**. **Сравните**. 1. I worked there 5 years ago. **Но**: I have worked here for 5 years. 2. I was in London last year. **Но**: She is a real traveler. She has been to Paris, London, Munich, etc. 3. I did so many things yesterday**. Но**: I've done so many things today. 4. He lived here for 10 years (He doesn't live here now). **Но**: He has lived here for 10 years.

1. Я просил тебя зайти на почту вчера. 2. Ты была там? 3. Да. 4. Когда ты ходила туда? 5. Я только что вернулась с почты. 6. Ты отослала (to mail) письмо? 7. Нет еще. 8. Я купила конверты (envelope). 9. Но я еще не написала письма. 10. В этом году я много читала. 11. Я прочитала несколько книг на английском.

В. **Simple Past** или **Past Continuous**. Назовите номера предложений, в которых вы употребили бы форму **Past Continuous**.

1. В три часа его не было дома. 2. Он в это время работал в библиотеке. 3. Когда я пришла в библиотеку, он все еще там работал. 4. Было довольно поздно, и мы решили вернуться домой. 5. Пока мы шли домой, все время шел дождь и дул холодный ветер.

Упражнения 12. Назовите три формы приведенных ниже неправильных глаголов.

To be, to have, to mean, to learn, to become, to bring, to know, to think, to buy, to pay, to take, to do, to begin, to give, to make, to keep, to get, to read, to show.

Упражнение 13. Заполните пропуски, выбрав подходящую форму глагола.

1. Do you want a cup of coffee? – No, thanks. I _____ just _____ some.
a) **have … had**; b) **was … having**; c) **had … had**; d) **am … having**.
2. What _____ you _____ when I phoned you?
a) **were … doing**; b) **was … doing**; c) **have … done**; d) **are … done**.
3. When is Jane going to be in? – She _____ very soon.
a) **will be**; b) **has been**; c) **had been**; d) **will have been**.
4. Why did he change the job? – He _____ to get a promotion.
a) **wants**; b) **want**; c) **will want**; d) **has wanted**.
5. After he _____ from the University he started to work for the firm.
a) **had graduated**; b) **has graduated**; c) **was graduating**; d) **graduates**.

Упражнения 14. Найдите в каждом предложении глагол-сказуемое и определите, к какой группе времен в настоящем, прошедшем или будущем относится глагол. Переведите эти предложения.

1. Mainframe computers are the largest[7] and most powerful. 2. The processor does all the processing[8] and controls all the other devices in the computer system. 3. Nolan Bushnell (the father of home video games) grew up near Salt

Lake City. 4. He played primitive computer games. 5. You will connect[9] with them using your computer. 6. Society is heading in the direction of computer networks majority. 7. I do not see that computers are bringing us one step nearer to anything that does matter to me. 8. Most of the tools we have invented have aided[10] our bodies rather than[11] minds. 9. According to one story, Babbage was lamenting about the errors[12] in some tables to his friend Herschel, a famous astronomer. 10. Computer technology has opened a variety of opportunities for people. 11. What was he doing when you called on him? 12. We had written the article by five o'clock. 13. I feel tired as I have been working in the garden for several hours. 14. In Britain girls are overtaking boys at school. 15. I feel terrible. I think I'm going to be sick. 16. Polysilicon has been the dominant interconnect material. 17. The control method has only recently been applied[13] to the design.

Упражнения 15. Преобразуйте следующие предложения в **Past Simple** и переведите их.

1. Many people have an opportunity to use computers. 2. There is no doubt, that computers solve problems very quickly. 3. Instructions direct the operation of a computer. 4. Computers bring with them both economic and[14] social changes.[15] 5. Computing embraces not only arithmetic, but also computer literacy. 6. It is well-known that computers prepare laboratory tests. 7. Those persons are computer literate and think of buying a new computer. 8. The receive subscription magazine once a month. 9. My mother is ill and visits her doctor every day. 10. Experts know much about how to prepare programs.

Упражнение 16. Переведите предложения на английский язык.

1. Мой компьютер работает надежно. 2. Сейчас я загружаю мой компьютер. 3. Ты загрузил новую программу. 4. Завтра я сотру всю ненужную информацию. 5. Мой компьютер работает уже два часа. 6. Она работает здесь с апреля. 7. Шекспир написал «Гамлета». 8. Том потерял свой ключ. 9. Он всегда встает в 9 часов. 10. Пожалуйста, тише, я работаю. 11. Завтра у нас конференция. Я собираюсь пригласить нашего преподавателя. 12. Я думаю, что я приглашу нашего преподавателя. 13. Ваши специалисты уже подключили все компьютеры к локальной сети? – Нет еще. 14. Ты уверен, что все кабели и устройства совместимы с твоей сетью? – Да, я все проверил.

2.2.4. Согласование времен

В английском языке существует правило согласования времен (Sequence of Tenses). Оно касается **дополнительных придаточных предложений** и заключается в том, что глагол-сказуемое придаточного предложения **согласуется во времени** с глаголом главного предложения.

Если глагол, выражающий сказуемое главного предложения, стоит в **Present Simple**, то глагол придаточного предложения стоит в том времени, которое требуется по смыслу, и переводится в соответствующем времени; в этом случае согласования времен нет, например:

He **says** (that) the hospital is new. – *Он говорит, что больница новая.*

Если глагол, выражающий сказуемое главного предложения, стоит в **Past Simple**, то глагол, выражающий сказуемое дополнительного придаточного предложения, также стоит в одной из форм прошедшего времени, в соответствии с правилами, данными ниже.

- **Если действие, выраженное в придаточном предложении, совпадало по времени с действием**, выраженным в главном предложении, то глагол в придаточном предложении стоит **в Past Simple** и переводится на русский язык глаголом в настоящем времени, например:

He **showed** that the method **gav**e good results. – *Он показал, что этот метод **дает** хорошие результаты.*

- **Если действие, выраженное в придаточном предложении, предшествовало действию, выраженному в главном предложении**, то глагол придаточного предложения стоит в **Past Perfect**. На русский язык переводится глаголом в прошедшем времени, например:

He **reported** that he **had analyzed** the results of the experiment. – *Он **сообщил**, что он **проанализировал** результаты эксперимента.*

- **Если действие, выраженное в придаточном предложении, следовало за действием, выраженным в главном предложении,** то глагол придаточного предложения стоит в форме **Future in the Past** (*будущее в прошедшем*). На русский язык **Future in the Past** переводится в форме будущего времени, например:

She **said t**hat we **should/would** use the method. – *Она **сказала,** что мы **будем пользоваться** данным методом.*

He t**hough**t that the test would be useful. – *Он **полагал**, что тест **будет** полезным.*

Обратите внимание! В придаточных обстоятельственных предложениях времени и условных предложениях, которые начинаются с союзов **when**, **till**, **until**, **as**, **after**, **before**, **if**, **unless**, **providing** и некоторых других, **глагол в форме будущего времени не употребляется**.

A friend of mine will help you **when** you **reach** the city. – *Мой друг поможет Вам, когда Вы **будете** в городе.*

I will install the app **providing** there **is** enough space on the disk. – Я установлю приложение при условии, что на диске **будет** достаточно места.

Сравните. I don't know **when** he **will come**. – *Я не знаю, когда он приедет.* В этом примере союз **when** начинает придаточное дополнительное предложение, которое отвечает на вопрос «что?», поэтому глагол может быть выражен формой будущего времени.

Некоторые случаи, когда согласование времен не употребляется

- Если в придаточном предложении сообщается общеизвестное положение или факт.

We convinced him how important learning English is. – *Мы убедили его, насколько важно изучение английского.*

Even the early doctors knew that the washing of hands prevents infection. – *Еще издавна врачи знали, что мытье рук препятствует распространению инфекции.*

- Если в состав сказуемого придаточного предложения входят модальные глаголы **must**, **should**, **ought** или **need**, согласование времен **не употребляется**. Однако ***can*** меняется на ***could***, а ***may*** меняется на ***might***.

Mary said that he must call her. – *Мария сказала, что он должен позвонить ей.*

They said they might come back early. – *Они сказали, что, может быть, вернутся рано*.

Boris said that he could speak French. – *Борис сказал, что он говорит по-французски.*

Упражнение 17. Объясните согласование времен в английских предложениях и переведите их.

1. They were informed yesterday that the company had paid all the accounts promptly[16]. 2. The buyers stated in their enquiry that they had been cooperating with the firm since 2015. 3. The buyers informed the suppliers that they could not accept their offer on the conditions proposed[17]. 4. The secretary said that she had prepared all the documents. 5. He informed the customers[18] that their firm had ordered new equipment. 6. The experts informed the buyers that they were making arrangements for the shipment of the goods by the steamship "Rostov". 7. The buyers stated in their claim that they had chartered the tanker "Bingo" to load the computers at Taiwan at the beginning of December.

Упражнение 18. Переведите предложения из прямой речи в косвенную речь, сделав необходимые преобразования.

1. He said, "I went to the city center yesterday". 2. My mother said, "I have washed the dishes". 3. Kristy asked me, "Do you want to stay here?" 4. She asked us, "Why have you come so late?" 5. The old teacher said to me, "It happened many years ago". 6. He said, "I hope the weather will be better next week".

Упражнение 19. Отметьте предложения, в которых соблюдаются правила согласования времен. В остальных исправьте ошибки.

1. He knew he has a problem. 2. He knows he will have a problem. 3. He knew he had a problem. 4. He knew he will have a problem. 5. He knew he would have a problem.

Упражнение 20. Переведите предложения на английский язык.

1. Я думал, что они ждут меня дома. 2. Джон был уверен, что я уехал из города. 3. Я надеялся, что он придет. 4. Мы не знали, что он говорит по-английски. 5. Я не понимаю, когда он придет. 6. Когда он переведет этот текст, мы пойдем в кино. 7. Они ждут, пока проблема не будет решена. 8. Она сказала, что ему следует загрузить новое приложение. 9. Он сказал, что он может отремонтировать смартфон. 10. Моя сестра написала, что она, может быть, приедет завтра.

2.3. Страдательный залог

Если в предложении сказуемое выражено глаголом в страдательном залоге, то действие не выполняется лицом или предметом, представленными подлежащим, но направлено на лицо или предмет. Формы глагола в страдательном залоге образуются при помощи вспомогательного глагола **to be** (в соответствующем времени, лице, числе) и **смыслового глагола (в форме Participle II)**. Изменяется по времени только глагол to be, смысловой же глагол имеет во всех временах одну и ту же форму. У правильных глаголов она совпадает с формой Past Simple и заканчивается ***-ed***.

Сравните. Somebody cleans the room every day (active). – *Кто-то убирает комнату каждый день.*

The room is cleaned every day (passive). – *Комната убирается каждый день.*

I invited him (active). – *Я пригласил его.*

I am invited to all the meetings (passive). – *Меня приглашают на все встречи.*

Дополнение в предложениях с глаголом-сказуемым в страдательном залоге употребляется с предлогом ***by*** (обозначает **кто/что совершает действия**) или ***with*** (выражает **орудие действия)**. Это дополнение соответствует русскому дополнению в творительном падеже без предлога.

The drying of materials is effected **by** a high-frequency current. – *Сушка материала производится током высокой частоты.*

Shafts are turned **with** cutters. – *Валы обтачиваются резцами.*

The note was written with a pencil. – *Записка была написана карандашом.*

В страдательном залоге нет времен Perfect Continuous, Future Continuous и Future Continuous in the Past.

Таблица форм глагола в страдательном залоге (The Passive Voice)

Группа времен	Настоящее (Present)	Прошедшее (Past)	Будущее (Future)	Будущее в прошедшем (Future in the Past)
Simple (Indefinite)	The house is built	The house was built	The house will be built	The house would be built
Continuous (Progressive)	The house is being built	The house was being built		
Perfect	The house has been built	The house had been built	The house will have been built	The house would have been built

Упражнение 21. Найдите в предложениях глаголы-сказуемые в страдательном залоге и определите, к какой группе времен в настоящем, прошедшем или будущем относятся глаголы. Переведите эти предложения.

1. The house was built in 1895. 2. This problem can be solved. 3. The room is being cleaned now. 4. The room has been cleaned. 5. The USA is located in the central part of North America.

Упражнение 22. Назовите номера предложений, в которых сказуемое выражено глаголом в страдательном залоге. Переведите эти предложения.

1. What problem is your department dealing with at present? 2. We are researching[19] into the problem of air pollution. 3. This problem is being given much attention to at present. 4. Very little research has been done in this field.[20] 5. What were you doing yesterday afternoon? 6. I was hanging on the telephone for half an hour and couldn't get you. 7. An interesting and very important experiment was being made at that hour. 8. All of us were watching it. 9. Will you be making any experiment tomorrow afternoon? 10. No, we won't, but all the departments staff will be discussing the results obtained[21] yesterday. 11. The results of the experiments were recorded. 12. The program will be compiled in a few days.

Упражнение 23. Найдите в предложениях глаголы-сказуемые в страдательном залоге и определите, к какой группе времен в настоящем, прошедшем или будущем относятся глаголы. Переведите эти предложения.

1. All the other devices in the computer system, which can be connected to the CPU, are known as peripherals. 2. When your computer is turned off, it is a dead collection of metal. 3. This device was designed by our engineers last year. 4. Many jobs will be lost because of computers. 5. Date is fed into the computer's memory. 6. One of Babbage's reasons for abandoning the Difference Engine was that he had been struck by a much better idea. 7. More powerful microcomputers

are gradually being produced.[22] 8. Nowadays computer development is rapidly progressing. 9. Some peculiarities of this procedure were noted. 10. Disk drives are used to read and write information. 11. The propeller theory was worked out by N. E. Zhukovsky. 12. The information hasn't been removed.[23] 13. Bluetooth is used to connect and exchange information between devices such as mobile phones, laptops, personal computers, printers, digital cameras, etc. 14. The launch of the new device has been delayed until now. 15. The application is being tested for bugs at the moment.

Обратите внимание! Вспомогательный глагол **to be** в составе сказуемого, выраженного глаголом в страдательном залоге, может быть заменен вспомогательными глаголами **to get** и **to become.** Будучи вспомогательными для образования Passive Voice, глагол «to get» не переводится, а глагол «to become» переводится – *становиться, начинать*.

Only inner layer of electrons **gets exited**. – *Только внутренний слой электронов приходит в возбужденное состояние.*

I **became engaged** in problem of corrosion resistance. – *Я начал заниматься (стал увлекаться) проблемой коррозионной устойчивости.*

Упражнение 24. Прочтите и переведите предложения, содержащие трудные случаи перевода страдательного залога.

1. This problem was not considered.[24] 2. I am invited to all the meetings. 3. Ann was offered this job. 4. The team was given satellite phones. 5. Many questions were asked correctly. 6. Questions can be asked and answered, but unfortunately the questions asked and those answered are frequently not the same. 7. The men were paid some money. 8. Have you been shown this device. 9. When I arrived at the hotel I was shown my room and offered a cup of tea. 10. We got involved in this process.

Упражнение 25. Перепишите предложения. Вместо употребления **somebody** или **they** напишите предложение в страдательном залоге.

Образец: Somebody has locked the computer. – *The computer has been locked.*

1. They have postponed the conference. *The conference ...*

2. Somebody is using the computer at the moment – *The computer ...*

3. I didn't realize that somebody was recording our conversation – *I didn't realize*[25] *that …*

4. They have built a new hospital near the airport – …

Упражнение 26. Преобразуйте следующие предложения действительного залога в страдательный залог и переведите их.

1. Electronic devices control the work of power station. 2. They calculate the trajectories of spaceships. 3. People discover new phenomena of nature due

to electronic devices. 4. Memory is the part of the computer which stores both data and commands. Scientists designed a variety[26] of tubes for specialized functions. 5. American scientists invented the transistor in 1948. 6. New types[27] of integrated circuits[28] increased packing density. 7. Integrated circuits greatly reduced the size of devices. 8. Electronics has extended man's intellectual power. 9. Scientists a looking for new ways[29] for the improvement[30] of integrated circuits technology. 10. Jack Kilby developed the concept of integrating device and built[31] the first IC in 1958.

Упражнение 27. Раскройте скобки и выберите глагол в требуемом залоге: действительном или страдательном. Переведите предложения.

1. Electronic devices (help/are helped) people to discover new phenomena in nature. 2. The transistor (replaced/was replaced) by vacuum tube thanks its numerous[32] advantages. 3. Due to transistors all circuit functions (carried out/were carried out) inside semiconductors. 4. Electronic devises (use/are used) in scientific research. 5. Before the invention of the transistor its function (performed/was performed)[33] by means[34] of vacuum tubes. 6. The reliability of electronic systems (connect/is connected) with the number of discrete components[35]. 7. Semiconductor integrated circuits (helped/were helped) to increase reliability of devices. 8. New types of integrated circuits (have developed/have been developed lately). 9. Computers (applied, are applied, are applying) for automatic navigation. 10. The programs (write, have written, are written) to help people in the use of the computer system. 11. As digital computers (count, are counted) quickly, they widely (use, used, are used) in business data processing. 12. It is known that an analyst (use, uses, is used) a computer to solve specific problems.

Упражнение 28. Заполните пропуск, выбрав подходящую форму глагола в страдательном залоге.

1. The basic statements of classical economy _____ by Adam Smith.

a) were formulated; b) was formulated; c) formulated; d) will formulate.

2. Who _____ this book _____ by? – Its author is Mark Twain.

a) was … written; b) has … written; c) was … writing; d) were … written.

3. The students _____ about the college regulations.

a) were telling; b) was told; c) were told; d) has told.

4. What about the new theatre? – It _____ by the end of the year.

a) was constructed; b) will be constructed; c) has been constructed; d) will have been constructed.

5. Much work _____ already _____ by this research center.

a) was … being done; b) has … been done; c) had … been done; d) was … done.

Упражнение 29. Прочтите следующие предложения. Сделайте синтаксический анализ предложений в такой последовательности: а) простое/сложное; б) в сложном предложении отметьте границу между отдельными частями – запятые, союзы, союзные слова или отсутствие их; в) найдите в предложении (или в каждой части сложного предложения) сказуемое и подлежащее; г) определите, каким залогом выражен глагол-сказуемое предложения (действительным или страдательным); д) отметьте, какой группой времен представлен глагол-сказуемое (Simple, Continuous, Perfect, Perfect Continuous) и почему; е) обозначьте, в каком времени стоит глагол-сказуемое (Present, Past, Future и т. д.). Переведите эти предложения.

1. Some blind and partially sighted people use computer-based technology to gain access to printed information. 2. In 1997, a new technology emerged that brought digital sound and video into homes over the world. 3. Since 2006 another revolution with the introduction of Blu-ray Discs has taken place. 4. Users will be able to connect to the Internet via Wi-Fi. 5. Minicomputers are becoming less popular as microcomputers improve. 6. We have been solving the problem since 1993. 7. Up to this point we have been discussing information retrieval in general terms. 8. Two keys are usually employed, one to encode and the other to decode the information. 9. The separate elements of the building have been manufactured at different factories. 10. Computer Security techniques are being developed to protect single computers from accidental or intentional invasion of data by unauthorized individuals. 11. Science is the means by which the whole of our civilization is rapidly being transformed. 12. The new device will have been tested before the chief engineer comes. 13. Virtual reality techniques[36] have been used to make a 3D model of the Planet Mars. 14. The computer industry has been extremely vulnerable in the matter of security. 15. By 1985 they had sold more than two million Apple II's.

2.3.1. Перевод предложений с английскими глаголами в страдательном залоге, требующими после себя дополнения с предлогом типа to speak about

При переводе глаголов в страдательном залоге с предлогами после них типа **to speak about** (*говорить о*), **to experiment upon** *(экспериментировать над)*, **to act upon** *(действовать на*)**, to deal with** *(иметь дело с, рассматривать)*, **to follow** *(следовать за)*, **to refer to** *(ссылаться на) и т. д.* следует соблюдать следующую последовательность перевода:

1. При наличии предлога после глагола в страдательном залоге перевод предложения начинается с этого предлога. Затем переводится стоящее на первом месте в предложении подлежащее. А после этого переводится

глагол-сказуемое предложения (цифры в скобках означают последовательность перевода слов).

His new article (2) ***was*** much **spoken** (3) **about (**1). – ***О*** *его новой статье много говорили.*

2. The electromagnetic telegraph (2) **was followed** (3) by (1) the invention of telephone. – ***За*** *изобретением электромагнитного телеграфа последовало изобретение телефона.*

Обратите внимание! Правильно перевести стоящий после глагола предлог поможет знание того, с какими предлогами обычно сочетается соответствующий русский глагол, например: *говорить о, следовать за, экспериментировать над* и т. д.

Обратите внимание! refer to – *ссылаться* на. Но: **be referred to as** – *называться.*

Упражнение 30. Прочтите и переведите следующие предложения, обращая внимание на глаголы в страдательном залоге с предлогами после них.

1. The Doctor was sent for. 2. Different semiconductor materials were much experimented upon. 3. When insulators are acted upon by large currents they begin to conduct. 4. This problem was dealt with in a number of papers.[37]

5. The developments in the field of telecommunications will be dealt with at this conference. 6. That design was followed by many others. 7. The review will be followed by the discussion of the problem. 8. The qualitative examination of an organic compound is followed by a quantitative analysis. 9. This method was referred to in an earlier paper. 10. The main features of the latest smart phone were referred to in that email. 11. This type of programs is referred to as office programs. 12. A telephone system bought and used by telephone companies is referred to as Private Branch Exchange (PBX). 13. A technology that allows[38] short-range, wireless connection between devices is referred to as Bluetooth. 14. Not every experiment can be relied upon. 15. Automation is often referred to as a new subject and its various aspects have not all been paid adequate attention to. 16. The results were arrived at when no hope remained in the research group. 17. Many problems arising from the impact of automation on national and world economy have not even been dealt with. 18. This type of programs is referred to as office programs. 19. These results were arrived at suddenly. 20. What is watched and waited for seems quite reasonable. 21. The experiment was followed by a number of demonstrations. 22. At the meeting I was listened to with great attention. 23. Your mistakes must be paid attention to. 24. The statement is being widely commented on. 25. His remark was taken no notice of.

2.3.2. Перевод предложений с английскими глаголами в страдательном залоге to affect (действовать на), to influence (влиять на)

В английских научно-технических текстах глаголы-сказуемые в страдательном залоге (**Passive Voice**) используются гораздо чаще, чем в русском языке. Этот момент следует учитывать при переводе, и часто английские предложения с глаголом в пассивной форме переводятся на русский язык глаголом действительного залога. Как правило, такая трансформация при переводе необходима при несовпадении переходности английского и русского глаголов.

The rollout of the new software **was affected** by many factors. – *Многие факторы* ***повлияли*** *на внедрение нового программного обеспечения* (т. е. при переводе мы дополнение в английском предложении **by many factors** сделали подлежащим, а подлежащее (группу подлежащего) английского предложения **The rollout of the new software** сделали дополнением с предлогом).

Упражнение 31. Прочтите и переведите следующие предложения. В случае необходимости замените при переводе страдательный залог действительным.

1. The convergence of technologies is affected[39] by a number of factors. 2. The conductivity is affected very considerably by a presence of impurities in the crystal lattice *(кристаллическая решетка*). 3. The software industry has been greatly influenced by the popularity of Open source software. 4. Manufacturing costs are influenced by the size and power consumption of hardware. 5. The speed with which arithmetic operations are performed is affected by lots of circumstances. 6. There is hardly any aspect of human life that would not be affected by the changes that computers have brought about.

Упражнение 32. Пользуясь словарем, переведите предложения на английский язык, используя соответствующие формы Passive voice.

1. Радио было изобретено А. С. Поповым. 2. За изобретением радио последовали изобретение телевидения и компьютера. 3. Нас попросили рассказать об истории компьютерных технологий. 4. В настоящее время эти технологии быстро развиваются. 5. Как можно улучшить и усовершенствовать эти технологии? 6. Многие «прорывные» технологии создаются и реализуются на нашей фирме. 7. Например, этот мощный компьютер будет изготовлен в следующем году. 8. Качество изготовленного оборудования тестируется нашими специалистами. 9. К середине XIX столетия было открыто около шестидесяти различных элементов.

Упражнение 33. Пользуясь словарем**,** переведите предложения на английский язык, обращая внимание на порядок слов, выбор залога и времени глагола.

1. В нашем эксперименте мы не употребляем схемы. 2. Первые мобильные телефоны появились около 25 лет тому назад. Они не позволяли нам делать фотографии и выходить в Интернет. 3. Особое внимание будет уделено радиовещанию. 4. Теперь компании не потребуется сотни цифровых узлов памяти. 5. Из каких узлов будет состоять телекоммуникационная сеть? 6. Многие производители переживают сейчас трудные времена. 7. Завтра мы посетим эту компанию. 8. Совсем скоро я продолжу свою работу. 9. Они не пользовались этим оборудованием вчера в 9 часов. 10. Они собирали и тестировали компьютеры весь день. 11. Мы уже опубликовали эту статью. 12. Я не заменил батарейки в моей камере. 13. Вы видели такие электронные устройства раньше. 14. Он закончил писать программу к 10.00. 15. Они тестируют систему с шести часов. 16. Он изучает английский язык уже 10 лет. 17. Она перезагружает ноутбук уже 20 минут.

2.4. Глагол *to be*

Глагол **to be**, так же как и глаголы **to have** и **to do**, можно назвать тремя китами английской грамматики, так как они используются чаще других глаголов английского языка. Перечислим возможные функции **to be** в предложении.

- **Основной глагол**, имеющий значение ***«быть, существовать, находиться, являться, представлять собой»***, в настоящем времени на русский язык часто не переводится:

Wi-Fi **is** a technology providing wireless transmission of data over a short range. – 1. *Wi-Fi – **это** технология, обеспечивающая беспроводную передачу данных на короткие расстояния.* 2. *Wi-Fi **представляет собой** технологию (= **является** технологией), которая обеспечивает беспроводную передачу данных на короткие расстояния.*

- В сочетании с **there (there is/was/has been/will be, etc.**) на русский язык переводится «***есть, существует, имеется, наблюдается, находится и т. д.***». **There** в составе этого оборота выполняет функцию **формального подлежащего**.

There are a number of different ways to receive digital television. – ***Существует** несколько различных способов принимать цифровое телевидение.*

There were some problems in our company. – ***В нашей компании существовали** некоторые проблемы*. (**Обратите внимание на порядок слов в русском языке при переводе этого предложения!)**

There has been a huge increase in the volume of data. – ***Наблюдался*** (дословно: ***был***) *огромный рост объема данных.*

There must be some solution of this problem. – *Должно быть какое-то решение этой проблемы.*

Примечание. Формальное подлежащее *there* образовалось из наречия *there – там*, однако в обороте there is оно не имеет этого значения.

Сравните.

I don't see anything there. – *Я ничего там не вижу*.

There is a student there. – *Там студент*.

- Входит в состав некоторых **устойчивых словосочетаний**, в которых **to be** может переводиться по-разному:

to be of interest – *представлять интерес*; **to be of importance** – *иметь большое значение, быть важным*; **to be in use** – *использоваться.*

This technology **is in use** today. – ***В*** *наше время* ***используется*** *эта технология.*

- **Глагол-связка** в составе именного сказуемого, которое состоит из **to be** и именной части:

He **is** a famous scientist. – *Он – известный ученый.*

- **Вспомогательный глагол** служит для образования следующих форм.

– Длительных времен **Continuous = be + Ving (IV форма)**. Сказуемое на русский язык переводится глаголом несовершенного вида (что делают?).

Experts **are developing** new products in corporations, computer labs and workshops around the world. – *Специалисты* ***разрабатывают*** *новые изделия в корпорациях, компьютерных лабораториях и мастерских по всему миру.*

– Страдательного залога **Passive voice = be + Ved (III форма)**.

Most microcomputers **are used** by individuals. – Большинство микрокомпьютеров ***используются*** частными пользователями.

Most employees ***are*** already **equipped** with the popular devices of their choice. – *Большинство работников уже* ***обеспечены*** *популярными устройствами в соответствии с их предпочтениями.*

Упражнение 34. Прочтите и переведите следующие предложения, обращая внимание на перевод глагола **to be**.

1. Radio is the transmission of signals, by means of electromagnetic waves with frequencies below those of visible light. 2. GSM is a worldwide standard for mobile phones. 3. The variety of software is infinite: there are applications for education, entertainment, business and every field you can imagine. 4. The Internet is a revolution in communications. 5. Monitoring your home and transmitting images via[40] the Web are only a couple of the things you can do with

your Webcam. There are a lot of other ways to use a camera that's connected to your computer. 6. There were lots of drawbacks[41] which our researchers wanted to remove. 7. There has been a scarcity of coding schemes in the industry. 8. Are there any ways of dealing with this type of errors? 9. There will not be fiber available to the customers' premises (*помещения заказчиков*) for at least two years. 10. There may be times when you suspect that your software has errors. 11. Energy consumption is increasing but the resources are declining. So science is experimenting with other energy sources. 12. The technological revolution is producing an explosive change in computers' hardware and software. PCs are now coming in different shapes, sizes and prices. 13. Many companies are combining rapidly converging communication technology into one device that can act as a phone, take photographs, and send[42] e-mail. 14. Bluetooth is used to connect and exchange information between devices such as mobile phones, laptops, personal computers, printers, digital cameras, etc. 15. The launch of the new device has been delayed until now. 16. The application is being tested for bugs at the moment. 17. VoIP (Voice over Internet Protocol) can also be used for voice mail and fax mail applications. 18. RFID (Radio Frequency Identification) will be implemented[43] in two years. 19. There will be the traditional paper presentations, poster sessions and tool demonstrations. 20. There have been no directly comparable[44] materials.

- **Значение и перевод конструкции *be* + *to* + Infinitive**

A. Является эквивалентом модального глагола **must** и обозначает ***долженствование***.

Следует помнить, что ***be* + *to* + *V*** не является в полном смысле эквивалентом глагола **must** и часто переводится словами ***обязан, приходится, должен (в соответствии с планом, договоренностью).*** В этом значении формы глагола **to be** употребляются только в Present Simple (в отношении настоящего времени) и в Past Simple (в отношении прошедшего времени).

Сравните.

I **must** create a new user. – *Я **должен (мне нужно)** создать еще одного пользователя*.

We **are to provide** a broadband access to our employees. – *Мы **должны предоставить** нашим сотрудникам доступ к широкополосной связи* (должны по плану, по договоренности).

Упражнение 35. Прочтите и переведите следующие предложения, обращая внимание на сочетание **be + to + V**.

1. We are to finish with the experiments in two months at the most. 2. Mary was to work as a Director for two years. 3. "Digital" means a sequence of 1s and 0s racing through the network. But how are these 1s and 0s to be arranged? At what

speed are they to travel?[45] What route are they to take? 4. The IT department is to provide a successful implementation of the IT renewal program. 5. The new system is to be integrated in all the branches of the chain. 6. Two data signals are to be transmitted over two channels. 7. The material is to have resistance to the corrosion and oxidation. 8. These parameters are to be maintained throughout the high temperatures. 9. He was to have made a report on physical properties of solids. 10. It was stated that in the bill of lading that the computers were to be delivered at the end of December.

Б. В предложениях со словами **purpose, goal, aim, task, function, problem, way, idea, etc.** является глаголом-связкой, на русский язык переводится «***заключается, состоит в, является***».

The ***function*** of this device **is to receive** signals. – *Функция этого устройства* ***состоит в*** *приеме сигналов/заключается в том, чтобы принять сигналы.*

Упражнение 36. Прочтите и переведите следующие предложения, обращая внимание на сочетание **be + to + V**.

1. The easiest way to make free long-distance calls is to use VoIP. 2. The idea is to transfer the knowledge to others in order to improve efficiency. 3. Our aim is to provide a better service such as virtual desktop service. 4. The idea is to use mobile phones for making fast, secure payments in a retail environment. 5. One of the primary considerations is to obtain a material with high electrical conductivity. 6. Another way to input data is to use a microphone. 7. Probably the easiest way to look for the information is to use a search engine. 8. We have just (= *только что*) seen that the simplest way to determine by experiment the density of a substance is to weigh [wei] it.

2.5. Глагол *to have*

Перечислим возможные функции to have в предложении.

• **Основной глагол** со значением ***«иметь, обладать»*** в настоящем времени на русский язык часто не переводится:

This mobile phone **has** a battery life of eight hours. – У *этого мобильного телефона время работы аккумулятора 8 часов.*

Does Ann **have** a car? (= **has** Ann **(got)** a car?). – *У Анны* ***есть*** *машина?*

Ann **hasn't got** a car = Ann **has no** car = Ann **does not have any** car. – *У Анны* ***нет*** *машины*.

• Входит в состав устойчивых словосочетаний с существительным, имеющим значение глагола, а сам **to have** теряет свое собственное лексическое значение: **to have a talk** – *поговорить* (сравните: to talk – *говорить*); **to have lunch** – *обедать,* **to have a chat** – *болтать* и т. д.

• **Вспомогательный глагол** служит для образования времен группы **Perfect = have + Ved (III форма)**. Как правило, сказуемое обозначает законченное, совершившееся действие и на русский язык переводится глаголом совершенного вида (что сделал?).

Wireless technologies, broadband Internet and satellite systems **have transformed** the telecommunications industry. – *Беспроводные технологии, широкополосный Интернет и спутниковые системы* ***изменили*** *индустрию телекоммуникаций.*

Сказуемое также может обозначать действие, которое началось в прошлом и длилось до настоящего момента, часто с for – *в течение*, since – *с, с тех пор как.*

The device **has been working** for two hours. – *Устройство* ***работало*** *в течение двух часов* (и только что перестало работать).

In 1920, largely due to Bohr's efforts, the Institute of Theoretical Physics was established at Copenhagen. He became its first head and under him the Institute **has become** an important center for the development of theoretical and experimental physics. – *В 1920 году, в значительной мере благодаря усилиям Бора, в Копенгагене был создан институт теоретической физики. Бор стал его первым главой, и под его руководством институт* ***стал (становится* и *продолжает оставаться до настоящего времени***) *важным центром развития теоретической и экспериментальной физики.*

Упражнение 37. Прочтите и переведите следующие предложения с глаголом **to have**, обращая внимание на его функции в предложении.

1. This mobile device has an email application on it and it is internet enabled so you can browse the Internet. It also has GPS so you'll be able to find your clients easily. 2. As many GSM network operators have roaming agreements with foreign operators, users can often continue to use their mobile phones when they travel to other countries. 3. TDMA technology has three times the capacity[46] of an analog system using the same number of channels. 4. Mobile workers need laptops that have long battery lives. 5. The price of telecoms services has fallen, on average, by around 30 % in the past decade. Moreover[47], the competition has raised standards of service, making former monopolies much more respondent *(реагирующий)* to the needs of consumers. 6. Traditionally, fixed, copper landlines have been used for carrying voice calls, and recently for internet access. Mobile phones have provided wireless connectivity for voice calls and text messages. Televisions have received broadcast content principally via cable, satellite and radio frequency transmission.

Значение и перевод конструкции have + to + Infinitive

Конструкция have + to + V является эквивалентом модального глагола **must** и обозначает долженствование. Эта конструкция употребляется взамен недостающих форм глагола **must** – в прошедшем и будущем времени.

Следует помнить, что **have + to + V** не является в полном смысле эквивалентом глагола **must** и часто переводится словами ***вынужден***, ***приходится***.

Big software developing corporations **have to compete** with experts producing open source software. – *Большие корпорации, разрабатывающие ПО,* ***вынуждены конкурировать*** *со специалистами, производящими ПО с открытым кодом.*

Вопросительные и отрицательные предложения этой конструкции образуются с помощью вспомогательного глагола **do**.

Do you have to solve this problem? – *Тебе* ***придется решать*** *эту проблему?*

I've started teleworking and **don't have to go** to the office. – *Я начал работать удаленно и* ***мне не приходится ездить*** *в офис.*

Примечание. Вместо **have + to + V** может использоваться конструкция **have got + to + V,** которая более эмоционально насыщена и поэтому сильнее выражает долженствование.

Упражнение 38. Прочтите и переведите следующие предложения, обращая внимание на сочетание **have + to + V**.

1. You see, there are a number of experiments that have to be done. 2. They had to carry out a lot of not very useful work. 3. In this case we have to do with pressure much greater than that of air. 4. The rate[48] of data does not have to be large on this pipe. 5. Any potential microprocessor user now has to make a choice from plenty of IC_s. 6. A lot of TV broadcasters are having a hard time. They have to survive on advertising revenue and at the moment that's falling. 7. I often have to create documents and presentations when I'm away from the office. 8. Early European analogue cellular networks employed an uncoordinated mix of technologies and protocols so equipment manufacturers had to contend with varying standards. 9. Thin and light laptops and ultra-portable designs are the best options when you have to travel with your laptop. 10. In fact you will have to educate yourself as well as you public. 11. Why did you have to go to hospital? 12. You don't have to do something. (**Сравните.** You mustn't do something). 13. We have lorries (грузовики) from the distribution center turning up (*заезжающие*) at the store warehouse unannounced and we have no idea what goods they are delivering, so we have to unpack it all to find out what it is. And because we are not sure what we have in stock we can't check if anything has been lost or stolen. 14. Will you have to do it tomorrow? 15. I didn't have to scan all the files yesterday.

Упражнение 39. Пользуясь таблицей, назовите пять мероприятий (дел, обязанностей), которые a) вам предстояло выполнить; b) вы вынуждены были сделать.

Yesterday	I **was to …**	in the morning
Last week		on Tuesday, etc.

Yesterday	**I had to** …	at 12 o'clock
Last week		on Monday, etc.

2.6. Модальные глаголы и их эквиваленты

2.6.1. Модальные глаголы

Модальные глаголы выражают не действие или состояние, а отношение говорящего к действию или состоянию, выраженному неопределенной формой основного глагола (возможность, вероятность, необходимость его совершения). К модальным глаголам относятся: **can, may, must, should, ought to**. Модальные глаголы имеют следующие отличия от остальных глаголов.

- Модальные глаголы не употребляются самостоятельно (кроме кратких ответов), а используются только в сочетании со смысловыми глаголами.
- Инфинитив, с которым сочетаются модальные глаголы, употребляется без частицы ***to***, кроме инфинитива, который следует за глаголом **ought** (**I can do it**).
- Модальные глаголы не имеют неличных форм – инфинитива, герундия и причастия и не имеют окончания -s в 3-м лице единственного числа (**He can do it**).
- Модальные глаголы не имеют ряда форм. Например, глаголы **can** и **may** имеют формы настоящего времени и формы прошедшего времени (**can** – **could**, **may** – **might**), а глаголы **must**, **ought** имеют одну только форму – настоящего времени.
- Вопросительная и отрицательная формы модальных глаголов в Present и Past Indefinite образуются без вспомогательного глагола **to do** (**can you do it?/could you do it**, **you may not smoke here**).

2.6.2. Основные значения модальных глаголов

- **Can** (**прошедшее время – could**) – ***мочь, уметь, иметь физическую возможность.***

You **can u**se disk defragmenter for it. – *Для этого вы **можете** воспользоваться дефрагментатором.*

Bill Gates **could write** computer programs when he was in the 8th grade. – *Билл Гейтс **умел писать** компьютерные программы, когда учился в 8-м классе.*

В отрицательной форме (**cannot/can't**) глагол **can** переводится на русский язык словами ***не могу, не может, нельзя*** и т. д.

It **cannot** be done. – *Это **нельзя** сделать.*

Can (could) с глаголами, обозначающими чувства и восприятия (**to see, to hear, to feel** и т. д.), не переводится.

Can you **hear** that strange noise? – *Вы слышите этот странный шум?*

Обратите внимание на перевод словосочетания cannot **but плюс инфинитив**, которое переводится как ***не могу не (не может не*** и т. д.).

I **cannot but agree** with you. – ***Нельзя не** согласиться с Вами.*

Конструкция **to be able to** (*быть способным, иметь возможность*) используется для замены **can** в будущем времени, а также в прошедшем времени со значением ***удалось***, ***получилось***.

The software developers **will be able to design** a bespoke solution for you. – *Разработчики ПО **смогут разработать** специальное решение для вас.*

I **was able to access** all my information. – ***Мне удалось получить доступ** ко всей своей информации.*

Упражнение 40. Прочтите и переведите следующий микротекст, обращая внимание на использование глагола **can**.

Mobile enterprise apps can change the way companies do business. Instead of[49] clunky laptops or stacks of paper, employees can use tablet computers in meetings to provide a visual snapshot of products or projections. Salespeople can access[50] up-to-the-minute inventory data needed to make a sale. They can also instantly record transactions in the company's system as they happen, rather than waiting until the end of the week when they can forget vital information.

• **May (прошедшее время – might) – *мочь (разрешено, имеется возможность что-либо сделать, предложение, просьба рекомендация).* Сравните: can – *всегда;* may – *иногда.***

You **may** use a dictionary. – **Вы *можете (вам разрешено*)** пользоваться словарем.

You **may** use a disk defragmenter just now. – *Вы **можете (есть возможность)** запустить дефрагментатор прямо сейчас.*

May I ask a question? (Ответ: You may – You may not). – ***Можно (разрешите)** задать вопрос? (*Ответ*: Можете – Нельзя).*

Обратите внимание! В менее официальной речи **may/might** в указанных выше значениях может заменяться глаголами **could** и **can**.

Could/can I ask you a question?

We **might/could/** buy an off-the-shelf system. – *Мы **могли бы** купить готовую систему.*

Примечание. В этом значении вместо недостающих форм **may** употребляется сочетание **to be allowed** с последующим инфинитивом с частицей ***to***.

He **has been allowed** to stay here. – *Ему **разрешили** остаться здесь.*

Упражнение 41. Прочтите и переведите следующий микротекст, обращая внимание на использование глагола **may**.

Now that virtualization has entered the enterprise computing (*обработка данных предприятия*) sphere, hardware configuration can be more complicated[51] than ever. Devices may need installation at several layers of the virtualization stack (*виртуальный стек*), and the system administrator may need to formulate policies (*правила*) that allow the hardware to be shared securely and fairly.

- **Must** выражает необходимость, моральную обязанность и соответствует в русском языке словам ***должен, нужно, надо***.

I **must** hurry, I must warn him of the danger. – *Я **должен** торопиться, я **должен** предупредить его об опасности.*

You **must** use the disk defragmenter monthly. – *Вы **должны** пользоваться дефрагментатором ежемесячно.*

Must not (mustn't) выражает строгий запрет, на русский язык переводится словами *«нельзя, не должен».*

The departments **mustn't change** their software without notification. – *Отделам **нельзя менять** программное обеспечение без уведомления.*

Примечание. **Must** употребляется в отношении настоящего и будущего времени. В отношении прошедшего времени глагол must употребляется только в косвенной речи.

He decided he **must** speak to Doctor Page himself. – *Он решил, что **должен** поговорить с доктором Пейджем.*

Наряду с глаголом **must** и взамен его недостающих форм используется конструкция **have + to + V** (см. 2.4.).

Упражнение 42. Прочтите и переведите следующий микротекст, обращая внимание на использование глагола **must**.

As the wireless network expands, the growth in mobile digital services will place increasing pressure on the radio frequency spectrum – a limited resource. European R&D must develop innovative approaches and new standards that optimize how networks and devices use radio frequency. The spectrum must be managed well and shared[52] fairly between operators and technologies. Research in this area must look at industry standards and new techniques that can "squeeze" more and more data into the airwaves. Systems today and in the future must deliver the kinds of services and functionality that consumers and businesses demand, but at a competitive price.

- **Should = ought to** – ***следует, следовало бы***. В отличие от **must** эти глаголы выражают **долженствование в более мягкой форме**. **Это скорее рекомендация**.

You **should/ought to format** this disk. – *Вам **следовало бы** отформатировать этот диск.*

Do you think I **should apply** for this job? Yes, I think you **should**. – *Ты думаешь, мне следует подать заявление на эту работу? Да, я думаю, что тебе следует это сделать.*

Обратите внимание на конструкцию had better do something, которая по значению схожа со значениями глаголов **should = ought to**.

You don't look very well. You **had better (you'd) better? not go** to work today. – *Ты выглядишь не очень хорошо. Тебе было бы лучше не ходить сегодня на работу.*

Should употребляется для выражения эмоциональности высказывания в вопросительных предложениях, начинающихся с **who, how, why**.

How **should** I **know**? – *Откуда мне знать*?

- **Shall (исходная форма should)** может употребляться во 2-м и 3-м лице единственного лица в утвердительном и отрицательном предложениях как модальный глагол для выражения приказания, долженствования, необходимости.

It is a law that homeless people **shall not** sleep by night in the parks. – *По закону бездомным **не разрешается** спать ночью в парках.*

Shall в 1-м и 3-м лице единственного числа употребляется в вопросах с целью получения указаний или распоряжения от лица, к которому обращен вопрос.

Shall we read? – *Нам читать? (*дословно: *должны ли мы читать?)*

Упражнение 43. Прочтите и переведите следующий микротекст, обращая внимание на использование глагола **should**.

But the logistics of setting up an app system has other challenges as well. Should apps be outsourced or created in-house? Should the company create an internal program, similar to iTunes, where apps can be downloaded? How should you ensure[53] updates are continually installed onto devices? And, most importantly, how do you persuade employees to use apps?

2.6.3. Другие значения модальных глаголов при употреблении их с Simple Infinitive и Perfect Infinitive

2.6.3.1. Формы инфинитива

Инфинитив, наряду с причастием и герундием, относится к неличным формам глагола. Неличные формы, подобно личным формам, имеют показатели залога (активный и/или пассивный) и аспекта (Simple/Indefinite,

Perfect, Continuous, Perfect Continuous). Однако неличные формы глагола не выражают лица, числа, наклонения. Они не могут выражать действия, а лишь указывают, является ли действие или состояние, выраженное ими, одновременным с действием или состоянием, выраженным личной формой глагола, или предшествует ему. Однако инфинитив в английском языке имеет разветвленную систему форм, которые обозначают действия разного вида.

Залог	Форма	Пример	Перевод
Active	**Simple**	I am glad to speak to you	Я рад говорить с Вами (всегда, когда говорю)
	Continuous	I am glad to be speaking to you	Рад, что сейчас разговариваю с Вами
	Perfect	I am glad to have spoken to you	Рад, что поговорил с Вами
	Perfect Continuous	I am glad to have been speaking to you	Рад, что уже давно (все это время) разговариваю с Вами
Passive	**Simple**	I am glad to be told the news	Всегда рад, когда мне рассказывают новости
	Perfect	I am glad to have been told the news	Рад, что мне рассказали новости

Упражнение 44. Раскройте скобки, употребляя требующуюся форму инфинитива.

1. He seems (to read) a lot. 2. He seems (to read) now. 3. He seems (to read) since morning. 4. He seems (to read) all the books in the library.

Упражнение 45. Переведите на русский язык, обращая внимание на **Perfect Infinitive**. **Не забывайте**, что перфектные формы инфинитива всегда употребляются для выражения действия, которое предшествует действию, обозначенному глаголом-сказуемым в предложении.

1. I am awfully glad to have met you. 2. Sorry to have placed you in this disagreeable situation. 3. I am very happy to have had the pleasure of making you acquaintance. 4. I am sorry to have kept you waiting. 5. Sorry not to have noticed you. 6. We were delighted to have been brought to the theatre.

2.6.3.2. Употребление модальных глаголов в сочетании с Simple Infinitive и Perfect Infinitive для выражения предположения, сомнения, неуверенности в возможности действия, упрека, замечания, сомнения

Could/may/might используются для выражения предположения, часто основанного на каких-либо фактах, признаках. На русский язык переводится словами ***возможно***, ***может***, ***может быть***, ***по-видимому***, ***вероятно***.

The application is very slow. There **could be** bugs in it. – *Приложение работает очень медленно. **Возможно**, в нем **есть** ошибки.*

A receiver for an analog communication **may** include a signal filtering bank and signal demodulation. – *Приемное устройство для аналоговой связи **может** включать в себя фильтрующий блок и устройство для демодуляции сигналов.*

May/might может использоваться для обозначения сомнения, неуверенности со стороны говорящего в возможности действия, выраженного последующим инфинитивом. Разница в значении **may** и **might** в данном случае состоит в том, что **might** выражает более сильную степень сомнения, неуверенности со стороны говорящего, чем **may**.

He **may (might) come** today. – *Он, **может быть, придет с**егодня.*

В сочетании с **Perfect Infinitive** эти глаголы употребляется в отношении прошедшего времени.

So you say he **may have been** one of those two passengers. – *Итак, вы говорите, что он, **может быть,** был одним из тех двух пассажиров.*

Can/could/may/might в отрицательной форме в сочетании с перфектным инфинитивом выражают сомнение в возможности совершения действия в прошлом и обычно переводятся словами ***не может быть (чтобы)***.

He **cannot (couldn't) have made** such a mistake. – ***Не может быть, чтобы** он допустил такую ошибку.*

Might может употребляться для выражения **упрека, замечания**.

You **might do** it yourself. – *Вы **могли бы сделать** это сами.*

You **might have told** me about it long ago. – *Вы **могли бы** давно **сказать** мне об этом.*

Must может иметь значение **вероятности, возможности действия**. В этом значении он переводится на русский язык ***должно быть, наверняка, вероятно***.

Wait a little, the rain **must stop** soon. – *Подождите немного, дождь, **вероятно**, скоро **перестанет**.*

The phone rang but I didn't hear it. I **must have been asleep**. – *Телефон звонил, но я не слышал. **Должно быть**, я **спал**.*

Must и **should** ***могут*** выражать логический вывод, заключение.

There **must be** some mistake. We did not order this application. – ***Должно быть**, это ошибка. Мы не заказывали эту программу.*

He **should be** in the office now. – *Он **должен быть** в офисе сейчас/Он наверняка сейчас в офисе.*

Should (ought to) в сочетании с **Perfect Infinitive** употребляются в отношении прошедшего времени, и все сочетание указывает на то, что действие не было завершено.

You **ought to have done** it. – *Вам **следовало бы сделать** сразу же (но Вы не сделали).*

Ought to может выражать вероятность, предположение, возможность действия, обозначенного последующим инфинитивом, и в этом случае переводится на русский язык словами ***должно быть*** или ***должен***.

The train **ought to have left** – *поезд, **должно быть**, уже **ушел***.

Обзорная таблица использования модальных глаголов

Модальный глагол	Примеры
Can/could – *мочь/уметь может быть*	They **can** control their own budget. – *Они могут контролировать свой бюджет.* He gave up his old job so he **could** work for us. – *Он бросил свою прежнюю работу, чтобы работать на нас.* **Could/can** I ask you? – *Могу я Вас спросить?* The number of calls to the IT Helpdesk **can be** very high. – *Количество звонков в службу техподдержки IT может быть очень высоким.*
May/might – *мочь/иметь разрешение вероятно/по всей видимости*	**May** I have another cup of tea? – *Можно мне еще чашку кофе?* China **may/might** become a major economic power. – *Китай может стать большой экономической силой.* We'd better phone tomorrow, they **might** be eating their dinner now. – *Лучше мы позвоним завтра, сейчас они могут ужинать.* He **might have updated** his software. – *По всей видимости, он обновил свое программное обеспечение.*
Must – *должен/ должно быть*	We **must** say good-by now. – *Сейчас мы должны попрощаться.* He **must have updated** his software. – *Он, должно быть, обновил свою программу.*
Should/ ought to – *следует/должно быть/следовало бы*	I think we **shoul**d check everything again. – *Я думаю, нам следует все проверить еще раз.* You **ought to** hire a skilled worker. – *Следует/нужно нанять опытного работника.* They **should have tested** the device. – Им следовало бы проверить устройство раньше.
Shall – *должен*	**Shall I** do that or will you. – *Мне это сделать или ты сделаешь?* You **shall** correct your fault. – *Вы должны исправить свою ошибку.*

Упражнение 46. Выполните упражнения, обращая внимание на модальные глаголы.

I. Переведите предложения с модальными глаголами на русский язык.

1. Could I use your computer? 2. You shouldn't send sensitive data over the network. 3. Tom should use a strong password. 4. You mustn't smoke here. 5. You can't enter the account without a password. 6. May I see your working license? Certainly, you may. 7. Shall I help you with the encryption program? 8. A public Wi-Fi connection might be unencrypted. 9. He might have solved this problem.

II. Заполните пропуск, выбрав подходящий модальный глагол.

1. He lost all his money, so he _____ to make payments.

a) was unable; b) was allowed; c) was able; d) cannot.

2. It's rather cold today. Shall I put on a coat?

Sure, you _____ be wearing not only a coat, but a cardigan as well.

a) must; b) can; c) should; d) may.

3. How could they manage to get much profit?

They _____ replace their old equipment.

a) had to; b) should; c) must; d) might.

4. It's dangerous to go into deep water if you _____ swim.

a) should not; b) cannot; c) may not; d) must not.

5. The user _____ click on objects with the mouse, instead of typing in commands.

a) should not; b) must; c) can; d) cannot.

Упражнение 47. Прочтите предложения. Назовите номера предложений, в которых модальный глагол **must** выражает предположение или вероятность. Переведите эти предложения на русский язык.

1. This phenomenon must be described in detail. 2. The temperature must have been specified before. 3. I must have met that man somewhere. 4. This effect must have caused some change in the atomic structure. 5. Some new considerations must be involved into this study. 6. This evidence must provide some new facts. 7. This value must have been included[54] into the above considerations. 8. They must have referred to the figures above. 9. These phenomena must be distinguished carefully.

2.6.4. Глаголы, которые могут выражать модальность: need, would

• Глагол **need** (*нуждаться, требоваться*), в отличие от собственно модальных глаголов, имеет все три формы времени (настоящее, прошедшее, будущее), окончание **-(e)s** в 3-м лице единственного лица, а также может употребляться как в действительном, так и в страдательном залоге.

В вопросительных, отрицательных, а также в утвердительных предложениях (часто с наречиями **hardly**, **scarcely** – *едва ли*) он выражает необходимость совершения действия и переводится «*нужно, не нужно, едва ли*».

He needs a new smart phone. – *Ему **нужен** новый смартфон.*

I **will need** your help. – *Мне **потребуется** твоя помощь.*

New motors **are needed** for this work. – *Для этой работы **требуются** новые двигатели.*

You **need hardly** remind me of it. – *Вам **едва ли надо** напоминать мне об этом.*

Конструкция **you needn't do** означает «нет необходимости, чтобы ты сделал что-то».

You've got plenty of time. **You needn't hurry.** – *У тебя уйма времени и нет необходимости торопиться.*

Обратите внимание! Вторую часть вышеприведенного высказывания можно выразить по-другому: **You don't need to hurry.**

Глагол **need** может употребляться с перфектным инфинитивом. В этом случае высказывание означает, что кто-то что-либо сделал, хотя не было никакой необходимости делать это.

Thank you for doing the washing-up but you **needn't have done** it really. I was going to do it later. – *Спасибо, что помыл посуду, но тебе действительно не следовало было делать это. Я собирался сделать это позднее.*

- Глагол **would** (прошедшее время от **will**) не имеет окончания ***-(e)s*** в 3-м лице единственного числа, не может употребляться в страдательном залоге и в качестве модального имеет значение вероятности или необходимости действия: ***мог бы, вероятно, может, должен***.

In the near future, there **would be** a great demand for computer specialists. – *В ближайшем будущем, **вероятно**, **будет** большой спрос на специалистов-компьютерщиков.*

A voltmeter connected across CD **would read** 8 volts. – *Вольтметр, подсоединенный к точкам СД, **дает (вероятно, должен дать)** отсчет (показание) в 8 вольт.*

Кроме выражения модальности, **would** может употребляться в следующих случаях.

- **Для образования сослагательного наклонения.**

I **would like**. – *Я **хотел бы***. **Would you like** a cup of coffee? – ***Не хотели бы** выпить чашку кофе?*

- **Для образования относительного будущего времени** по правилу согласования времен; в этом случае указывает на будущее время.

Man always thought that he **would conquer** space. – *Человек всегда верил, что он **завоюет** космическое пространство.*

- Для описания действий (привычек), которые **регулярно происходили в прошлом**, но более не происходят, и переводится словами ***как правило, по обыкновению, обычно, регулярно, часто***.

In summer, if the weather was fine, we **would all get up early and go for a swim**. – *Летом, если погода была хорошая, мы, **как правило, рано вставали и шли купаться***.

Примечание. В этом употреблении значение глагола **would** близко к значению оборота **used to do**, употребляемого для обозначения привычных действий и состояний. Этот оборот часто переводится с добавлением слова ***«раньше»***.

I used to play tennis a lot, but now I am too lazy. – ***Раньше** я (регулярно) много играл в теннис, но теперь я слишком ленив для этого.*

Обратите также внимание на приведенные ниже конструкции.

– **Be used to + ing** – действие может относиться к прошедшему или настоящему времени, а сама конструкция имеет значение ***«иметь привычку к чему-то».***

I am used to liv**ing** in New York. – *Я **привык** жить в Нью-Йорке.*

I am used to New-York. – *Я **привык** к Нью-Йорку.*

– **Get used to + ing** – действие может относиться к прошедшему, настоящему или будущему времени, а сама конструкция имеет значение ***«приобретать привычку к чему-то»***.

I **got used to** work**ing** out. – *Я **привык** заниматься спортом.*

You'll get used to this place. – *Ты **привыкнешь** к этому месту.*

Обратите внимание! Для выражения обычности повторяемости действия в настоящем времени может употребляться глагол **will**.

The experiment **will not show** all the aftereffects of this procedure. – *Эксперимент **обычно** не показывает последствий этого процесса.*

- **Would** употребляется во всех лицах в отрицательных предложениях для выражения упорного нежелания, отказа выполнить действие, обозначенное инфинитивом последующего глагола.

He **wouldn't listen** to me, and I wanted to warn him! – *Он **не слушал** (не захотел, отказался слушать), а я хотела предупредить его!*

The door **would not open**. – *Дверь не открывалась.*

- **Would** употребляется во 2-м лице для выражения вежливой просьбы.

Would you **mind to show** me your contactless payment system? – ***Покажите** мне, **пожалуйста**, Вашу бесконтактную систему оплаты?*

Would you pass the salt please? – *Не передадите соль?*

Сравните также. Will you **please be** quiet! – *Тише, пожалуйста!*

Упражнение 48. Прочтите и переведите следующие предложения, обращая внимание на модальные глаголы и глаголы, которые могут иметь модальные значения.

1. A data template (*шаблон с информацией*) in the software needs to be constructed before the end of next month. 2. About 50 years ago pilots would fly only in good weather. 3. They would walk streets for hours. 4. The roof is rotten. It would crash upon them all. 5. There was something wrong with computer, it wouldn't switch on. 6. You needn't have done it. 7. The weather ought to be fine tomorrow. 8. It occurred to Tom that he must have said the wrong thing. 9. This theorem may have been proved centuries ago. 10. The requirement may have been met in the previous experiment. 11. Mercury must have lost most of its atmosphere while it was still hot. 12. A positive particle moving upward may have produced this track. 13. I need not to tell you how impotent that is. 14. A body

may be divided into separate tiny particles. 15. From time to time a large rock would roll down into the valley. 16. Would you lend me your bag? 17. Tom used to travel a lot. 18. Would you mind to give me your bag? 19. Will you take my bag please? 20. It might rain. We'd better take an umbrella. 21. This malware will not erase any documents files from your hard disc. 22. Under such condition this device would not work properly. 23. I used to get up at 7. 24. I am used to getting up at 7. 25. I never used watch TV. 26. She wasn't used to driving. 27. He will get used to his new tablet PC.

2.6.5. Устойчивые словосочетания, выражающие модальность

Модальность в английском языке может быть выражена с помощью некоторых словосочетаний, например: **to be able** (*быть способным*), **it is necessary** (*необходимо*), **to be bound** (*должен, вынужден, обязательно, непременно, вероятно).*

Сравните также: to be likely.

He **is likely (= is bound**) to be a good student. – ***Вероятно,*** *он хороший студент.*

Таким образом, конструкция **to be able** близка по значению глаголу **can**. Конструкция **it is necessary** может заменить глагол **must**. А значение сочетания **to be bound** в зависимости от контекста соответствует значению либо глагола **must**, либо глагола **may**.

Упражнение 49. Переведите предложения, обращая внимание на устойчивые словосочетания, выражающие модальность.

1. It is necessary to develop a new model. 2. Space rockets are bound to assist in advancing our knowledge of the universe. 3. The mouse is bound to disappear in the next few years. 4. The mouse is likely to disappear in the next few years. 5. We also need not to be able to combine these two values. 6. It is necessary to remove data that we don't need. 7. Tom is bound to know a lot about this problem. 8. I will be able to upgrade this construction.

Примечание. Все рассмотренные выше случаи выражения долженствования можно расположить по мере убывания силы долженствования в следующем порядке:

must, shall (в значении долженствования, запрета) – это самые сильные средства выражения долженствования, **should, have to, be to** – более слабые средства.

2.6.6. Проверочные упражнения на знание модальных глаголов и их эквивалентов

Упражнение 50. Прочтите и переведите на русский язык предложения, обращая внимание на разные значения модальных глаголов и их эквивалентов.

1. Could I use your computer? 2. Tom must use a strong password. 3. You shouldn't send sensitive[55] data over the network. 4. I didn't have to scan all the files yesterday. 5. A virus can damage files on your computer. 6. I will be able to speak English perfect very soon. 7. Tom should make this program. 8. I think you'd better call them straightaway. 9. May I see your working license? 10. Shall I help you with your computer's security? 11. Would you like the latest update? 12. I had to email some urgent letters. 13. Unfortunately, I need to work this evening. 14. The object of the experiment is to test the results obtained. You are to provide the necessary equipment for it. 15. They couldn't have applied that equation. They ought to have proved it mathematically. 16. They needn't know the exact temperature to make the plot. 17. He can't have explained these phenomena in this way. 18. The values given above must be converted into the English units. 19. They should have calculated the distance travelled more accurately. 20. People and organizations may also want to protect private or sensitive data from those who deliberately enter into areas without authorization. 21. He must have bought a new laptop. 22. The rate of data transmission does not have to be large on this pipe.

Упражнение 51. Прочтите и переведите на русский язык предложения, содержащие модальные глаголы и их эквиваленты.

1. The central systems must handle many functions. 2. The following factors must be considered. 3. You must not execute the model code in this manner. 4. Time available has to be used for processing lower priority tasks. 5. A real – time program does not have to differ from the planned one. 6. You should study the instruction. 7. The evolution of the computer hardware is to influence programming languages. 8. The Internet is to offer a rapidly growing collection of information. 9. Much work can be accomplished on such a terminal without keyboarding information. 10. The new device would become more powerful. 11. I hope I might be able to travel and use my languages. 12. One gets used to such weather.

Упражнение 52. Объясните употребление глаголов **to be, to have**. Переведите предложения.

1. Engineers have to do it. 2. The programmer had to do it. 3. Clients will have to do it. 4. Most firewall technologies have to do it. 5. The hacker attack is

to be stopped. 6. The train was to stop there. 7. Packet filters were to have stopped it. 8. The train is to be staying here. 9. The specialist is to acquire a new data. 10. The user's aim is to acquire a new data. 11. This method is to be reported in more detail. 12. The temperature had to be raised to 150 degrees. 13. The other devices had to be delivered over next months, and the whole line will come into service next summer. 14. The problem now is to find the most effective way to convert the minimum expenses into the maximum profit.

Упражнение 53. Преобразуйте предложения, содержащие модальные глаголы, a) в прошедшее время; b) в будущее время. Переведите предложения.

1. Computers **can** replace people in dull routine work. 2. The program is a set of instructions that **may** also include data. 3. Computer-controlled robots must increase the productivity of industry. 4. They can help in making different decisions. 5. The pupils may work with computers at the lessons. 6. Electric pulses can move at the speed of light. 7. Storage devices must have capacities for the input, output data and programs. 8. Business computers can perform to 100 million operations per second. 9. In order to[56] solve scientific problems researchers must deal with the language of science – mathematics. 10. Programmers must write applications programs in a way that computers can understand.

Упражнение 54. Из предложенных вариантов выберите правильный вариант.

1. A. I **can not see** why the machine stopped working.
   B. I **cannot see** why the machine stopped working.
2. A. I think you **may remember** me as I was the only Japanese in the group.
   B. I think you **can remembe**r me as I was the only Japanese in the group.
3. A. **Maybe** they have lost our address.
   B. **May be t**hey have lost our address.
4. A. In my opinion, the government **must do** something about the problem.
   B. In my opinion, the government **must to do** something about the problem.
5. A. People are not as careful as they **must be** and drop their litter in the streets.
   B. People are not as careful as they **should be** and drop their litter in the streets.
6. A. The people **needn't go** to the meeting if they don't want to.
   B. The people **mustn't go** to the meeting if they don't want to.
7. A. If I can't find her, she **must hide** somewhere.
   B. If I can't find her, she **must be hiding** somewhere.

8. A. I have friends who should love to stay at home, but they have to go to work.
   B. I have friends who would love to stay at home, but they have to go to work.
9. A. Some people might argue that a woman wouldn't work if she has children.
   B. Some people might argue that a woman shouldn't work if she has children.

Упражнение 55. Прочтите и переведите следующие микротексты, содержащие модальные глаголы.

Before you buy a laptop

As a mobile office worker you want a laptop that you can take with you easily. You need to be able to connect to the Internet and company networks in a variety of methods. The next important criteria when you buy a laptop are size and weight. The best choices for mobile office workers are thin & light laptops. Laptops meant *(предназначенные*) to replace desktop systems may be too heavy to carry for long periods of time but can provide features valuable to mobile professionals. Mobile office workers must accept that their laptop will be a prime target for theft. Making the decision for a laptop that includes security options can save you money and grief. As with all technology, mobile office technology is constantly changing and improving. If your laptop can't be upgraded it can become a hindrance (*помеха*) rather than an effective tool. And sometime you could be left without an efficient means of connecting to your company network or the Internet.

Installing and upgrading software

When new software is purchased, it must be installed and tested, often under several operating systems and on several types of hardware. Once the software is working correctly, users must be informed of its availability and location. As patches (*корректировка ошибок*) and security updates are released, they must be incorporated into the local environment. Local software and administrative scripts should be properly managed in a way that's compatible with the native upgrade procedures used on systems at your site. As this software evolves, new releases should be tested before being deployed to the entire site.

2.7. Придаточные условные предложения

В английском языке выделяют четыре типа условных придаточных предложений.

Тип предложения	Придаточное предложение	Главное предложение
0 тип **Изъявительное наклонение** **Общее условие –** выражает всем известную истину. Главное и придаточное предложения соотносятся с настоящим временем	Present Simple If you study well, *Если ты учишься хорошо*,	Present Simple you can go to college. *ты можешь пойти в колледж.*
	Present Simple **If** he **works** hard ***Если*** *он* ***будет*** *работать усердно,* **Обратите внимание!** В английском условном придаточном предложении не используется будущее время	Present Simple Will, may, can he **will pass** his exam. *он сдаст экзамен.*
I тип **Изъявительное наклонение** **Реальное условие** в настоящем или будущем. Если осуществляется действие условного придаточного предложения, то осуществляется действие и главного предложения. Переводится в форме будущего времени	Present Simple **If** he **works** hard ***Если*** *он* ***будет*** *работать усердно,* **Обратите внимание!** В английском условном придаточном предложении не используется будущее время	Future Simple / modal verbs will, may, can he **will pass** his exam. *он сдаст экзамен.*
II тип **Сослагательное наклонение** **Маловероятное условие** в настоящем или будущем. Переводится глаголом прошедшего времени в сослагательном наклонении с частицей «бы»	Past Simple (to be = were) **If** he **worked** had ***Если бы*** *он* ***работал*** *усердно,*	should (would, could, might) + Indefinite Infinitive без «to» he **would pass** his exam. *он* ***сдал бы*** *экзамен.*

Окончание таблицы

Тип предложения	Придаточное предложение	Главное предложение
III тип **Сослагательное наклонение** **Абсолютно нереальное условие в прошедшем.** Переводится как II тип глаголом прошедшего времени в сослагательном наклонении с частицей «бы»	Past Perfect **If** he **had worked** hard last term ***Если бы*** *он* ***работал*** *в прошлом семестре усердно,* **Обратите внимание!** При переводе условных придаточных предложений II и III типа на русский язык частица «бы» используется как в главной, так и в придаточной части предложения	should (would, could, might) + Perfect Infinitive без «to» he **would have passed** his exam. *он* ***сдал бы*** *экзамен.*

В условных предложениях помимо **would** могут употребляться **could** и **might** с соответствующим изменением смысла высказывания.

If we caught a taxi now, we **might** get there in time. – *Если бы мы сейчас поймали такси, мы, может быть, доехали бы туда вовремя.*

I'd be very happy if you **could** come to our party. – *Я был бы очень счастлив, если бы вы пришли на нашу вечеринку.*

Иногда встречаются смешанные предложения, в которых главное и придаточное предложения относятся к разным типам: **If** I **were** still **using** the old server, we **could have lost** all our data yesterday (2-й и 3-й типы).

Обратите внимание! Форма **were** используется для всех лиц и чисел.

Союзы в условных придаточных предложениях: **if –** *если,* **unless** – *если* ***не***, **provided/providing (that)** – *при условии, что (если).* А также: **in case (that) – в случае если**; **on condition (that)** – *при условии, что;* **suppose/supposing (that)** – *если бы, в случае.*

Обратите внимание! При переводе условных придаточных предложений с союзом ***unless*** на русский язык всегда употребляется отрицание **НЕ**.

Gases are characterized by extreme lightness **unless** they are highly compressed. – *Газы характеризуются чрезвычайной легкостью,* ***если*** *они* ***не*** *находятся в состоянии сильного сжатия.*

Часто союз ***provided/providing (that)*** путают с глаголом **to provide** – ***обеспечивать, снабжать, поставить.*** Союз всегда соединяет две части предложения, в каждой из которых есть свое подлежащее и свое сказуемое.

Сравните. You are **to provide** the necessary equipment for it (provide – глагол = *поставить).*

Provided the temperature of the air were too low, the length of the standard should decrease (provided – союз – *при условии, что*).

В английских придаточных условных предложениях перечисленные выше союзы могут быть опущены, когда в придаточном предложении имеются глаголы **were, had, should, could, might.** Тогда происходит инверсия, и на первое место перед подлежащим выносятся эти глаголы, они как бы вытесняют союз с первого места придаточного условного предложения. На русский язык такие бессоюзные придаточные условные предложения переводятся «***если бы ..., то бы***».

Were the systems compatible, there **wouldn't be** a problem. – ***Если бы*** *системы были совместимы,* ***то*** *не было* ***бы*** *проблемы.*

Обратите внимание! В русском языке бессоюзные придаточные условные предложения встречаются только в разговорной речи, например: *Сдашь экзамен – получишь подарок.*

Упражнение 56. Назовите номера предложений, выражающих нереальное условие (тип II). Переведите их на русский язык.

1. I'll speak to him, if I have a chance. 2. In case I saw him tomorrow, I would certainly speak to him. 3. The secretary will help you, if you have any difficulty. 4. Unless you do it well, you will always get wrong results. 5. If the temperature humidity of air changed, the standard shouldn't be accurate enough. 6. If the temperature of the air were too low, the length of the standard should decrease.

Упражнение 57. Назовите номера предложений, выражающих нереальное условие (тип III). Переведите их на русский язык.

1. Unless various units of the MKS system had possessed simple and logical relationships, they wouldn't have been the basis of the SI Units. 2. Provided conversions of one unit to another in the British system had been carried out by shifts of a decimal point, it shouldn't have been so hard and monotonous job. 3. If any law of physics were wrong, this should cause a change in our standards of length and time. 4. Unless the scientists had developed atomic clocks, we wouldn't have had so accurate standard of time.

Упражнение 58. Переведите на русский язык, обращая внимание на перевод придаточных условных предложений.

1. You will not succeed with your experiments, unless you work hard. 2. Supposing no data are given to us, what shall we do? 3. We could wait for you provided you came on time. 4. If I were you, I wouldn't promise to come on time. 5. If I made a promise to come, I would certainly keep it. 6. If I hadn't made a promise to come, I wouldn't have kept you waiting for me. 7. Hadn't

this assumption been made, we wouldn't have derived these data from experiments alone. 8. Should we test the hypothesis in practice, we would get the results desired. 9. If we should add one or more electrons to the outer part of the atom, the atom would have a negative electrical charge. 10. If there had been no such accident with the uranium bisulphate, the discovery of radioactivity might have been postponed for a long period of time.

Примечание. Обратите внимание на употребление в текстах эллиптических предложений, начинающихся с **if**, например:

If (when, where) necessary/needed/ и т. д., we use a more powerful computer. – *Если/ когда/там, где это необходимо, мы можем использовать более мощный компьютер.*

Упражнение 59. Определите тип придаточных условных предложений и переведите их.

1. If you give me your address, I shall write you a letter. 2. If it rains, we shall have to stay home. 3. If my friend is at home, he will tell us what to do. 4. If the router fails or if too many people try to use high-bandwidth applications at the same time, however, users can experience[57] interference[58] or lose their connections. 5. If you already have several computers networked in your home, you can create a wireless network with a wireless access point**.** 6. If he worked hard, he would have achieved great progress. 7. It would be rather unusual if they fulfilled our request now. 8. If we lost power, our own back-up power systems would start and we wouldn't lose power at all. 9. If there were a problem with the cooling systems, our managers would see alarms about that before it affected the equipment. So your downtime (*время простоя*) would be a matter of minutes. 10. If your teacher had introduced the law of marker equilibrium at the previous lecture, you could have made use of it for evaluating the result. 11. He could readily evaluate the formula, provided he applied his knowledge of laws of economy. 12. Provided that they all have wireless adapters, several devices can use one router to connect to the Internet. 13. The experiments show agreement with the theory provided the conditions are met. 14. Don't expect users to report problems to you unless the issues[59] are severe. 15. Unless you're looking for a place to use your laptop, you may not even notice when you're in a hotspot. 16. The system will fail to perform unless the requirements are satisfied.[60] 17. Unless other conditions are defined specifically, we shall use the term "state" to represent an equilibrium state. 18. Should we fail to replace the legacy hardware we would have problems with compatibility. 19. Were there a problem with one of the servers we would isolate it and change it straight away. 20. Had one telecoms service lost connectivity they would have used the other network POP. 21. Had the air conditioning gone wrong the temperature alarm would have gone off. 22. Should anything terrible occur at least you would have a copy of all your data in another place. 23. Unless you are studying engineering, you

don't need to become a computer system architect[61]. 24. If possible, we could meet at the station.

Упражнение 60. Раскройте скобки, употребляя глаголы в требующейся форме.

1. If I were a famous singer, I (to get) a lot of flowers every day. 2. If he is free tomorrow, he certainly (to come) to our party. 3. If she (to ask) me yesterday, I should certainly have told her all about it. 4. If you really loved music, you (to go) to the museum with us. 5. If you had not wasted so much time, you (not to miss) the train. 6. If you (not to miss) the train, you have arrived in time. 7. If I (know) the result now, I would phone her immediately. 8. If I had the money, I (invest) in some new multimedia software. 9. If I could afford it, I (buy) a new game console.

3. ПОДЛЕЖАЩЕЕ (THE SUBJECT)

Подлежащее является главным членом предложения и чаще всего обозначает предмет или лицо (реже – процесс, действие или состояние) и отвечает на вопрос кто?/что? В предложении оно стоит слева от сказуемого, кроме тех случаев, когда подлежащее отсутствует (в повелительном наклонении: **Open the door. Let him play the piano. Be careful!**

Подлежащее может быть представлено различными частями речи – существительным, местоимением, инфинитивом, герундием, придаточными предложениями и т. д.

Подлежащее может быть также формальным, т. е. непереводимым, занимающим лишь место перед сказуемым, поскольку последнее по законам английского языка не может стоять в начале предложения или сразу после обстоятельства.

3.1. Распознавание подлежащего

Упражнение 61. Определите, какое из выделенных слов является подлежащим.

1. **The text** translated by **the student** is very difficult. 2. **Who** insisted on **the experiment** is still not clear to me. 3. **It** is **cold**. 4. **One** must **be** very careful. 5. **To test this method** is **our task.** 6. **Skating** is **my favorite sport.** 7. **IT specialist** is supposed **to do** this work.

3.2. Способы выражения подлежащего

3.2.1. Местоимение it в функции формального подлежащего

It может выступать в предложении как личное местоимение (переводится – *он, она, оно, ему, ей, ее,* и т. д.) или как указательное местоимение (*это*), например: **It** is a book. **It** is on the shelf. Read **it.** – ***Это****/вот книга.* ***Она*** *на полке. Читайте* ***ее****.*

Очень часто **it** располагается в начале предложения перед сказуемым, играя роль формального подлежащего. Такая функция **it** характерна для безличных предложений, обозначающих времена года, время суток, явления природы, душевное или физическое самочувствие человека, а также для безличных конструкций, за которыми обычно следуют инфинитивы или придаточные предложения. В этом случае **it** не переводится.

It is winter. **It** is cold. **It** is 10 o'clock now. – *Зима. Холодно. Сейчас 10 часов.*

It is important to emphasize this information. – *Важно выделить эту информацию.*

It is expected that software will be cheaper. – *Ожидается, что программное обеспечение будет дешевле.*

В технических текстах **it** в функции формального (непереводимого) подлежащего чаще всего располагается перед глаголом **to be** (см. пример выше), однако может стоять и перед другими глаголами, например:

It often **happens** that the engine stops. – *Часто случается, что двигатель глохнет*.

It remains to use this technique. – *Остается (только) использовать этот метод.*

Если предложение начинается с обстоятельства, то формальное подлежащее **it** располагается в середине предложения перед сказуемым.

Today **it** is difficult to imagine our life without electronics. It surrounds us everywhere. – *Сегодня трудно представить нашу жизнь без электроники. Она окружает нас везде.*

Обратите внимание! It может стоять в середине предложения после сказуемого, когда выполняет функцию формального дополнения. На русский язык не переводится.

Some applications make **it** possible to see a person at the other end of the line. – *Некоторые приложения дают возможность (дословно – делают возможным) видеть человека на другом конце линии.*

Упражнение 62. Прочтите и переведите следующие предложения, обращая внимание на перевод **it** в функции формального подлежащего.

1. It is necessary to test these devices. 2. It is proposed to help computers "read" and use the Web in a more sophisticated way. 3. It was obvious that something important had happened. 4. It should be noticed that learning on a computer can be fun. 5. It is well-known that the quick development of electronics began with the invention of transistors. 6. It is clear this equipment is too expensive. 7. It's a bit embarrassing charging my phone in a customer's office. 8. It's not very convenient only being able to access all information when I'm in the office. 9. It is helpful for a network administrator to know the pros and cons of different network topologies when putting together a network.

Упражнение 63. Прочтите и переведите следующие предложения, обращая внимание на перевод **it** в различных функциях.

1. It is considered that computers have many remarkable powers. 2. It is interesting to note that computers are widely used in medicine. 3. Today it is difficult to imagine our life without electronics. It surrounds us everywhere. 4. It can be seen that the processes performed by a digital computer are essentially simple. 5. It was not difficult for the pupils to understand the function of the mouse in computer operation. 6. Some users find it mare natural and fun to use a stylus to click on objects rather than a mouse or touchpad. 7. It is an urgent problem. 8. It is required that the programmer should code the instructions of the program in the appropriate sequence. 9. We shall try to make it clear why computer control is necessary in this line of production. 10. The vacuum tube was ideal for use in computers. It had no mechanical moving parts. 11. Another advantage of the transistor is its long life. 12. It follows that the method of investigations was not discussed. 13. We found it necessary to control the whole process. 14. The supposition (*предположение)* was correct and it was scientifically proved.

Упражнение 64. Переведите следующие предложения на английский язык, употребляя (где это требуется) ***it***.

1. Сегодня я хочу рассказать Вам об этом ноутбуке. 2. Он небольшой, но достаточно мощный и надежный. 3. Его функции представлены на этой таблице. 4. Очень важно использовать такие компьютеры в небольших фирмах. 5. Это поможет решить многие проблемы. 6. Если это необходимо, вы можете всегда брать его с собой. 7. Такой ноутбук делает возможным обрабатывать большое количество информации.

3.2.2. Местоимение one в функции формального подлежащего

One может выполнять функцию формального подлежащего, чаще всего в сочетании с модальными глаголами; на русский язык не переводится: **one must** – *нужно*, **one should/ought to** – *следует*, **one can/may** – *можно*, **one cannot** – *нельзя*.

One should use a new method, not the old one. – ***Следует*** *использовать новый метод, а не старый.*

Обратите внимание! В функции формального подлежащего **one** может также употребляться в сочетании с немодальными глаголами в 3-м лице единственного лица.

If **one wants** some information to be sent rapidly one sends it by computer. – *Если* ***хотят/если захотеть****, чтобы информация была отправлена очень быстро, ее* ***отправляют*** *с помощью компьютера.*

Упражнение 65. Прочтите и переведите следующие предложения, обращая внимание на перевод формального подлежащего **one**.

1. To get good results one must work hard. 2. One can easily imagine how wide can be the use of a miniature radiotelephone. 3. One can easily solve a difficult problem using a computer. 4. To file the documents one should collect them together and arrange them into alphabetical order. 5. One ought to know that the electric cell is a device that transforms chemical energy into electrical. 6. One must know that a high – frequency current radiates electromagnetic energy. 7. One may say that the "cloud" and cloud computing are among the buzz words of the year. 8. The battery is often easily replaceable, and one may replace it. 9. One cannot say that the concept of cloud computing is new. 10. One might have to be a little careful with this problem. 11. One believes that this device is simple. 12. One would think that multimode fiber would have a greater carrying capacity; however, just the opposite is true. 13. One regards[62] this method as being unacceptable. 14. The Ethernet works perfectly, when one takes preventive measures.

3.2.3. There в функции формального подлежащего

There, за которым следуют глаголы, имеющие значение возникновения, становления, существования, выполняет в предложении роль формального подлежащего. При переводе значение этих глаголов сохраняется, например*:* **to arise** – *возникать, появляться,* **to appear** – *появляться,* **to come** – *приходить, приезжать,* **to enter** – *входить,* **to exist** – *существовать,* **to live** – *жить,* **to follow** – *следовать,* **to remain** – *оставаться,* **to seem** – *казаться,* **to take place** – *происходить.*

There still **remained** much work to do. – *Все еще* ***оставалось*** *сделать много работы.*

Обратите внимание! Следует различать **there** a) в функции формального подлежащего перед глаголами, имеющими значение возникновения, становления, существования; b) в качестве наречия (*там/здесь/на этом месте, вот*): I see a girl **there**. – *Я вижу там девочку*.

Упражнение 66. Прочтите и переведите следующие предложения, обращая внимание на функции и перевод **there**.

1. There followed a new series of experiments. 2. There are two kinds of errors or bugs with which programmers must deal. 3. He came to the fourth chapter and there he stopped. 4. With the discovery of laser and the development of coherent optics there appeared a new way of concentrating energy in plasma. 5. There appear to be no exceptions in the data in Table 1. 6. There appeared a new type of integrated circuits, microwave integrated circuit. 7. There goes the secretary, he will answer your questions.

3.2.4. Инфинитив в функции подлежащего

Инфинитив с поясняющими его словами в функции подлежащего располагаются в предложении перед сказуемым и, как правило, переводится на русский язык отглагольным существительным или глаголом в неопределенной форме. В роли сказуемого в таких предложениях чаще всего выступают следующие глаголы: **be, require, mean, seem**.

To complete this experiment will not take much time. – ***Завершение*** *этого эксперимента не займет много времени/****Завершить*** *этот эксперимент не займет много времени.*

Обратите внимание! Следует различать инфинитив в функции подлежащего и инфинитив в функции обстоятельства, расположенный в начале предложения. В этом случае после инфинитива в функции обстоятельства перед сказуемым должно стоять подлежащее.

Сравните. To complete this experiment **we** need much time. – *Чтобы завершить этот эксперимент, нам требуется время.*

Упражнение 67. Прочтите и переведите следующие предложения, обращая внимание на инфинитив в функции подлежащего.

1. To fulfil the required condition was out of my power. 2. To measure the velocity of cathode rays was one of the objects[63] of Thomson's work. 3. To transmit a message requires some energy. 4. To convert an analog signal into digital form requires a process of sampling (*выборка, дискретизация).* 5. To connect two plates with copper wire means to form a path for electron flow. 6. To move from one astronomical body to another means to overcome gravitations forces. 7. To give the automatic solution of the set of problems is the main task of a computer.

Упражнение 68. Выберите предложения в которых инфинитив выступает в функции подлежащего. Сделайте грамматический анализ предложений. Переведите их на русский язык.

1. To see things in a simple way is the job of a physicist. 2. To understand the problem we must involve one of new phenomenon. 3. To process this information we need a powerful computer. 4. To conduct an experiment of this kind seems nearly impossible. 5. To solve the problem would justify all the costs. 6. To store a huge number of data he bought a new computer. 7. To interpret these results in terms of your concept is rather difficult. 8. To move from packet-based services to the internet protocol means everyone expects to communicate voice, data and video from anywhere to anywhere, globally.

3.2.5. Герундий в функции подлежащего

Герундий – это неличная форма глагола, обладающая признаками как глагола, так и существительного. Подобной формы в русском языке нет. Как и глагол, герундий имеет формы времени и залога, может определяться наречием. В то же время герундий, так же, как и существительное, может выполнять в предложении функцию подлежащего, дополнения и определяться притяжательным или указательным местоимением.

Герундий в функции подлежащего переводится на русский язык отглагольным существительным или неопределенной формой глагола.

Translating from one language to another has been accomplished by compute.r – ***Перевод*** *с одного языка на другой был выполнен компьютером.* **Reading** books is useful. – ***Чтение*** *книг* ***(читать*** *книги) полезно.* Не следует путать герундий в функции подлежащего и причастие I в функции обстоятельства.

Сравните. Heating the gas increases the speed of the molecules (герундий). – *Нагревание газа ведет к увеличению скорости молекул.*

Losing electrons atoms become ions (причастие I). – *Теряя электроны, атомы становятся ионами.*

Упражнение 69. Прочтите и переведите предложения, обращая внимание на герундий в функции подлежащего.

1. Swimming is my favorite sport. 2. Testing will begin in a few minutes. 3. Inputting is the process of entering date. 4. Outputting is the process of producing useful information. 5. Programming is breaking a task down into small steps. 6. Teleworking is increasing so more and more people have an office at home and aren't computing to an office. 7. Alphabetical filing is very popular. To use it in office is particularly suitable.[64] 8. Telecommunication is the transmission of signals over a distance for the purpose of communication. 9. Tracking is following the progress of a moving vehicle or person. 10. Broadcasting has long used antennae to transmit images and sound using the radio spectrum. 11. Saving your work on a computer is of great importance. 12. Melting takes place at the temperature called melting point.

3.3. Конструкция «сложное подлежащее»

Сочетание существительного в общем падеже (или местоимения в именительном падеже) с инфинитивом (или реже – причастием) образуют субъектный инфинитивный оборот (сложное подлежащее).

1. ***All bodies*** (2) are known (1) ***to possess*** (3) weight (4) – ***известно****, что все тела обладают весом.*

2. ***The teacher*** (2) was seen (1) ***coming*** (3) – ***видели***, *как преподаватель пришел.*

Примечание. Разница между субъектным инфинитивным оборотом (пример 1) и субъектным причастным оборотом (пример 2) состоит в том, что первый выражает факт совершения действия, а второй – действие в его процессе. Кроме того, субъектный причастный оборот, как правило, употребляется только с некоторыми глаголами в страдательном залоге: **to see** *(видеть*), **to hear** *(слышать*), **to feel** (*чувствовать*), **to watch** (*наблюдать*), **to find** (*находить, обнаруживать*).

Между существительным и инфинитивом/причастием в данной конструкции находится определенного вида сказуемое.

- **Глаголы-сказуемые в форме страдательного залога**: to say (is/are said) – *говорить*; to know (is/are known) – *знать*; to find (is/are found) – *находить, обнаружив*ать; to expect (is/are expected) – *ожидать*; to believe (is/are believed) – *считать, полагать*; to consider (is/are considered) – *считать*; to think (is/are thought) – *думать, считать*; to suppose (is/are supposed) – *предполагать, полагать*; to assume (is/are assumed) – *полагать, предполагать*; to state (is/are stated) – *заявлять* и некоторые другие.

При переводе предложения с таким оборотом сказуемое английского предложения выносится в начало предложения и переводится неопределенно-личным предложением (главное предложение); подлежащее английского предложения становится подлежащим, а инфинитив или причастие – сказуемым придаточного предложения, которое вводится с помощью союзов *что* или *чтобы,* иногда *как* – для сложного подлежащего с причастием. Время сказуемого придаточного предложения определяется с учетом времени в английском предложении, а также формы инфинитива или причастия.

The lifetime of the equipment (2) is assumed (1) **to be 30 years** (3). – ***Предполагают/Предполагается****, что срок службы оборудования составит 30 лет.*

This phenomenon (2) is considered (1) **as having arisen** (3) from excessive heating. – ***Считается***, *что это явление возникло в результате (из-за) чрезмерного нагрева.*

- **Глаголы в форме действительного залога, имеющие значение «казаться, оказаться»**: to seem – *казаться, представляться*; to appear – *оказываться, казаться*; to prove – *оказываться*; to turn out – *оказываться*;

to happen – *оказываться*; to occur – *оказываться.* Обратите внимание на то, что часто эти глаголы имеют и другие значения, которые они теряют в предложениях с данным оборотом.

In today's complex world **communications** (2) proved (1) **to be** (3) not secure (4). – *Оказалось, что в нынешнем сложном мире коммуникации не являются безопасными.*

- **Словосочетания типа: to be likely** – *вероятно*, **to be unlikely** – *маловероятно, невероятно*, **to be sure** – *безусловно*, **to be certain** – *несомненно, безусловно*.

The instrument (2) is not likely (1) **to be damaged** (3), if all rules are followed (4). – *Маловероятно, что прибор будет поврежден, если мы будем соблюдать все предписания.*

Упражнение 70. Прочтите и переведите предложения, обращая внимание на конструкцию «сложное подлежащее». Сделайте грамматический анализ предложений.

1. Wi-Fi is known to provide wireless transmission of data over a short range. 2. Digital radio sets seem to be becoming less and less popular. 3. Google is certain to become the most widely used search engine. 4. Light is proved to travel in straight lines. 5. Light intensity proves to be measurable. 6. New generations of mobile phone standards are expected to offer advanced services. 7. Laser cordless mouse is likely to be designed by Logitech company. 8. The "cloud" and cloud computing are thought to be among the buzz words of the year. 9. New anti-virus software is likely to protect against viruses and worms. 10. The problem with the copper pairs in the ground may seem to be rather difficult. 11. The data were not reported to be true. 12. A lot of companies are likely to go out of business. 13. The problem of the rapid increase in digitization and broadband networking should be considered to be settled. 14. Confidential Internet communications proved to be not secure. 15. The data do not appear to be correct. 16. Competition between handset suppliers is said to be good. 17. The software industry is very likely to see big changes. 18. Traditionally, telecoms companies happened to make most of their profits from voice calls. 19. Most TV viewers are sure to need an aerial pointing in the right direction. 20. Windows is unlikely to remain the dominant force in software. 21. The fact happened to become known to everybody. 22. He proved to be a good coder. 23. Unfortunately this approach is unlikely to be successful. 24. They just happen to do mathematics instead of physics. 25. The experiment with CCTV (*видеонаблюдение*) cameras which is believed to have proved successful will be discussed at the mobile world congress. 26. The rate does not appear to be much affected. 27. The conditions seem to have been poorly chosen. 28. The program is not considered to have been realized. 29. The affect was considered not to be of any importance. 30. Temperature would be expected to play an important role

in this reaction. 31. The class of regulators can be thought of as composed of three parts. 32. The product has been proved to affect the overall yield. 33. An airplane was heard flying over the wood.

Упражнение 71. Выразите предположение (суждение) с помощью глаголов, указанных в скобках. Переведите предложения.

Model. The value increases (assume). – The value is assumed to increase.

1. These values are in good agreement with the experimental ones (consider).
2. This density changes with temperature (know).
3. The path is reduced twice (appear).

Упражнение 72. Прочтите и переведите текст, обращая внимание на перевод различного рода подлежащих.

Benjamin Franklin (1706–1790) is acknowledged to be the founder of the theory of atmospheric electricity. At the time when theories to explain electricity were neither complete nor well founded the lightning was proved by him to be an electrical phenomenon. He was not the first to think of it but he was the first to prove it. His theory of electricity still appears to hold good. He is acknowledged to have invented a means of protection against the disastrous effects of lightning – the lightning rod. Franklin's theory at first seemed to be misunderstood both in his country and abroad. It is known to have been severely attacked by the leader of French scientists Nollet.

Franklin is recognized to have been a greater public figure who did as much as he could for enjoying a great popularity with his countrymen.

3.4. Подлежащее, выраженное придаточным предложением

Придаточные-подлежащие отвечают на вопросы «*кто»?* или «*что*?» и присоединяются к главному предложению союзами и союзными словами **that** (при переводе можно использовать словосочетание ***то, что***); **whether, if** (они соответствуют в русском языке частице ***ли*** в роли союза); союзными словами: **who (whom), whose, what, which when, where, how, why**.

That lightning is nothing else but an electric spark has long been known. – ***То, что*** *молния есть не что иное, как электрическая искра, давно известно (давно известно, что молния есть не что иное, как электрическая искра).*

Who saved his life remained unknown. – *Кто спас ему жизнь, осталось неизвестным.*

Упражнение 73. Прочтите и переведите следующие предложения, обращая внимание на подлежащее, выраженное придаточным предложением.

1. That a radio message from civilizations on some of the planets should reach the Earth is quite possible. 2. That the sun is but a typical star is one of the most significant facts of modern astronomy. 3. That this fact is too important to be ignored does not require any further proof. 4. That the method is too complicated is obvious. 5. Whether the agreement will be signed is not clear. 6. What we want is rest. 7. Whether or not these cells interact with others has to be checked. 8. When I shall come back is difficult to say.

4. СЛОВА-ЗАМЕСТИТЕЛИ И СРЕДСТВА УСИЛЕНИЯ

4.1. Слова – заместители существительных

В английском тексте часто встречаются так называемые слова-заместители, использующиеся вместо слов, уже участвующих в данном или предшествующем высказывании. Существуют слова-заместители как существительных, так и глаголов-сказуемых. При переводе предложений с такими словами часто требуется повторить замененное слово.

4.1.1. This (these), that (those) + of в качестве слов-заместителей

Приведенные указательные местоимения в роли слов – заместителей ранее упомянутого существительного переводятся на русский язык либо тем существительным, которое они заменяют, либо личными местоимениями, либо вовсе не переводятся.

Our CD-RW is more reliable than **that** designed in the rival company. – *Наш CD-RW надежнее, чем CD-RW, разработанные конкурирующей компанией.*

Упражнение 74. Прочтите и переведите следующие предложения, обращая внимания на перевод указательных местоимений в функции замещения ранее упомянутого существительного.

1. The main contacts of a switch are called poles. These are connected when the switch is on. 2. This point of view is that of mathematician rather than a physicist. 3. Our space exploration develops much faster than that of the other developed countries. 4. A semiconductor is a material whose electrical conductivity is between that of a conductor and that of an insulator. 5. This group of substances has an importance as a class of materials comparable with that of metals. 6. An area of much interest in recent years is that referred to as artificial intelligence. 7. Planetary theory was not developed to the same degree as that of the Moon.

8. All computers have some form of memory. These are usually chips (integrated circuits) which can hold information. 9. The minimum price of LCD monitor was higher than that anticipated.

4.1.2. Местоимение one в качестве слова-заместителя

One (ед. ч.)/ones (мн. ч.) употребляются вместо существительного, которое имеет определение (обычно стоящее перед этим существительным). В этом случае **one** на русский язык не переводится, или переводится тем существительным, которое оно повторяет.

Among the disadvantages the following **ones** can be mentioned. – *Среди недостатков можно упомянуть* ***следующие (недостатки).***

Упражнение 75. Прочтите и переведите следующие предложения, обращая внимание на перевод слова **one**.

1. The attractions between gas molecules are very slight ones. 2. Electronics is not a static field of study, but a dynamic one. 3. Like most other technological advances, the computer is one that can be used for good or ill. 4. One should use new method of data encoding, not the old one. 5. One of the transistors is known as a floating gate, and the other one is the control – gate. 6. Components that let the user see or hear the results of the computer's data processing are known as output devices. The most common one is the video display terminal, or monitor. 7. The new tool should be cheaper than the one it replaces. 8. It was the machine like the one Babbage conceived. 9. Like every technology revolution, this one will come in waves.

4.1.3. Перевод слов the former, the latter

В качестве слов – заместителей предшествующего существительного могут использоваться субстантивированные прилагательные:

the former (*первый из упомянутых выше*), **the latter** (*последний из двух названных*). Они обычно употребляются в паре, но могут использоваться и отдельно.

The latter sound card is much more expensive than **the former** one. – ***Последняя (из упомянутых)*** *звуковая карта более дорогая,* ***чем первая.***

Of the preceding two sections **the latter** will not be required. – *Из двух предшествующих секций* ***последняя*** *не потребуется.*

Упражнение 76. Прочтите и переведите следующие предложения, обращая внимание на переводе слов **the latter** и **the former**.

1. There are two types of hard disks: IDE and SCSL. The latter is expensive but works faster than the former one. 2. It is a mistake to believe that the

former system failure has been accidental. 3. When an electron current flows along a conductor the latter becomes heated. 4. Although liquids and gases are both fluids, the density of the former is slightly influenced by changes in pressure and temperature. 5. In the former case the characters should show great similarity; in the latter case they should show great diversity. 6. There are three important effects accompanying the motion of electric charges: the heating, the magnetic, and chemical effects, the latter is manifested under special conditions.

4.2. Слова – заместители глаголов

4.2.1. Глагол do в качестве заместителя

Как известно, **do** может выступать в предложении как основной глагол в значении *«делать, производить, выполнять и т. д.»*.

Is there anything I can **do** for you? – *Могу я что-нибудь сделать для Вас?*

В этом значении глагол **do** часто используется в устойчивых выражениях типа **to do business**, **to do a research**, **to do damage**, **to do one's best** и т. д. У глагола **do** есть близкий синоним **make**, который тоже означает «*делать*», но с оттенком смысла «*создавать*».

Сравните: She is doing her homework/She makes many mistakes.

Кроме того, **do** выполняет функцию вспомогательного глагола для образования вопросительных и отрицательных предложений типа **Do** you **speak** English? – No, I **don't speak** English.

Следует обратить внимание на случаи, когда **do** используется для замещения сказуемого предшествующей части предложения. В этой функции **do** на русский язык переводится как заменяемый глагол или не переводится.

Who took the dictionary? I **did**. – *Кто взял словарь? Я* (***взял***).

I translated this text, so **did** she. – *Я переводил этот текст, и она (переводила).*

We shall use the batch files as IBM company **did** in PC-DOS. – *Мы будем пользоваться пакетными файлами так же, как* ***(пользовалась)*** *компания IBM в системе PC-DOS.*

4.2.2. Использование некоторых вспомогательных глаголов в качестве заместителя

В качестве заместителя могут использоваться первые вспомогательные глаголы, если сказуемое, вместо которого употребляются эти глаголы-заместители, имеет их в своем составе.

I have translated the text. – So **have** I. – *Я перевел текст. – И я тоже.*

I have not translated the text. – Neither (nor**)** ***have*** *I. – Я не перевел текст. – И я тоже (не перевел).*

В некоторых случаях при переводе на русский язык следует повторить смысловой глагол.

As science **has** evolved, so **has** its meaning. – *По мере того как развивается наука,* ***развивается*** *ее значение.*

4.2.3. Наречие so в качестве заместителя

Наречие **so** используется в этой функции, если сказуемое, которое должно повторяться, является составным, а именная часть выражена прилагательным, существительным или наречием.

These data are very important for practice and less **so** for theory. – *Эти данные очень важны для практики и менее* ***важны*** *для теории.*

4.2.4. Частица to в качестве заместителя

Иногда, чтобы не повторять один и тот же глагол, вместо полной формы инфинитива этого глагола употребляется только частица **to**.

I seem to have hurt her though I never meant **to** (hurt her). – *Я, кажется, обидел ее, хотя я* ***не*** **хотел** *(ее обидеть).*

Упражнение 77. Прочтите и переведите следующие предложения, обращая внимание на заместители глаголов.

1. A wireless network uses radio waves, just like cell phones, televisions and radios do work. 2. This company made profit from voice calls as most other telecoms companies did. 3. Our sales assistants can use Waiter Pads in the store just as waiters do in restaurants. 4. The new method of computing showed good results. Not so the acknowledged one. 5. “I’ve just tested this device.” “Oh, have you?” 6. I passed the exam and so did Tom (**Сравните**. I passed the exam and Tom did). 7. We failed to get good results, nor our colleagues did. 8. George asked me if I remembered our first trip. I answered that I did.

4.3. Средства усиления

4.3.1. Усилительная конструкция it is/was … that/which

It is/was + любой член предложения, кроме сказуемого + + that/which/who, when

При переводе этого оборота часто используется слово ***именно*** (реже: ***это)***.

It was this device **that (which)** formed the basis for the telephone industry. – ***Именно*** *это устройство сформировало базу телефонной индустрии.*

It was Popov **who** demonstrated the practical application of electromagnetic radio waves. – ***Именно (это)*** *Попов продемонстрировал практическое применение радиоволн.*

It was me **who** developed this method. – ***Именно*** *я разработал этот метод.*

Обратите внимание! Не нужно путать усилительную конструкцию с безличными предложениями, где есть формальное подлежащее типа

It is possible *that* the problem will be solved. – ***Возможно****, эта проблема будет решена*.

Упражнение 78. Прочтите и переведите следующие предложения, акцентируя внимание на переводе усилительной конструкции.

1. It is this very phenomenon that is of interest to us. 2. It was that result which stimulated us to continue investigation. 3. It is the computer which provides the key to the fully automation of the future. 4. It was this device that was ultimately (*в конечном счете)* successful and that formed the basis of telephony industry for many years. 5. It was he who informed us about the results of their work. 6. It is perhaps for this reason that their results are not acceptable. 7. It is this last category that is of interest to us. 8. It is this question that we are interested in. 9. It is those common standards that helped make the Internet so successful. 10. The Internet has already revolutionized the way we live and work.

4.3.2. Усилительная конструкция it was not until … that (when, where)

Вариантом усилительной конструкции **it is ... that** является конструкция **it was not until ... that (when, where)**. В этом случае перед выделяемым словом при переводе ставятся слова ***только***, ***только после***, ***только тогда***, ***когда***.

Упражнение 79. Прочтите и переведите следующие предложения.

1. It was not until the 17th century that man began to understand pressure. 2. It was not until 1930 that third type of particles that make up atoms was discovered. 3. It was not until around 1610 when Galileo first observed Saturn through his telescope. 4. It was not until the late 1920^{s} and 1930 that the social dimensions of the device became a prominent theme in telephone advertisements.

4.3.3. Глагол do в качестве усиления значения другого глагола

В этом случае глагол **do** стоит непосредственно перед другим глаголом в форме простого инфинитива без частицы ***to***. Переводится словами ***«действительно, на самом деле, вне всякого сомнения, все (же), наконец, пожалуйста»*** или передается другим способом.

The possibilities for integrating SMS into our lifestyle **did** seem endless. – *Возможности интеграции СМС в наш образ жизни* ***действительно*** *казались бесконечными.*

Do write to me! – *Пишите* ***же*** *мне*! **Do c**ome and see us. – ***Пожалуйста****, заходите к нам.*

Упражнение 80. Прочтите и переведите следующие предложения, обращая внимание на различного рода усилительные конструкции.

1. It is exactly this technology that will do *(подойдет)* for our purpose. 2. This anti-virus program does scan your PC for spyware that threatens your security. 3. Do be careful with that device! 4. It wasn't until the rise of personal electronic devices that the demand for wireless power materialized. 5. It is a character-based system that requires the entry of commands on a command line. 6. This type of smart phone did have advantages. 7. It is this viewpoint that I cannot adequately describe in a few words. 8. Wireless networks do have a lot of advantages, they are easy to set up and inexpensive. 9. It is for Analytical Engine he never completed that we honor Babbage as "father of the computer". 10. This work did influence the thinking of the designers of ENIAC. 11. However, these things do show that girls have a different attitude to school than boys. 12. Do write to me!

Упражнение 81. Переведите следующие предложения на английский, обращая внимание на различные функции глагола **do**.

1. Этот планшет работает быстро? 2. Он не работает быстро. 3. Этот настольный компьютер действительно работает очень быстро. 4. Мой друг использует его очень часто, и я тоже (использую). 5. Этот компьютер, вне всякого сомнения, обрабатывает огромное количество информации. 6. Включи же его! 7. Его ноутбук работал так же быстро, как мой (работал). 8. Убери, наконец, свой планшет!

5. ДОПОЛНЕНИЕ (THE OBJECT)

Дополнение – это второстепенный член предложения, занимающий в предложении место после сказуемого. Дополнение может быть выражено личным местоимением в объектном падеже, существительным без предлога или с предлогом, инфинитивом, герундием, придаточным предложением

и т. д. **Прямое дополнение** обозначает лицо или предмет, на который непосредственно переходит действие, выраженное переходным глаголом как в личной, так и в неличной форме: I'm reading **a book.**

Косвенное дополнение обозначает лицо или предмет и отвечает на вопросы косвенных падежей. – I'll give **him** my book.

5.1. Распознавание дополнения в предложении

Дополнение в английском предложении всегда стоит после сказуемого. Запомните, как употребляются прямое и косвенное дополнения в предложении:

- оба дополнения выражены существительными: I gave ***my friend the book***. I gave ***the book to my friend***;
- косвенное дополнение выражено местоимением: I ***gave him the book.*** I gave ***the book to him***;
- прямое дополнение выражено местоимением: I gave ***it*** to my friend. I gave ***it*** to him.

Как видно из примеров выше, косвенное дополнение (отвечает на вопрос «кому?») употребляется с предлогом ***to***, когда стоит после прямого дополнения (отвечает на вопрос «что?»). Прямое дополнение, выраженное местоимением, предпочтительно ставить сразу за сказуемым.

Упражнение 82. Найдите в предложениях дополнения, укажите, какой частью речи они выражены. Преведите предложения.

1. We believe the temperature of water will not change. 2. We see water boiling in the boiler. 3. We like to invite our friends to our house. 4. He likes translating technical books from English into Russian. 5. Some applications make it possible to see a person at the other end of the line.

Примечание. В четвертом предложении дополнение выражено герундием. В функции дополнения герундий в активной форме переводится именем существительным или неопределенной формой глагола, а в пассивной форме – придаточным предложением.

I like **reading**. – *Я люблю* ***читать (чтение)***.

I like **being read to**. – *Я люблю,* ***чтобы мне читали***.

5.2. Сложное дополнение (объектный предикативный инфинитивный/причастный оборот)

Если инфинитив (или реже причастие) стоит после существительного в общем падеже (или личного местоимения в объектном падеже), которому предшествует глагол определенного типа, так называемый вводящий глагол, то инфинитив вместе с существительным (или личным местоимением) образует «сложное дополнение». В этой конструкции инфинитив может

употребляться как в активной, так и в пассивной формах. На русский язык «сложное дополнение» переводится дополнительным придаточным предложением с союзами ***что, чтобы, как***.

- We ***expect*** | **microprocessors to make** | the changes in control technology. – ***Ожидается, что микропроцессоры произведут*** *изменения в технологии управления.*
- We ***believe*** | **much attention to be paid** | to the frequency stability of generators. – *Мы* ***полагаем*** **(*полагаем/представляется*)**, ***что особое внимание следует уделить*** (дословно: *уделяется*) *частотной стабильности генератора.*
- If this company ***wants*** | **us to develop** | this software, then we should have approximately twenty software engineers. – *Если эта кампания* ***хочет, чтобы мы разработали*** *это программное обеспечение, то у нас должно быть приблизительно двадцать специалистов в этой области.*
- He ***watched*** | them (the students) **working**. – *Он* ***видел, как они (студенты) работали/работают***.
- We ***consider*** the program | **as consisting of three stages**|. – *Мы* ***считаем (считается, можно считать), что программа состоит из трех фаз***.

Примечание. Разница между объектным инфинитивным оборотом (см. примеры 1–3) и объектным причастным оборотом (примеры 4, 5) состоит в том, что первый выражает факт совершения действия, а второй – процесс происходящего действия.

Сравните.

I saw **her run** into the house. – *Я видела, как она забежала в дом.*

I saw **her running** along the street. – *Я видела, как она бежала по дороге.*

Обратите внимание на конструкцию «сложное дополнение», в состав которой входит Participle II. Она означает, что субъект выполняет действие не сам, а кто-то другой делает это за него, например:

I had my hair cut. – *Я подстригся (т. е. парикмахер или кто-то другой подстриг меня).*

5.2.1. Сложное дополнение после глаголов, выражающих умственную деятельность

Опознавательным признаком конструкции «сложное дополнение» может служить наличие вводящего глагола со следующим значением:

– ***желания или потребности:*** **to want** *(хотеть*), **to desire** (*желать*), **would like** (*хотел бы*);

– ***предположения:*** **to expect** (*ожидать*), **to assume** *(предполагать*), **to suppose** *(полагать, предполагать),* **to believe** *(считать, полагать),* **to consider/to find** *(считать)*;

– ***знания, осведомленности, утверждения:*** **to know** *(знать),* **to think** *(думать, считать),* **to state** (*констатировать),* **to claim** *(утверждать),* **to prove** *(доказывать, оказываться*), **to note** *(отмечать*), **to report** *(сообщать*) и др.

Упражнение 83. Прочтите и переведите предложения с конструкцией «сложное дополнение».

1. We expect this solution to satisfy the given statement. 2. The teacher wants their students to draw a diagram. 3 The teacher wants them to draw a diagram. 4. Bohr recognized the substance as having a condensed – ring system. 5. We assume[65] the simple wave form to act on the antenna. 6. We know radio electronics to surround us everywhere. 7. We know Ethernet to be the dominant network technology in the IT computing world. 8. Scientists consider the frequency stability of generators to be the heart of all radio transmitting systems. 9. Manufacturers of the magnetic shield consider it to be effective. 10. We expect[66] the documents to serve experienced programmers. 11. The editor declared this multiformat audio test instrument to be the most important one. 12. The Intel developers want the computer to be noiseless. 13. Japan Electronics Show Association wants the International Broadcast Exhibition to be successful. 14. Software as a Service will require ordinary users to have more powerful computers. 15. He wished the matter to be taken seriously. 16. We proved this suggestion to be wrong. 17. One would expect the true value to have a 90 % chance. 18. We regard these views to be self-evident. 19. I should like her to look through my report. 20. She suffered him to use that data for the research (в составе этой конструкции переводится: *неохотно позволять).* 21. I hate you to use my laptop (в составе этой конструкции переводится: *терпеть не могу*).

5.2.2. Сложное дополнение после глаголов, выражающих физическое восприятие

To see *(видеть),* **to hear** (*слышать*), **to watch** *(смотреть),* **to observe** *(наблюдать),* **to notice** *(замечать)***, to feel** *(чувствовать)* и т. д.

Обратите внимание! После этих глаголов частица ***to*** перед инфинитивом не употребляется.

Упражнение 84. Прочтите и переведите предложения с конструкцией «сложное дополнение».

1. They saw his activity bring great success. 2. The group watched the computer operate. 3. We heard them discuss similar problems. 4. Scientists see DBC (Direct – Broadcast Satellite) provide better pictures and sound. 5. Vodafone and Sony feel their research partnership find new ways for successful work. 6. I'm sorry I didn't hear the bell ring. 7. I hear the bell ringing. 8. We saw him entering the house. 9. Nobody heard the machine begin operating. 10. One cannot fail to see other countries tending for mutual cooperation. 11. She did it because she couldn't bear to see you selling those balloons.

5.2.3. Сложное дополнение после глаголов, выражающих разрешение, приказ или просьбу

Такие глаголы называют каузативными (от лат. *causa* – причина):

To make (*заставлять, принуждать),* **to cause** *(вызывать, обусловливать, быть причиной того, что),* **to allow, to permit, to let, to enable** (*позволять давать возможность),* **to order, to command** (*приказывать),* **to dare** (*осмеливаться*), **to forbid** *(запрещать*) и т. д.

The sound pressure **makes** the pressure on the granules **vary**. – *Давление звука* ***заставляет*** *давление на гранулах* ***изменяться.***

Keying the number in on a telephone **causes** the pager **to beep**. – *Набор номера по телефону* ***вызывает*** *звонок пейджера.*

Обратите внимание! Глагол **to make** переводится в таких конструкциях как «**заставлять**».

Примечание 1. После глаголов **to make, to let, to dare** частица ***to*** **не ставится**.

Примечание 2. Если английский инфинитив имеет форму страдательного залога (например, **to be used**), то обычно приходится изменять порядок слов: сначала переводят инфинитив (формой действительного залога), а потом – существительное.

The new method permitted | **these phenomena to be investigated** | thoroughly. – *Новый метод позволил тщательно* ***исследовать эти явления***.

Упражнение 85. Прочтите и переведите предложения с конструкцией «сложное дополнение».

1. Variable current[67] makes the diaphragm vibrate. 2. The inductance in a circuit causes the rise and fall of current to produce a voltage in the same circuit. 3. This force causes the electrons to be attracted[68] to the cathode. 4. Bluetooth, a technology standard, allows digital devices to connect wirelessly. 5. A spreadsheet is a piece of software which allows[69] data to be displayed and managed in a table format. 6. Word is great because it allows making text files easily. 7. UNIX provides multitasking, which allows simultaneous programs to be shared by several users at one time. 8. The decrease in the weight of the structure of airplane enables more passengers to be carried. 9. The technique permitted problems to be solved. 10. The pulse method enables thermodynamic equation to be formulated in a simple manner. 11. This sequence causes digitized images to be stored in core memory. 12. High temperatures allowed the reaction to be carried out in two hours. 13. Digital television enables viewers to interact with the content and provide feedback to the programmer via telephone line, cable or satellite. 14. RFID (Radio Frequency Identification) allows sensors in warehouse to monitor deliveries. 15. The power of the modern microcomputer enables it to be used for all kinds of tasks. 16. Different kinds of parallel processing software may permit synchronization to be achieved. 17. The business lets customers manage their sales data. 18. This software lets users run[70]

custom applications. 19. Let us consider this question. 20. Let us imagine that this new model of computer has come on the market. 21. We made the experiments run at a reduced speed.

Упражнение 86. Переведите на английский язык предложения со сложным дополнением.

1. Я хочу, чтобы они выполнили это требование. 2. Я хочу, чтобы она стала квалифицированным специалистом. 3. Они хотят, чтобы мы приняли участие в разработке этого приложения. 4. Мы считали, что он – квалифицированный специалист. 5. Мы хотим, чтобы наши научно-исследовательские центры были лучше оборудованы. 6. Мы ожидаем, что доступ в Интернет вскоре будет неограниченным. 7. Я полагаю, что эта инновационная технология будет развиваться. 8. Мы считаем, что технологическая конвергенция существенно изменит рынок. 9. Некоторые ученые полагают, что распознавание мыслей станет возможным в ближайшее время.

Упражнение 87. Прочтите предложения и найдите в них конструкции «сложное дополнение» или «сложное подлежащее». Сделайте грамматический анализ предложений, переведите их.

1. I heard the door open and saw a man enter the room. 2. Scientists are sure to find a reliable method of detecting errors. 3. The hypothesis proved to be based on the wrong assumption. 4. The librarian wants the book to be brought in 4 days. 5. She made us wait for hours. 6. Please let me know your address as soon as possible. 7. What makes you think so? 8. A proper interpretation of this fact is likely to be obtained. 9. The equipment we are interesting in happened to be in their factory. 10. We expected him to be appointed director of a new laboratory. 11. I heard him to have delivered a lecture. 12. The method is said to give good results. 13. Lucia saw everything cleaned.

Упражнение 88. Прочтите и переведите текст, обращая внимание на перевод конструкции «сложное дополнение».

Scientists consider Lobachevsky to be a great mathematician. The whole world knows Lobachevsky to have strictly demonstrated and explained the principles of the theory of parallel lines. We consider him to be a great organizer of popular education, and we know him to have written much on the problems of education.

Lobachevsky was born on December 1, 1792 near Nizhny Novgorod. His father died when he was only a child, leaving his family in extreme poverty. The family moved to Kazan where Lobachevsky was admitted to the gymnasium. We know his progress to have been extremely rapid in mathematics and classics. At the age of 14 he entered the University of Kazan where he is known to have spent 40 years as a student, assistant professor, and finally rector. Under his direction great improvements were made at the University. We know an

observatory to have been founded and equipped and a mechanical workshop to have been established.

For 2200 years all the mankind believed Euclid to have discovered an absolute truth. Lobachevsky proved Euclid's axiom on parallel lines not to be true. He built a new geometrical theory quite different from that of Euclid. We know his ideas to have greatly influenced not only geometry, but mechanics, physics, astronomy as well. Like Galileo, Copernicus and Newton he is one of those who laid the foundation of science.

5.3. Инфинитивная конструкция с предлогом for (предложный инфинитивный оборот)

Эта конструкция может употребляться в предложении в различных функциях, однако по форме она в известной степени напоминает конструкцию «сложное дополнение» и так же, как последняя, как правило, переводится на русский язык с помощью союзов «*что*» и «*чтобы*». **Сравните:**

Сложное дополнение

Существительное в общем падеже Местоимение в объектном падеже	Инфинитив

Everybody wanted **him to speak**. – *Все хотели, **чтобы** он заговорил.*

*Конструкция с **for***

For	Существительное в общем падеже Местоимение в объектном падеже	Инфинитив

Everybody waited **for him to speak**. – *Все ждали, **что** он заговорит.*

Упражнение 89. Прочтите и переведите предложения, обращая внимание на конструкцию «**for** + существительное + инфинитив».

1. We have to consider whether it is possible for this sentence to become true. 2. This question is too difficult for him to answer it immediately. 3. I wonder if it is possible for them to come. 4. For a proper correspondence between these phenomena to be established they first have to be considered separately. 5. She has closed the window for you not to catch the cold. 6. It is important for the model to be accurate but simple enough. 7. The satellite of Neptune is too far away for its size to be known with any accuracy. 8. For you to begin the work now is very important.

Упражнение 90. Прочтите и переведите предложения, обращая внимание на дополнения.

1. Tell the secretary what you would like her to do. 2. Seeing the professor enter the room the students rose to greet her. 3. We can expect computer and internet to continue to occupy a central place in distant education. 4. There is less space for us to grow as individuals. 5. I don't like you to say such things. 6. I want this IT-engineer to help me in repairing my computer. 7. The witness heard her telling him she was forced to go to psychiatrist. 8. The witness saw the suspect approaching the house.

5.4. Придаточные дополнительные предложения с союзами whether и if

Перевод придаточных дополнительных предложений с союзами ***whether*** и ***if*** следует начинать со сказуемого с добавлением частицы **«*ли*»** в роли союза. В косвенных вопросах оба союза, как правило, взаимозаменяемы.

I did not know **whether/if** the company would purchase the software. – *Я не знал,* ***купит ли*** *компания ПО.*

Franklin did not know **whether** current flows from the positive or negative terminal. – *Франклин не знал,* ***течет ли*** *ток от положительной или отрицательной клеммы.*

Упражнение 91. Прочтите и переведите следующие предложения.

1. Employees are deciding[71] whether to accept the offer. 2. How do I test whether Java is working on my computer? 3. It is necessary to decide whether this statement is true or false. 4. We do not know whether the universe as a whole is finite or infinite in extent – either in space or in time. 5. We failed to discover whether data is available. 6. Check whether you can access other Web pages? 7. Thus it would be of great importance for us to know whether the manufacturer's claims are actually true. 8. West Africa geophysicists carried out surveys to see whether there were any oil reservoirs underground. 9. We try to learn if the value is changeable.

5.5. Бессоюзные придаточные дополнительные предложения

В бессоюзном придаточном дополнительном предложении за глаголом-сказуемым главного предложения следуют подлежащее и сказуемое придаточного. На русский язык такие предложения переводятся с союзом

«***что***». Союз может опускаться в живой эмоциональной речи, где связь между предложениями передается интонацией.

Упражнение 92. Прочтите и переведите бессоюзные придаточные дополнительные предложения.

1. It was stated the conclusion was right. 2. Dave Wells said the new office only needed satellite phones. 3. The approach means it is virtually impossible for the entire Net to crash at once. 4. Greg says he will check her network card with a ping test. 5. Microsoft believes cloud computing is a transformational technology that offers huge opportunities for firms and their customers.

5.6. Особенности перевода придаточных дополнительных предложений после некоторых глаголов

В английском языке, как и в русском, различаются три наклонения: изъявительное (The Indicative Mood), повелительное (The Imperative Mood) и сослагательное (The Subjunctive). В отличие от изъявительного наклонения, которое показывает, что говорящий рассматривает действие как реальный факт, сослагательное наклонение показывает событие как маловероятное, предполагаемое, желаемое.

- После глаголов волеизъявления, таких как **to demand**, **to order**, **to insist**, **to suggest**, **to propose** используется сослагательное наклонение – глагол **should** (иногда опускается) и инфинитив смыслового глагола. При переводе значение глагола **should** не учитывается.

They demand (suggest, insist) that an appropriate solution **(should) be found**. – *Они требуют (предлагают, настаивают),* ***чтобы было найдено*** *соответствующее решение.*

- После глагола **to wish** (*желать, хотеть*) глагол в придаточном предложении употребляется в условном или сослагательном наклонении. Такие предложения часто переводятся «(*Мне) жаль, что …*»

I **wish** I had a million dollars. – *Жаль, что* у меня нет миллиона долларов.

При чем тут «жаль»? Дело в том, что такие предложения выражают не просто пожелания, а именно пожелания с оттенком сожаления о том, что желание не соответствует реальности, не сбылось или не сбудется.

Собственно, приведенное выше предложение можно перевести так: *Хотел бы я, чтобы у меня был миллион долларов! (но, увы, у меня его нет).*

Обратите внимание! Грубой ошибкой будет такой перевод этого предложения: *Я хочу, чтобы у меня был миллион долларов.* Этот вариант не подходит, поскольку в нем не ощущается оттенка сожаления, а выражено только пожелание. Приведем еще несколько примеров:

I wish I had a phone. – *Жаль, у меня нет (сейчас) телефона.*

I wish I had changed my mind. – *Жаль, что я не передумал (в прошлом).*

I wish I could have saved them. – *Жаль, что я не смог их спасти (хотелось бы мне, чтобы я мог их спасти).*

I wish I didn't have a headache. – *Жаль, что у меня болит голова.*

Обратите внимание! При переводе таких предложений с использованием слова «жаль» в русской версии придаточное получается

– **отрицательным**, если на английском оно утвердительное;

– **утвердительным**, если на английском – отрицательное.

Упражнение 93. Переведите предложения с придаточными дополнительными предложениями.

1. He suggested that during the experiment the direction of light (should) be slightly altered. 2. I wish I knew the answer. 3. I wish I didn't have to work tomorrow. 4. I wish the researchers had carried out all the calculations before moon. 5. Professor insisted that we (should) first hear everybody's opinion on the subject. 6. I wish the required data were supplied as soon as possible. 7. I wish the amendment had been made in due time.

Упражнение 94. Прочтите и переведите текст, обращая внимание на перевод различного рода дополнений.

Telephone Problems

Though we expect telephone to have convenience and speed it also has the power to convey a poor impression of the efficiency of individuals and organizations and create confusion and irritation.

Telephone firms encourage customers to make telephone calls as they seem cheaper than sending a letter. Many organizations calculate that the average cost of sending a letter is about £ 25, which allows the customers to buy a lot of telephone time even at current rates. But telephone calls do not necessarily save time – and in business time is money. We have all suffered from the irritating waste of time caused by bad telephone manners. Sometimes to make a call takes us longer time than it takes to write or dictate a letter.

Perhaps the principal cause of the telephone inefficiency is that although the standard telephone allows a customer to perform oral communication, it doesn't yet transmit visual communication. Facial expression, gestures and posture not only help people convey the real meaning of words, but are often the principal means of feedback in face-to-face conversation. They allow misunderstandings to be instantly corrected. Without visual communication we expect such typical problems as missed words, misheard words.

6. ОБСТОЯТЕЛЬСТВО (ADVERBIAL MODIFIERS)

Обстоятельство – это второстепенный член предложения, который обозначает *как/при каких обстоятельствах* совершается действие.

Обстоятельство в английском предложении располагается на *четвертом месте* (после дополнения) или на *нулевой* позиции (перед подлежащим), а если оно выражено коротким наречием, то может стоять *справа или слева от сказуемого.*

We study English **at the University. Yesterday** he got up **a little earlier**. He **always** comes in time.

Обстоятельство может быть выражено: наречием; именем существительным (как правило, с предлогом); герундием с предлогом; инфинитивом; причастием или причастным оборотом; придаточным обстоятельственным предложением.

6.1. Инфинитив в функции обстоятельства

Особенности перевода инфинитива в функции обстоятельства

Опознавание в предложении	Пример	Перевод	Способы перевода на русский язык
В середине или в начале предложения. Всегда с частицей **to**. Может употребляться с союзами: **in order to –** *(для того) чтобы;* **so as –** *чтобы;* **so that/that** – *чтобы;* **lest –** *чтобы не/как бы не*	He reads a lot of books in the original **to master the language**	*Он читает много книг в подлиннике,* ***чтобы овладеть языком***	Придаточным предложением **(**цели или следствия) с союзами *чтобы, для того чтобы, с тем чтобы*, отглагольным существительным с предлогом *для*
	In order to get better results we must work hard	***Для того чтобы получить лучшие результаты****, мы должны упорно работать*	
	He closed the door quietly **so as not to disturb anyone**	*Он тихо закрыл дверь,* ***чтобы никого не побеспокоить***	

Упражнение 95. Прочтите предложения. Сравните их. Укажите, в каких предложениях инфинитив выполняет функцию обстоятельства и при переводе необходим союз ***«чтобы»***.

1. You must use such device to produce output in a human-readable format. 2. To produce output in a human-readable format was our aim. 3. To produce output in a human-readable format you must use such device as a printer. 4. A printer is a device to produce output in a human-readable format.

Упражнение 96. Прочтите и переведите предложения, содержащие инфинитивы в функции обстоятельства.

A) 1. To understand how to use a computer one must fully appreciate its design. 2. Processing is operations on data to convert them into useful information.

3. Computers were designed to perform thousands of computations per second. 4. To make computers more reliable transistors were used. They were applied to reduce computational time. 5. To integrate large numbers of circuit elements into a small chip, transistors should be reduced[72] in size. 6. To use integrated circuit technology new computers were built. 7. Analytical engine was invented to store data. 8. Disk drives are used to read and write data on disks.

B) 1. I had to borrow money from the bank in order to set up the business. 2. In order to demonstrate the effect Table 1 is given. 3. To perform this work one must have all the necessary equipment. 4. Data are processed to become useful information. 5. Should BT or AT&T provide home TV services to replace their declining telephony revenues (*доходы*)? 6. RFID (Radio Frequency Identification) will tag *(маркировать)* all goods to make them identifiable at all times throughout the supply chain.

C) 1. Bus fares in the city are being cut so as to encourage people to use public transport. 2. Input devices are used to enter data into primary storage. 3. As a scanner, the Sigma 100 can be used to enter photographs as well as documents into a computer. 4. Instead of a mouse, they have a touchpad built into the keyboard – a sensitive pad that you can touch to move the pointer on the screen. 5. It is designed to be placed on your desk. 6. A laser printer uses a laser beam to fix the ink to the paper. 7. In order to avoid complex calculations in bytes, we use bigger units. 8. Enter is pressed to select options from a menu or to start a new paragraph. 9. It is important for the model to be accurate but simple enough. 10. We need more traffic cameras so as to reduce crimes. 11. Different applications of digital technologies were used lest there be carbon emissions.

6.2. Причастия в функции обстоятельства

Причастие (так же, как инфинитив и герундий) – это неличная форма глагола, которая обладает свойствами наречия, прилагательного и глагола. **Подобно прилагательному**, причастие может быть **определением** к существительному или **именной частью сказуемого**.

A playing girl. – *Игра**ющ**ая девочка* (причастие I в качестве левого определения).

A broken agreement. – *Наруш**енн**ое соглашение/наруша**ем**ое соглашение* (причастие II в качестве левого определения).

The army defeated. – Армия, потерпевшая поражение (причастие II в качестве правого определения).

An agreement being broken. – *Наруша**ем**ое соглашение* (правое определение).

The agreement was broken. – *Соглашение **было нарушено*** (причастие II в качестве именной части сказуемого).

Подобно наречию, причастие может быть **обстоятельством,** характеризующим действие, выраженное сказуемым.

Reading the text we wrote out new words. – Читая текст, он выписал новые слова.

Подобно глаголу, причастие имеет видо-временные формы, имеет формы залога, может иметь прямое дополнение.

6.2.1. Формы причастия и их значение для перевода

Залог	Active Voice (действие выполняется самим подлежащим)	Passive Voice (действие выполняется над подлежащим)	Действие по отношению к глаголу-сказуемому
Participle 1	asking doing	being asked being done	одновременное и предшествующее
Participle 2	–	asked done	одновременное и предшествующее
Perfect Participle	having asked having done	having been asked having been done	предшествующее

6.2.2. Особенности перевода причастия в функции обстоятельства

Опознавание в предложении	Примеры	Перевод	Способ перевода на русский язык
Стоит в начале предложения (перед подлежащим) или в конце (после дополнения); может употребляться с союзами **while, when, if, in spite of, although**	1. He left the room **saying** that he was in a hurry	Он вышел из комнаты, ***говоря* (*со словами; и сказал; сказав*),** что он спешит	Деепричастие. Сочетание «***при*** + сущ.» (кроме форм Perfect Participle). Придаточным обстоятельственным предложением
	2. **Having visited** the art exhibition, the students organized a discussion	***Посетив выставку* (*после посещения; после того, как*** *они посетили выставку*), студенты организовали обсуждение	
	3. **Being invited** he said he would come to our evening party	***Будучи приглашенным* (*когда его пригласили*)**, он сказал, что придет на нашу вечеринку	
	4. **Having been warmed** to 0 °C ice began to melt	***После того, как*** лед был нагрет до 0 °C, он начал таять (***будучи нагретым*** *до*…)	
	5. This melting ice keeps the same temperature **while/when melting**	Этот тающий лед сохраняет одну и ту же температуру, ***когда он тает* (*при таянии*)**	
	6. **When translated** this article was sent to the editor	***Когда статью перевели* (*когда статья была переведена*),** ее отправили редактору	
	7. **If increased**, the prices influence the standard of living	***Если*** цены повысят, они повлияют на уровень жизни. (***Будучи повышенными***, цены повлияют на уровень жизни)	

Упражнение 97. Прочтите и переведите предложения, обращая внимание на формы причастия в функции обстоятельства и особенности их перевода.

1. Using the energy of the atom we produce electric energy at atomic power plants[73]. 2. Electronic computers perform both arithmetic and logical operations, making it possible to control the process under rather complicated conditions. 3. The syntax and semantics of these languages are very sophisticated, making the translation to machine language a complex process. This means that a space program must be flexible and diverse, making it possible to explore completely new fields. 4. Strictly speaking, this finding means that this hypothesis cannot be rejected. 5. Being not visible software makes possible the effective operation of computer system. 6. Being obtained the results of the research were analyzed. 7. Having obtained the required results we informed the manager of this fact. 8. Having invented magnetic tapes the Germans used them as the secondary storage medium. 9. Having finished the research the scientists made the analysis of the data obtained. 10. Having been constructed recently a new electronic device has important applications in space exploration. 11. Having been regulated by the operator the equipment operated well. 12. Having been coded the instruction was transmitted to the central processing unit. 13. When entering the Internet, I always find a lot of interesting information. 14. While operating on the basis of analogy analog computers simulate physical systems. 15. While operating with graphical interface people usually use such manipulators as mouse and track ball. 16. In spite of being tired he continued working.

Упражнение 98. Прочтите и переведите предложения, обращая внимание на формы причастия в функции обстоятельства и особенности их перевода.

1. Having translated the program into machine language the computer architect put the program into the machine. 2. When properly programmed computers do not make computational errors. 3. While having no moving mechanical parts electronic memories can transfer data at very high speed. 4. When used voltage represents other physical quantities in analog computers. 5. The designer left the office having looked through all the documents. 6. Having discussed the functions of storage[74] units we passed on to the consideration of central processing unit. 7. Assuming this as an axiom we can find the solution. 8. Having been prepared by the operator the equipment operated well. 9. Being not visible this substance affects the human dramatically. 10. While dealing with discrete quantities digital computers count rather than measure. 11. When using a microcomputer you are constantly making choice – to open a file, to close a file, and so on. 12. Having limited the information capacity of a single bit to two alternatives the computer designers expressed data by a combination of bits.

13. When written in a symbolic language programs require the translation into the machine language. 14. Being obtained the results of the research were analized. 15. While dealing with discrete quantities digital computers count rather than measure. 16. When choosing a monitor, you have to take into account a few basics. 17. Having been introduced in the early 1960s magnetic disc storage has replaced magnetic tape storage. 18. Having been transmitted to the central processing unit the instruction made arithmetic-logical unit perform some computations. 19. If cooled water becomes ice.

Упражнение 99. Замените инфинитивы соответствующими формами причастия.

1. (to impress) by programmer's work, the client extended her contact for a year. 2. (to acquire) the money through hard work, the client was reluctant to give it away. 3. (to start) the process, the administrator was determined to complete it. 4. (not to wish) to offend him, the chief said nothing about novice work. 5. (not to see) all the limitations, I am reluctant to make a judgment. 6. (to be) an IT specialist for 14 years, Barbara knew how to solve the problem.

Упражнение 100. Переведите предложения на английский язык, обращая внимание на формы причастия в функции обстоятельства.

1. Завершая серию экспериментов, студенты получили интересные данные. 2. Завершив первую серию экспериментов, они начали обрабатывать полученные данные. 3. Измеряя температуру воды, обычно пользуются термометром. 4. Обсудив полученные результаты, исследователи поняли, что они недостаточно точны. 5. Работая с радиоактивным веществом, вы должны быть осторожны. 6. Снабдив лабораторию всем необходимым, исследовательская группа смогла успешно продолжать работу.

6.2.3. Независимый причастный оборот

Сочетание существительного в общем падеже или местоимения в именительном падеже с любой формой причастия образует независимый причастный оборот.

В предложении этот оборот выполняет функцию сложного обстоятельства и всегда отделяется запятой. Независимый причастный оборот может стоять как в первой, так и во второй части предложения.

1. **D. Mendeleyev having arranged the elements in a table**, the existence of yet unknown elements could be predicted. – ***После того, как*** *Д. И. Менделеев расположил химические элементы в таблице, ученые смогли предсказать существование тогда еще неизвестных элементов.*

2. The CPU controls the operation of the entire system, **commands being issued to other parts of the system**. – *Центральный процессорный блок управляет работой всей системы,* ***при этом*** *команды посылаются к другим частям системы.*

Обратите внимание! Если **независимый причастный оборот располагается в первой части предложения до запятой** (пример 1: в этом случае во второй части предложения есть и подлежащее, и сказуемое, а в первой части – только подлежащее), то он переводится придаточным предложением с союзами: ***когда, так как, если, после того, как*** **(в зависимости от контекста)**.

Если **независимый причастный оборот стоит во второй части предложения после запятой** (пример 2: в этом случае в первой части предложения есть и подлежащее, и сказуемое, а во второй – только подлежащее), то он переводится самостоятельным предложением с союзами: ***причем (при этом), а, и, но – или без союза*** **(в зависимости от контекста)**.

В некоторых случаях независимым причастным оборотам может предшествовать предлог **with**. Когда этот предлог стоит в начале предложения, то, помимо указанных выше союзов, при переводе используются союзы ***теперь, когда/после того как***.

With the experiments **having been carried out**, they started new investigations. – ***Теперь, когда (после того, как)*** *опыты были закончены, они начали новые исследования.*

Упражнение 101. Переведите предложения, исходя из местоположения независимого причастного оборота.

1. Data being accessed randomly, semiconductor memories are called random access memory (RAM). 2. The information capacity of a single bit being limited to two alternatives, codes are based on combination of bits. 3. Primary storage having similarity to a function of the human brain, the storage is also called memory. 4. Electromechanical memories depend upon moving mechanical parts, their data access time being longer than that of electronic memories. 5. For this reason most computer systems use electronic memory for primary storage, electromechanical memory being used for secondary storage. 6. The necessary data having been obtained, we would continue our experiment. 7. Data having been entered correctly into the computer component of a data processing system, the need for further manipulation by humans is eliminated. 8. Other theories having so far proved inadequate, dynamo theories of the origin of solar fields are regarded as the most promising. 9. With the technology developments going on at its present rate, companies in every industry sector will see big enormous[75] changes. 10. The session was over, with many aspects of the problem left unsolved. 11. The CPU controls the operation of the entire[76] system, commands being issued to other parts of the system. 12. With the electric current passing through the device, we can measure light intensity incident on the cathode.

Упражнение 102. Сравните и проанализируйте предложения, содержащие зависимый и независимый причастные обороты. Переведите их. **Помните**, что независимый оборот всегда содержит собственное подлежащее.

1. Having returned to the accumulator the results of the arithmetic operations are transferred to main storage. The results of arithmetic operations are returned to the accumulator, the storage register transferring them to main memory. The results of the arithmetic operations being returned to the accumulator, the storage register transfer them to main memory. Being returned to the accumulator the results of the arithmetic operations are transferred to main memory.

2. The elements having unknown properties cannot be used for experiments. The elements have unknown properties, experiments with these elements being impossible. Having unknown properties the elements cannot be used for experiments. The elements having unknown properties, experiments with them are impossible.

3. When passing through a conductor free electrons form an electric current. Free electrons passing through a conductor, an electric current is generated. Free electrons pass through a conductor, an electric current being generated. Free electrons passing through a conductor form an electric current.

4. Instructions being obtained, the control unit causes other units to perform the necessary operation. Instructions are obtained, the control unit causes other units to perform the necessary operation. Having obtained the instructions the control unit causes other units to perform the operation. Obtaining the instructions the control unit causes other units to perform the operations.

5. When moving in a material, charged particles (заряженные частицы) produce magnetic properties (свойства) of this material. Charged particles moving in a material produce magnetic properties. Charged particles moving in a material, magnetic properties of the material being produced.

Упражнение 103. Прочтите предложения, найдите в них независимый причастный оборот. Переведите предложения, исходя из того, где находится этот оборот в предложении.

1. The work at the project having been finished, the documents were sent to the client. 2. Specialists focusing on threat of designing and breaking securities codes, classical cryptography went on until the end of the last century. 3. The contract quantity was 5,000 tons, the sellers having an option to deliver 2 per cent more or less. 4. There being many difficulties in concluding a contract, the meeting was postponed. 5. We are not giving you any particulars, the enclosed letter containing the necessary information. 6. With the shipping strike in the United States still going on, arrivals of American cotton in Liverpool were rather small at that time.

6.3. Герундий в функции обстоятельства

Герундий, так же как инфинитив и причастие, – это неличная форма глагола, **соединяющая в себе свойства существительного и глагола**. В этом отношении он сходен с инфинитивом, но отличается от него тем, что передает оттенок процесса действия.

На русский язык герундий **переводится отглагольным существительным или неопределенной формой глагола,** а также **деепричастием и целым предложением.**

Герундий **обладает следующими свойствами существительного**: он может быть в предложении частью сказуемого (2.1), подлежащим (3.2.5), прямым дополнением (5.1), определением (7.2.3), обстоятельством; в функции обстоятельства и определения имеет предлог; может иметь в роли определения местоимение или существительное в притяжательном падеже. Герундий обладает следующими свойствами глагола: он имеет видо-временные и формы залога; может иметь прямое дополнение; определяется наречиями.

6.3.1. Формы герундия

	Simple/Indefinite	Perfect
Active Passive	writing being written	having written having been written

6.3.2. Особенности перевода герундия в функции обстоятельства

Распознавание в предложении	Пример	Перевод	Способ перевода на русский язык
Стоит в начале предложения перед подлежащим или в конце после дополнения. Употребляется с предлогами: **after, before, without, by, through, on (upon), in**	**After reading the text** we shall be able to answer the questions.	***После прочтения текста*** **(*прочтя текст/после того, как*** мы прочтем текст), мы сможем ответить на вопросы.	Существительным с предлогом; деепричастием; придаточным предложением
	Mr. Black went out **without saying a word**	*Мистер Блэк вышел,* ***не сказав ни слова***	
	By using the data the scientists could prove the research. (*Герундий + by* обозначает средство, способ совершения действия)	***Посредством/путем/с помощью использования*** данных **(*используя данные*)**, ученые смогли доказать свое исследование	
	(Up) on reading the text we shall be able to answer the questions. (Предлог on (upon) с простой формой герундия обозначает предшествующее действие)	***После прочтения/по прочтении текста*** **(*прочитав текст/когда мы прочитаем*** текст), мы сможем ответить на вопросы	

Окончание таблицы

Распознавание в предложении	Пример	Перевод	Способ перевода на русский язык
Стоит в начале предложения перед подлежащим или в конце после дополнения. Употребляется с предлогами: **after, before, without, by, through, on (upon), in**	**In solving problems** it is necessary to distinguish between a fact and a hypothesis. (*Герундий + in* часто обозначает причину действия главного глагола)	***При решении/в процессе решения проблем (ы)* (*решая проблемы/когда Вы решаете проблему*)** необходимо различать факты и гипотезы	Существительным с предлогом; деепричастием; придаточным предложением
	Through working with young children for the last 40 years, she has come to understand their behavior better	***Посредством/благодаря тому, что/из-за того, что*** *она работала с маленькими детьми последние 40 лет, она научилась их понимать лучше*	
	Герундий употребляется в форме Perfect Active для обозначения действия, которое предшествует действию, выраженному глаголом-сказуемым в предложении. **Only *after having used*** this device we could improve the process quality	***Только после использования этого устройства (использовав это устройство/после того, как мы использовали это устройство)*** *мы смогли улучшить качество процесса*	

Примечание. При переводе герундия в функции обстоятельства важно правильно перевести предлоги. Основные из них приведены ниже.

In – *при, в.*

(Up) on – *после, по* (одно действие незамедлительно следует за другим). Upon reading this text we shall be able to answer the questions (прочитали текст и сразу можем отвечать на вопросы).

After – *после* (между одним действием и другим имеется определенный промежуток времени). After entering the room he turned light on (сначала вошел в комнату, а уже потом включил свет).

Before – *до.*

By – *при помощи, путем.*

Through – *через, благодаря.*

Without + ing может переводиться *отрицательным деепричастием – не говоря/ не сказав.*

Упражнение 104. Прочтите следующие сочетания и предложения, найдите в них герундий в функции обстоятельства и переведите их.

a) In obtaining the possibility of change the designer can face …; on obtaining the possibility of change, the designer could solve …; in spite of being

charged the particles can be used to …; without forming high frequency transistors and integrated circuits the engineers could not …

б) 1. By working hard, she passed her maths exam. 2. In explaining his project he forgot one point. 3. We keep data and programs in memory systems where they are available for processing. 4. We use the term data processing to include the resources applied for processing of information. 5. They can be used as mobile phones or as personal organizers for storing notes, reminders and addresses. 6. Accelerate your digital lifestyle by choosing a powerful Pentium at 4.3 GHz. 7. An ink-jet (or bubble-jet) printer generates an image by spraying tiny, precise drops of ink onto the paper. 8. Upon switching off the current the pressure dropped. 9. I can't go to this place without having prepared my calculations first.

Упражнение 105. Прочтите предложения, найдите в них герундий, определите его функцию и переведите.

1. Be slow in choosing a friend, slower in changing him. 2. In criticizing the panting, I knew I would offend her. 3. You cannot make an omelet without breaking eggs. 4. Learning without thought is labour lost, thought without learning is perilous (*опасно*) /Confucius/. 5. Research is searching without knowing what you are going to find. 6. By moving to a smaller flat, she saved over a hundred pounds a months. 7. Upon passing his examinations, he was accepted to the Academy. 8. He solved the problem by inventing a new kind of plastic. 9. John was the first person I saw on leaving hospital. 10. On entering the classroom, she was surprised when all children stood up. 11. After entering the classroom, she turned light on. 12. He could not answer for coughing.

Обратите внимание! Окончание **-ing** могут иметь причастия в функции обстоятельства: reading the book – *читая книгу*/*прочитав книгу*; причастия в функции определения: the reading student – *читающий студент*; герундий: after reading the text – *после прочтения текста*; отглагольные существительные: the reading of the text. **Сравните:** the boiling water – *кипящая вода* (причастие I в функции левого определения); the boiling of water – *кипение воды* (отглагольное существительное). Отглагольное существительное, совпадая по форме с причастием и герундием, имеет все свойства существительного: артикль, форму множественного числа, возможность иметь определение, у него нет времени и залога.

Упражнение 106. Прочтите предложения, найдите в них герундий или причастие, определите их функцию и переведите.

1. Everything must have a beginning. 2. The proof of the pudding is in the eating. 3. We obtained these values in terms of the following formula. 4. Before starting the engine it is necessary to test the piping for leakage. 5. Growing bigger and faster, a new generation of computers changed greatly. 6. The new technique of computing is worth thinking about.

Упражнение 107. Замените формы причастия в функции обстоятельства соответствующими формами герундия с предлогами **in** или **on**.

Пример: (While) making – in making.

Having made – on making.

1. While melting the ice keeps the same temperature. 2. Using a transformer one can increase the voltage. 3. Having made a lot of experiments Faraday discovered the electromagnetic induction. 4. Leaving the metal surface the electrons can produce considerable currents.

6.3.3. Сложный герундиальный оборот

Сложный герундиальный оборот – это сочетание притяжательного местоимения или существительного в притяжательном или общем падеже с герундием, выступающее в предложении как единый (сложный) член предложения. Весь оборот обычно переводится на русский язык придаточным предложением, подлежащее которого соответствует притяжательному местоимению или существительному в притяжательном или общем падеже английского герундиального оборота, а сказуемое – герундию этого оборота.

1. The heat treatment consists in **our raising** the temperature of the emitter to about 2500. – *Термообработка заключается в том, что **мы повышаем** температуру излучателя до 2500.*

2. We have read **of Jacobi's having utilized** an electromagnetic engine for practical purpose. – *Мы читали о том, что **Якоби использовал** электромагнитный двигатель для практических целей.*

3. I was so sorry to hear about **your computer being broken**. – *Мне было так жаль слышать, что **твой компьютер сломался.***

Как единый член предложения герундиальный оборот может выполнять в предложении различные функции: сложного дополнения (как в приведенных выше примерах), сложного подлежащего, сложного предложного дополнения, сложного обстоятельства, сложного определения (см. соответственно примеры 1, 2, 3, 4 в упражнении ниже).

Упражнение 108. Прочтите и переведите предложения с герундиальным оборотом.

1. Jon's doing it at once is absolutely imperative. 2. The potential of a conductor rises because of the electrons being crowded upon a conductor. 3. By our increasing the pressure we increase the force of friction. 4. The process of one substance mixing with another is called diffusion. 5. Excuse my having interrupted you. 6. We thought of their improving methods of production. 7. We have never heard of his having belonged to this scientific society. 8. I hate the idea of your wasting your time.

Упражнение 109. Прочтите и переведите предложения с часто встречающимися герундиальными оборотами.

1. It's no good leaving the work uncompleted. 2. I can't help being surprised at their success. 3. One more fact is worth mentioning. 4. He is busy checking the equipment for the experiment. 5. They succeeded in obtaining all the instruments[77] they needed. 6. He is used to working under such conditions. 7. It's no good wasting much time in debates. 8. I can't help mentioning one more fact.

6.4. Придаточные обстоятельственные предложения

Тип придаточного; союзы, его вводящие	Примеры	Перевод
Придаточные места: **where –** *где*, *куда*; *там*, *где*	**Where** there is a will there is a deed	***Где*** *есть желание, есть и дело*
Придаточные времени: **when** – *когда*; **as –** *когда*, *по мере того как*; **while –** *в то время как*; **before** – *до того как*, *перед тем как*; **after –** *после того как*, *как только*; **as long as –** *пока*; **as soon as –** *как только*; **till, until** – *до тех пор/пока … не*	Consistency will increase **as** the process progresses	*Логичность будет усиливаться,* ***по мере того как*** *процесс будет развиваться*
Придаточные уступительные: **though, although, while** – *хотя*; **whereas** – *в то время как*, *тогда как, несмотря на то*, *что*; **even if –** *даже если*	**Although** the new method can be used to study these systems we shall use the old one	***Хотя*** *новый метод может быть использован для изучения этих систем, мы будем использовать старый*
Придаточные цели: **that –** *чтобы*; **in order (that) –** *для того*, *чтобы*; **lest –** *чтобы … не*	Two different sources were used, **lest** there be interference	*Использовались два различных источника,* ***чтобы не*** *было взаимовлияния*
Придаточные следствия: **so that** – *так, чтобы*	They gathered together round the table **so that** they could review the procedures they now follow	*Они сели за круглый стол,* ***чтобы*** *обсудить методы, которые используют сейчас*
Придаточные причины: **as –** так как; **since** – *поскольку*, *так как*; **for** (в начале предложения и после запятой – **сочинительный союз в сложносочиненном предложении**) – *ибо, потому что, так как*	**Since** computers are faster at calculations, they can test every possible move on the board	***Поскольку*** *компьютеры считают быстрее, с их помощью можно проверить любые возможные ходы на (шахматной) доске*

Окончание таблицы

Тип придаточного; союзы, его вводящие	Примеры	Перевод
Придаточные условия: **if –** *если*; **unless –** *если… не*; **provided, providing that** – *при условии, если/что*	**If** I just touch the wrong button by mistake I'll lose all my work	***Если*** *я вдруг по ошибке нажму не ту клавишу, вся информация будет потеряна*
Союзные слова с усилительной частицей **ever: however** + прил. или нареч. – *как бы ни*, *каким бы … ни* (however выделенное запятыми – *тем не менее*, *однако*), **whatever** + сущ. или мест. – *что бы ни*, *каким бы ни был*, **whenever** – *когда бы ни*; *всегда*, *когд*а; *всякий раз как*, **whichever** – *который* (*бы ни*)	**However** difficult the problem may be it must be solved. This is not so, **however,** in the case of this compound. **Whatever** they do the results of their work are always good. The mercury pool must be replaced **whenever** a solution is discharged. A mixture of the two compounds is formed **whichever** one is used initially	
Придаточные образа действия **as if, as though** – *как будто/как если бы*	Eric sat down in the nearest chair **as if** he were collapsing from the fatigue	*Эрик опустился на ближайший стул,* ***как будто*** *усталость сломала его*

Упражнение 110. Прочтите и переведите предложения, обращая внимание на союзы, вводящие придаточные обстоятельственные.

Обратите внимание, что некоторые союзы могут вводить эллиптические конструкции.

1. Until the reaction is over no definite evidence can be obtained. 2. This value may be subject to refinement when analyses are complete. 3. Although these two methods will require completely different control structures, the techniques used will not be very different. 4. The heat problem will become insignificant, since transistors emit a negligible amount of heat. 5. However many times the experiment was repeated the result was always the same. 6. The real surface area of films is sometimes equal to their apparent area whatever the film weight. 7. You will be informed as soon as the drawings are received. 8. After the system has been running for a reasonable period of time, it will be possible to gather empirical data. 9. Problem cannot be solved until they are accurately defined.

10. As soon as the iron is removed from the magnetic field, it loses the magnetism. 11. Although there is a theoretical possibility, the nuclear rocket motor is not likely to be used within the next few years. 12. Galileo proved that objects fall at the same speed whatever they weight. 13. In effect, each particle of iron (or any other material that can be magnetized) behaves as if it had a north pole and a south pole.

Обратите внимание! Конструкция **now (that)** переводится как «*теперь*, *когда*».

And **now that** laptop computers have shrunk in size, swiping them has become easier. – *Теперь, когда ноутбуки уменьшились в размере, украсть их стало проще*.

6.5. Многофункциональность служебных слов

Обратите внимание! Многие служебные слова в английском языке, в том числе те, которые могут употребляться в предложении в роли союза, многофункциональны, т. е., в зависимости от их места в предложении и контекста, они являются: **1)** либо союзами, либо предлогами; **2)** либо союзами, либо наречиями. В зависимости от их роли в предложении, они переводятся по-разному.

Следует различать: till, until в качестве союза, который вводит придаточное предложение – ***до тех пор пока*** (***не***) и предлога – ***до.***

It is important not to look for solutions **until** all the facts have been gathered. – *Важно не искать решения,* ***пока*** *все факты* ***не*** *будут собраны* (союз).

Wait for me **till** 8. – *Жди меня* ***до*** *8* (предлог).

Следует различать: **before** в качестве союза, который вводит придаточное предложение и переводится ***прежде чем, перед тем как***, и **before** в качестве предлога, который переводится ***до***, или наречия – ***ранее, раньше***.

A tested specimen elongates **before** a rupture takes place. – *Испытываемый образец удлиняется,* ***перед тем как*** *произойдет разрыв* (союз).

All gases liquefy **before** reaching absolute zero. – *Все газы сгущаются в жидкость* ***до*** *достижения ими температуры абсолютного нуля* (предлог).

I haven't never seen him **before**. – *Я никогда* ***раньше*** *его не видел* (наречие).

Следует различать: after в качестве союза, который вводит придаточное предложение и переводится ***после того как***, и предлога ***после***.

The elongation of the test specimen was measured **after** its broken ends had been put together. – *Удлинение испытываемого образца было измерено,* ***после того как*** *его сломанные концы были сложены вместе* (союз).

I went for a swim **after** breakfast. – ***После завтрака*** *я пошел плавать* (предлог).

Следует различать: 1) **because** в качестве союза, который вводит придаточное предложение и переводится ***так как***, ***поскольку*** – если находится в начале предложения, либо ***потому что*** – если в середине предложения и 2) устойчивого словосочетания **because of** в значении предлога, который переводится ***из-за***, ***по причине***, ***вследствие***, ***благодаря***.

Because they often affect the size of a program the checks are often held in disrepute. – ***Так как*** *проверки часто влияют на размер программы, ими часто пренебрегают* (союз).

The practical applications of superconductivity are limited **because** the very low temperatures are required. – *Практическое применение сверхпроводимости ограничено,* ***потому что*** *требуются очень низкие температуры* (союз).

The conductivity is never perfect **because of** resistance to the flow of current in metals. – *Проводимость* ***из-за*** *сопротивления, оказываемого течению тока в металлах, никогда не бывает полной* (устойчивое словосочетание).

Следует различать: использование **since** в качестве союза, который вводит придаточное предложение и переводится ***поскольку, так как***, в качестве предлога ***с*** перед любыми словами и словосочетаниями, указывающими на время, или **since** в качестве наречия – ***с тех пор***.

The concept in this simplified diagram is not new, **since** emission of electrons from the surface of a heated cathode is a process long used in electron tubes. – *Идея, представленная на этой упрощенной диаграмме, не нова,* ***поскольку*** *испускание электронов с поверхности нагретого катода – это процесс, который уже давно применяется в электронных трубках* (союз).

S**ince** 1918 electric bulbs have been filled with gas. – ***С (начиная с)*** *1918 электрические лампы заполняются газом* (предлог).

I met him in 2007 and have not seen him **since**. – *Я встречал его в 2007 году и* ***с тех пор*** *не видел* (наречие).

Следует различать: once в качестве союза, который вводит придаточное предложение и переводится ***как только, если, когда***, и **once** в качестве наречия – *однажды*, *один раз*, *когда-то*, сразу (**at once**).

Once data is in a microcomputer, it is processed by the microprocessor. – ***Как только*** *информация поступает в микрокомпьютер, она обрабатывается микропроцессором* (союз).

I only met him **once**. – *Я встретил его только* ***один раз*** (наречие).

You ought do it **at once**. – *Вы должны это сделать* ***сразу*** (наречие).

Следует различать: for в качестве союза, который соединяет две части сложносочиненного предложения и переводится ***ибо, так как*** и **for** в качестве предлога – **для, на, в течение**.

Упражнение 111. Прочтите и переведите предложения, обращая внимания на многозначность служебных слов.

A) 1. Facts do not cease to exist because they are ignored. 2. And we forget because we must, and not because we will. 3. The company has lost several customers because of its very bad work. 4. The process has been widely used because it was relatively easy to implement. 5. Because of this the strategy of both players has high stability. 6. He is not able to do things properly because he does not give them enough thought. 7. Because so many companies produce IBM-compatible computer, there are many possible configurations.

B) 1. Once the two players choose particular strategies, the play is completely determined. 2. The truth does not come at once. 3. The text will be read once. 4. Once the structure had been completed its decoration was begun. 5. You ought to do it at once.

C) 1. The process has been used since its first announcement. 2. I have not had a competent assistant since Joe left. 3. Since the theory should be a general one it should apply in all cases mentioned. 4. Since (then) attention has been focused on understanding the fundamental mechanisms involved in this process. 5. Since the early 1970's a happy equilibrium has been reached in the society. 6. Their computation on a digital computer is efficient since only logical expressions and elementary algebraic functions are involved. 7. These new frequencies are called side frequencies since they appear on each side of the carrier. 8. Since 1970 he worked in our lab.

D) 1. Stay with us for the weekend. 2. Blessed is he who expects nothing, for he shall never be disappointed. 3. It is time for the political opponents of the government to stand up and be counted. 4. That is another cause for suspicion. 5. Everybody lives for something better to come. 6. Eat, drink and be merry, for tomorrow you die. 7. One law for the rich and another for the poor. 8. Much is to be done in the field of green IT for the environment problems to be solved successfully.

E) 1. The word "peripherals" is potentially confusing as it is sometimes used to refer to non-essential elements of a computer system. 2. These programs are called applications, as are examples of computing technology applied for specific tasks. 3. In everyday language, people often refer to applications as programs.

F) 1. The word "helium" comes from the Greek word "sun" because that element was discovered in the sun before it was discovered on the earth. 2. Before the Second World War rockets were largely experimental. 3. After a period of discharge the battery can be restored to its original[78] condition. 4. After it became clear that some mistake had been made in the calculation, the experiment was stopped.

7. ОПРЕДЕЛЕНИЕ (THE ATTRIBUTE)

Определение – это второстепенный член предложения, который определяет существительное и обозначает признак предмета. Определение отвечает на вопросы ***какой? который? чего?*** и может стоять как слева, так и справа от определяемого существительного, образуя с ним группу существительного.

7.1. Перевод существительного с левыми определениями

7.1.1. Левые определения, представленные одним или несколькими существительными

В научно-технической литературе широко используются определения, представленные одним или несколькими существительными, стоящими перед определяемым словом (так называемые **«цепочки»)**. Определения могут состоять также из существительных в сочетании с прилагательным, причастием, герундием или числительным. Как правило, цепочка существительных используется для того, чтобы избежать излишне частого употребления предлога **of** в английском тексте.

Перевод терминологических словосочетаний (цепочек) на русский язык следует начинать с ядра всего многокомпонентного терминологического сочетания, т. е. с определяемого существительного, справа налево. Остальные компоненты цепочки переводятся существительными в родительном падеже, прилагательными или существительными с предлогами. Иногда требуется подобрать русский термин, принятый в данной области.

Process **control** – *управление процессом*; control **process** – *процесс управления*;

reduction **cost** – *затраты на уменьшение*; delay line **store –** *блок памяти с линией задержки*; fraud **risks** – *риски, связанные с возможностью быть обманутым.*

Упражнение 112. Прочтите и переведите словосочетания и предложения, обращая внимание на перевод «цепочек».

A) Test operation, operation test, export oil, oil export, satellite dish, power consumption, power consumption change, signal manipulation, transistor invention, circuit functions, communication system, data processing system, integrated circuits developments, science field, cost reduction, Internet access devices, data network providers, size reduction need, communication means, pattern recognition, air traffic control, network management application, solid state storage device, high – speed computers, relatively cheaper source material, the cheapest source material, local exploration office, national fibre[79] backbone, a user's location, the

world's third largest telecom equipment manufacturer, wireless sensor network architecture, designing storage area networks, web sphere certification study guide.

B) 1. Transistor performance was steadily improved. 2. All our customers need is a broadband pipe into our network cloud. 3. The geophysicists did not find evidence of underground oil reservoirs. 4. It should support our voice and email requirements. 5. In the mountains regions they are erecting point to point microwave towers. 6. High-performance servers require high performance network connection. 7. We have a ten-strong Application Implementation team. 8. This analysis provides a specification or Software Requirements Analysis.

7.1.2. Левые определения с причастиями

Причастие, стоящее слева от существительного, может выполнять функцию левого определения, тогда оно отвечает на вопрос **какой?** и обычно переводится русским причастием.

Participle I (Ving) в этой функции переводится на русский язык причастием действительного залога настоящего или прошедшего времени – ***использующий, использовавший***.

An increas**ing** size – *увеличива**ющ**ийся размер*.

Participle II (Ved/III форма) переводится русским причастием страдательного залога настоящего или прошедшего времени – ***использованный, используемый***.

Partially chang**ed** operations. – *Частично измен**енн**ые (изменя**ем**ые) операции.*

Упражнение 113. Прочтите и переведите словосочетания и предложения, обращая внимание на перевод существительных с левыми определениями, в состав которых входят причастия.

A. An operating device, the given information, an existing software product, a slowly operating device, digital switching equipment, the coded date, the increased complexity of the designs, commercially produced devices, twisted copper pair, packetized voice over Internet, the advantage of carefully prepared silicon surfaces.

B. 1. Developing countries seek to upgrade their telecoms networks. 2. 3 G (and coming soon, 4 G and LTE) is a well-established wireless network in developed countries. 3. Chess – playing computers probably provide the best examples of machines exhibiting what might be thought of as "intelligent behavior". 4. Mobile Wi-Max supports both fixed and mobile applications with improved performance. 5. Copper fixed lines are being rolled out. 6. Historically, in-country, we have had poor fixed line infrastructure. 7. One recently invented microelectronic functional element has a distinction. 8. Several assigned channels were transmitted and received from the antenna atop this tower. 9. Talking Software is an SME-sized software development company.

7.2. Перевод существительных с правыми определениями

7.2.1. Устойчивые словосочетания существительных с предлогами в качестве правого определения

В английском языке есть ряд устойчивых словосочетаний существительных с предлогами, которые используются в роли определения и переводятся на русский язык прилагательным, причастием (при переводе обычно ставятся перед определяемым существительным) или определительным придаточным предложением с союзом ***который***.

The event under consideration – ***рассматриваемое*** *событие*.

The problem in point – *проблема,* ***о которой идет речь***.

Запомните часто встречающиеся сочетания, указанные в таблице.

Пример	Перевод
in use	используемый
in question	о котором идет речь
under discussion	обсуждаемый
under consideration	рассматриваемый
under construction	сооружаемый
under test	испытываемый
under investigation	исследуемый

7.2.2. Прилагательное в качестве правого определения

В научно-технической литературе и в более формальной коммуникации определение, выраженное прилагательным, может располагаться после определяемого слова. При переводе его обычно ставят перед определяемым существительным.

The shift ***possible*** is used … – ***возможный*** *сдвиг используется …*

The information ***available*** was insufficient to reach any satisfactory conclusions. – ***Имеющейся*** *информации было недостаточно для того, чтобы сделать какие-либо удовлетворительные выводы.*

7.2.3. Герундий в качестве правого определения

Герундий может стоять после определяемого слова чаще всего с предлогами **for** или **of**. Переводится существительным.

The way of developing materials. – *Способ* ***разработки*** *материалов*.

Обратите внимание на другие предлоги, которые используются после существительных, указанных в таблице.

Существительные	Предлог	Пример
Difficulty, experience, harm, interest, sense, skill, use	in	We had difficulty in downloading the app. – *У нас были трудности* ***с загрузкой*** *приложения.*
Astonishment, disappointment, surprise	at	They showed disappointment at having bugs in the software. – *Они выразили разочарование* ***от наличия*** *ошибок в ПО.*
Precaution, warning	against	We need to take precautions against spreading the virus. – *Мы должны принять меры предосторожности* ***против распространения*** *вируса*.

7.2.4. Причастия в качестве правого определения

Причастия, располагающиеся за определяемым словом, переводятся так же как и перед ним (п. 7.1.2). Они при переводе обычно ставятся перед определяемым существительным. Можно переводить и определительным придаточным предложением с союзом ***который***.

The reliability concerning the device points … – *Надежность,* ***касающаяся*** *устройства …*

The technique being developed is of great importance. – ***Разрабатываемая*** *технология имеет большое значение/ технология,* ***которая разрабатывается****, имеет большое значение*.

The dimension required. – *Затребованный (требуемый) размер*.

The delay associated with the interconnection is dependent on two parameters. – *Задержка,* ***связанная с соединением,*** *зависит от двух параметров.*

Упражнение 114. Прочтите и переведите словосочетания и предложения, учитывая особенности перевода существительных с правыми определениями.

A. A network operator in charge …; the chip under development provides …; the solution in point …; difficulty of manufacturing switching systems …; the instrument available can provide …; benefit resulting from microelectronic …; a computer network covering a local area …; an educational laptop being produced …; a wafer of silicon spoken about is heated …; software delivered as a service …; computers using vacuum tubes …; students coding the information by using a binary code …; instructions kept in the memory.

B. 1. There are about three million computers in use in the world now. 2. The concept of cloud computing under consideration is far from new. 3. Telecoms companies under discussion made most of their profits from voice calls. 4. From the information available, the technology under consideration demands substantial design efforts. 5. There will not be fibre available to the customers' premises (помещения) for at least two years. 6. This method of recording, editing and distributing audio, video and sound files served as an efficient means of organizing the project.

Упражнение 115. Прочтите и переведите предложения, обращая внимание на правые определения.

1. There are dominant factors limiting device performance. 2. So there are redundant connections and services coming into the country. 3. Processors using the K5 architecture are fully compatible with software applications for Windows. 4. A RAM module holding 40 components was described at the Electronic Components Conference. 5. Open source software being used is becoming more and more popular. 6. The signal being transmitted varies continuously, both in frequencies and in amplitude. 7. The device used was mechanically strong. 8. Circuits developed consisted of two layers. 9. John, would you mind explaining the workstreams involved? 10. The explanation offered was rather uncertain. 11. The most common device used for input on microcomputers is the keyboard. 12. Circuits developed in the new project had two layers. 13. Time delays associated with interconnection made of different materials have been considered. 14. The "mouse" developed by the Logitech firm and known as Mouseman has an asymmetrical form for the right or left hand. 15. Data recorded in the form of magnetized dots can be arranged to represent coded patterns of bits. 16. More murky sources include phishing software planted by computer hackers.

7.3. Инфинитив в функции определения

7.3.1. Инфинитив в страдательном залоге в функции определения

Такой инфинитив обычно имеет модальный оттенок необходимости или значение будущего времени и переводится на русский язык придаточным определительным предложением, начинающимся словом ***который***; причем в состав сказуемого вводятся слова ***нужно***, ***необходимо***, ***следует,*** или же глагол-сказуемое ставится в **будущем времени**.

The information **to be stored** is taken from the journal. – *Информация, **которую нужно сохранить (которая будет сохранена)**, взята из журнала.*

Упражнение 116. Прочтите и переведите словосочетания, содержащие конструкцию «инфинитив в страдательном залоге в функции определения».

The problem to be solved; the work to be finished; the cards to be punched; calculations to be performed; the machine to be shown in the exhibition; computers to be used for data processing; the device to be provided with necessary facts; some dirty or unclean data to be removed.

Упражнение 117. Прочтите и переведите следующие предложения, содержащие конструкцию «инфинитив в страдательном залоге в функции определения».

1. The convergence of technologies is the problem to be studied in the next twenty years. 2. The cloud and cloud computing are new terms to be explained. 3. The alternative method to be considered is contactless payment. 4. Another factor to be taken into consideration is the cost of high-quality GPS (Global Positioning System). 5. Polysilicon to be used meets all of the requirements addressed above. 6. Also, the programs to be verified will have to be well constructed, to make the job easier. 7. A problem to be solved by a digital computer must be expressed in mathematical terms that the computer can work with. 8. Because of their ability to remove any dirty or unclean data this software is in operation. 9. The quality of speech signals to be transmitted may degrade. 10. The primary factors to be considered are signals power and noise power. 11. The computer to be made will have a cycle time (*время выполнения одной операции*) of two nanoseconds.

7.3.2. Инфинитив в действительном залоге в функции определения

В литературе встречается инфинитив в функции определения в форме действительного залога. В этом случае он переводится определительным придаточным предложением с **глаголом в настоящем времени без добавления слов *нужно, необходимо, следует***.

Equipment **to operate** under water has been designed. – *Оборудование, **которое работает** под водой, было сконструировано*.

Упражнение 118. Прочтите и переведите сочетания, содержащие конструкцию «инфинитив в страдательном или в действительном залоге в функции определения».

Efforts to increase reliability, electronics to connect systems and subsystems, vacuum tubes to control and amplify electric signals, these are circuits to use a large number of transistors, operations to be performed, reliability to be achieved, the components to be fabricated, a wireless network to be established, software to be manufactured, the concept to be referred to in the paper, a map of the local area to be displayed on the device screen.

7.3.3. Инфинитив в функции определения после слов: the first, the second, the last и т. д.

Инфинитив в функции определения после вышеперечисленных слов переводится на русский язык глаголом в личной форме в том времени, в каком стоит глагол-сказуемое английского предложения.

He **was** the first to come. – *Он первым **пришел** сюда.*

He **will be** the last to leave. – *Он **уйдет** последним.*

В некоторых случаях удобнее перевести определительным предложением, вводимым словами ***который*** или ***кто***.

Dr. Brown was among **the first** researchers to test the new software on aphasics. – *Доктор Браун был среди первых исследователей, **кто** испытал новую программу на больных афазией.*

Упражнение 119. Прочтите и переведите предложения.

1. Telecoms companies were among the first to give their customers facilities such as Internet access or mobile telephony. 2. A Blackberry (a type of hand-held device) was the last to be mentioned. 3. The Barclaycard was the first business contactless payment system to be launched in London. 4. The operating system is the first program to be processed after the computer is turned on. 5. Giles Sequeira, 40, a property developer from London, is one of the first people to test the new privacy marketplace.

Упражнение 120. Переведите следующие словосочетания на английский язык.

Процесс, которым будут управлять; затраты, которые должны быть уменьшены; сети, которые будут соединены; сети, которые следует модернизировать; метод, который будет рассмотрен; информацию, которая должна быть послана; устройство, которое будет разработано; компьютер, к которому надо получить доступ; цель, которая должна быть достигнута; система оплаты, которая будет запущена; программа, которая будет проверена; ненужная информация, которая должна быть удалена; фактор, который должен быть учтен.

7.4. Придаточные определительные предложения

Придаточное определительное предложение отвечает на вопросы ***какой? какая?*** Такое предложение всегда стоит после определяемого существительного и является единственным типом придаточного предложения, которое может отделять подлежащее главного предложения от сказуемого.

The house ***where we live*** is new. – *Дом, **в котором мы живем**, новый.*

7.4.1. Союзные придаточные определительные предложения

Союзные придаточные определительные предложения соединяются с определяемым существительным при помощи слов **who**, **whose**, **which**, **that**, **where**, **when**. На русский язык переводятся придаточными предложениями.

They offer a lot of connectivity options **that we can use**. – *Они предлагают множество вариантов подключения,* ***которые мы можем использовать***.

Упражнение 121. Прочтите и переведите предложения, обращая внимание на союзные придаточные определительные предложения.

1. These surveys produced a lot of data which needed to be sent back. 2. The computer can display the data on a monitor screen, of which there are several types. 3. Field size determines the maximum number of characters[80] or numbers that can be stored in a field. 4. Modern business needs people who can solve problems. 5. Another application that has steadily grown with microcomputer use is electronic mail. 6. In this case the commands are simply programs, whose execution is chained together.

7.4.2. Бессоюзные придаточные определительные предложения

В английском языке, в отличие от русского, союз перед придаточным определительным предложением может отсутствовать. В таком случае по наличию двух сказуемых и двух подлежащих определяем, что данное предложение является сложным предложением. Граница (и, следовательно, место пропущенного союза) между главным и определительным придаточным будет находиться между двумя существительными или существительным и личным местоимением.

Equally important are the effects | the microcomputer has had on homes and schools. – *В равной мере важны те воздействия,* ***которые*** *компьютер оказывал и оказывает на нашу жизнь дома и в школе.*

Упражнение 122. Прочтите и переведите предложения с бессоюзными определительными придаточными предложениями.

A. 1. There are now lots of applications you could download. 2. I'm sorry to hear about the business issues you are experiencing. 3. The capacity of a computer memory is the volume of data the memory unit can hold. 4. All computers use the same basic techniques for carrying out the tasks we give them. 5. Entering text is done through the keyboard; the text you type shows up at the cursor. 6. Many computer operating systems allow the user to install or create any user interface they desire[81]. 7. Application software is what makes a computer a tool for performing the tasks we often need to complete at school, at home, or at office. 8. They could install a new software we have developed. 9. The few calls he made and emails he sent were digitally recorded and archived for three years. 10. The Pentium processor is currently the most powerful processor Intel offers for the personal computer. 11. The teacher says we may ask any questions we ask. 12. Where are the computer games I gave you yesterday? 13. He was one of the greatest scientists the world had ever known.

B. 1. The computer you told me about was constructed in Russia. 2. We hope we'll buy the computer your friend spoke so much about. 3. This is the principle the electronic computer is based upon. 4. Elements integrated circuits are made of are electrically interconnected components. 5. The main tendencies of IC development scientists are working at are to increase the scale of integration and to improve reliability. 6. The computer games you asking me about are on the top shelf.

7.5. Дополнительные упражнения по темам «Определение» и «Неличные формы глагола»

Упражнение 123. Выберите правильный вариант перевода определения, выраженного причастием.

1. The results **described** do not prescribe a specific method of synthesizing data compression system:

a) описывающие, b) описанные, c) которые будут описаны.

2. Satellites **using** very short microwaves could make high – capacity communication between cities cheaper:

a) использующие, b) используемые, c) которые должны использоваться.

3. The machine can also shift the sounds **being played**:

a) воспроизводящие, b) воспроизведенные, c) которые воспроизводятся.

Упражнение 124. Укажите, какое из слов с **-ed** является определением.

1. The article published suggested a different reaction:

a) published, b) suggested.

2. The data obtained outweighed those that we had had before:

a) obtained, b) outweighed.

3. The recent talks resulted in the agreement just signed:

a) resulted, b) signed.

Упражнение 125. Выберите правильный вариант перевода определения, выраженного пассивной формой инфинитива.

1. We should decrease the rate of information **to be sent** through the channel:

a) которая передается, b) которая будет передана, c) которую передали.

2. The problem **to be solved** at this stage is an entirely geometric one:

a) которую решили, b) которую нужно решить, c) которая решается.

Упражнение 126. Найдите в предложении неличные формы глагола и переведите их.

1. When keyed, the data are held in a small memory called buffer. 2. Data keyed into the memory of a computer by typing on a keyboard are readable by humans. 3. Keyboard enables inputting numerical and text data. 4. The mouse

provides the cursor control simplifying user's orientation on the display. 5. Having been constructed recently, a new electronic device has important applications in space exploration. 6. Being supplied with a special appliance[82], a television set may have a remote control. 7. The control unit operates by reading one instruction at a time. 8. Improved methods of obtaining three – dimensional television pictures have been worked out on the basis of holography. 9. Input devices are used to enter into primary storage. 10. These data appeared[83] to have been investigated long ago. 11. We are glad to have obtained such valuable results. 12. You should have known wonderful features of computers long ago. 13. The problem to be solved is of great importance to the development of this branch of industry. 14. The first amplifying semiconductor devices (transistors) are known to have been developed in the USA in 1948. 15. He ordered these devices to be repaired as soon as possible.

Упражнение 127. Определите неличные формы глагола, содержащиеся в следующих предложениях. Переведите их.

1. The problems to be studied are of great importance. 2. The problem studied helped us understand many things. 3. To study the problem we must make some experiments. 4. To study the problem means to give answers to many questions 5. Having studied the problem, we could answer many questions. 6. The problem studied is unlikely to be of great importance. 7. Scientists studying the problem made a lot of experiments to get answers to the required questions. 8. The problem to have been studied last year will not help us to solve our task now. 9. Having been well prepared for the examination, the pupils could answer all the questions the teacher asked them. 10. The problem to be discussed at the meeting requires careful consideration.

Упражнение 128. Прочтите предложения, определите функцию инфинитива (обстоятельство/определение/подлежащее/сложное подлежащее/ сложное дополнение/в составе инфинитивной конструкции с предлогом **for)** и переведите предложения на русский язык.

1. We study English in order to read English books on our speciality. 2. To prove this problem means to find a solution for the whole problem. 3. To check the results of the calculation is very important. 4. To know the truth you must make sure that you have considered every detail. 5. He is said to be a new director. 6. This question is sure to arise. 7. For correct conclusion to be drawn all the conditions must be observed. 8. To adjust the new program we shall have to do a great deal of work. 9. To adjust the new program is the purpose of this work. 10. They did not believe this cooperation to be of great consequence. 11. The computation is expected to have been carried out. 12. Certain mistakes appear to have occurred. 13. We study the element to be able to make use of their proper-

ties. 14. This phenomenon does not seem to obey the general law. 15. For the problem to be understood it must be read carefully. 16. He found the modification to require a lot of work. 17. They should be aware of potential of computers to influence our live.

Упражнение 129. Прочтите и переведите следующие сочетания и предложения, обращая внимание на причастия в роли определения, обстоятельства, смысловой части сказуемого и вводного члена предложения.

а) When cooled, the metal provides …; if coated with a photosensitive organic compound the surface of the silicon dioxide can change …; although accepted for different purposes, the computers have the same …; as previously pointed, there exist two lines of development.

б) 1. Generally speaking, a liquid having a free surface is one on whose surface there is absolutely no pressure. 2. A gram of water is proved to change exactly to a gram of ice when freezing and to a gram of water vapor when evaporating. 3. This means that a space program must be flexible and diverse, making it possible to explore completely new fields. 4. Strictly speaking, this somewhat arbitrary division may be justified taking into account an imperfect technique. 5. More or less saturated chloraparaffines are formed, depending on the temperature of reaction. 6. However, speed and power consumption specifications for the devices can be misleading (mislead = *вводить в заблуждение)*. 7. This country embracing over four millions of square miles, being thus larger than the whole of Europe, contained but about two millions of inhabitants.

8. ПЕРЕВОД ЛЕКСИКО-ГРАММАТИЧЕСКИХ ТРУДНОСТЕЙ

8.1. Примечания для некоторых лексико-грамматических явлений

8.1.1. Степени сравнения прилагательных и наречий

В английском языке (как и в русском) прилагательное/наречие изменяется по степени сравнения и имеет три степени сравнения: положительную (нулевую), сравнительную и превосходную.

Односложные прилагательные/наречия образуют сравнительную степень при помощи суффикса **-er**, а превосходную – при помощи суффикса **-est**.

Long/long**er**/long**est** – *длинный/длиннее (более длинный)/самый длинный (длиннее всего/длиннейший).*

Степени сравнения многосложных прилагательных/наречий образуются при помощи слов: **more** – для сравнительной степени и **most** – для превосходной степени.

Important/more important/the most important – *важный/более важный/самый важный.*

Некоторые прилагательные и наречия образуют степени сравнения от разных слов.

Good (well)/better/best – *хороший (хорошо)/лучше/самый лучший*.

Bad (badly)/worse/worst – *плохой (плохо)/хуже/самый плохой (наихудший).*

Little/less/least – *маленький/меньше/самый маленький (наименьший).*

Much/more/most – *много/больше/наибольший, больше всего.*

Far/further (farther)/furthest (farthest) – *далекий (далеко)/дальше (более далекий)/самый далекий.*

Обратите внимание: at least/at most – *в лучшем случае*; at least – *по крайней мере;*

mostly = for the most – *главным образом;* most of – *большинство из ...*

8.1.1.1. Перевод сравнительных конструкций

Прилагательные и наречия употребляются в следующих сравнительных конструкциях: с союзом **as ... as** – *такой (же) ... как (и)/так (же) ... как (и*) (в утвердительном предложении); с союзом **not so ... as** – *не такой ... как* (в отрицательных предложениях).

The land was flat – **as** flat **as** a table. – *Земля была плоской – **такой же** плоской, **как и** стол*.

This room is **not so** light **as** that one. – *Эта комната **не такая** светлая, **как** та.*

Усиление сравнительной степени – для усиления сравнительной степени прилагательных и наречий употребляются следующие слова: **much (well/a good deal/a great deal)** – *гораздо, значительно, намного;* **by far** – *значительно*; **still (ever)** – *еще.*

This way is **much** longer than that one. – *Этот путь **значительно** длиннее того.*

Сравнительная конструкция **the ... the** (*чем ... тем).* **The** + прилагательное (наречие) в сравнительной степени ... + **the** + другое прилагательное (наречие) в сравнительной степени = ***чем … тем***.

The more we read, **the more** we know. – ***Чем больше** мы читаем**, тем больше** мы знаем.*

8.1.1.2. Усиление сравнительной степени

Для усиления сравнительной степени прилагательных и наречий употребляются следующие слова:

Much (a great deal/a good deal) – *гораздо, значительно, намного;*

(By) far – *значительно;*

Still (ever) – *еще.*

Much longer flights were made …

Far more difficult tasks were faced …

Упражнение 130. Прочтите и переведите предложения, обращая внимание на степени сравнения прилагательных и сравнительную конструкцию.

1. I use a better device. 2. This problem is the most important for us. 3. Give me a thicker paper. 4. The more electricity you use, the higher your bill will be. 5. The more you have, the more you want. 6. The longer he waited, the more impatient he became. 7. The more you practice English, the faster you will learn it. 8. The thinner the wire is, the greater the developed heat is. 9. On the contrary, the larger the wire is, the more negligible the heat produced is. 10. This way is much longer than that one. 11. I have bought a much cheaper computer than my friend. 12. We need two integrated circuits at least.

8.1.2. Перевод парных союзов

Both … and – *и ... и, как ... так и* (не путать перевод одиночного **both** – *оба*!);

either … or – *или ... или, либо ... либо*;

neither … nor – *ни ... ни*;

as well as – *так же как (и), а также и*;

not only … but (also) – *не только ... но (также) и.*

Solids have **both** definite volume **and** definite shape. – *Твердые вещества имеют **как** определенный объем, **так и** определенную форму.*

A bug is an error in **either** the syntax **or** the logic of a computer program – “bug”. – *Это ошибка **или** в синтаксисе, **или** в логике компьютерной программы.*

Data communication is **either** synchronous **or** asynchronous. – *Передача информации осуществляется либо синхронно, либо асинхронно*.

It was **neither** a study of the equilibrium **nor** of the kinetics of the reaction. – *Это не было исследованием **ни** равновесия*, ***ни** кинетики реакции.*

We will all follow him, the youngest **as well as** the oldest. – *Мы все последуем за ним – и молодые**, а также и** старые*.

Упражнение 131. Прочтите и переведите предложения, уделяя особое внимание парным союзам.

1. Both faults and errors must be taken into account. 2. It will complicate both the analysis and our understanding of the effect. 3. This was both inevitable and entirely justified. 4. The system can be considered either true or false. 5. Nothing seemed to matter very much either at home or abroad. 6. These countries obtained foreign currencies either by means of export or by means of national production. 7. He has neither the time nor the will to do it. 8. Numerous collections of literature and philosophy, as well as databases of historical events, can be accessed in a variety of ways. 9. Neutrons not only cause fission, but they produce other effects as well.

8.1.3. «Ложные друзья» переводчика

Многие похожие в английском и русском языках слова, чаще всего интернациональные – так называемые **«ложные друзья» переводчика** (они как бы «уводят» учащегося от правильного перевода), могут пониматься в каждом из этих языков по-разному:

actual *a.* – переводится *фактический* (но не – *актуальный*);

affect *v.* – *влиять на* (не – *аффектировать*);

collect *v.* – *собирать*, *собираться* (не – *коллекционировать*);

collision *n.* – обычно: *столкновение* (не – *коллизия*);

construct *v.* – чаще: *строить* (не – *конструировать*);

control *v.* – чаще: *управлять* (не – *контролировать*);

decade *n.* – в английском *10 лет* (не как в русском: декада – *10 дней*);

design *n.* – *проектирование*, *проект*, *чертеж* (не – *дизайн*);

effect *n.* – *действие*, *следствие*, *результат* (не – *эффект*),

сравни: **effect** *v.* – *совершать*, *выполнять*, *осуществлять*;

especially *adv.* – *особенно* (не – *специально*);

film *n.* – чаще: *пленка* (не – *фильм*);

instrument *n.* – чаще: *прибор* (не – *инструмент*);

motor *n.* – чаще: *двигатель* (не – *мотор*);

operation *n.* – чаще: *работа*, *действие* (не – *операция*);

original *a.* – *исходный*, *первоначальный* (не – *оригинальный*);

prospect *n.* – *перспектива* (не – *проспект*);

reflect *v.* – *отражать* (не – *рефлектировать*);

result *v.* – *получаться, давать в итоге, иметь результатом* (не – *результировать*);

resume *v.* – *продолжать* (после перерыва) (не – *делать резюме*);

technique – *способ, методика, техника* (проведения опыта), *метод* (= **method**);

techniques – методики. Сравните:

technology (*технология, техника*), **technics** (*техника, технические науки*), **engineering (*инженерия, техника*)**.

transmitter *n. – передатчик* (гораздо реже – *трансмиттер*).

8.1.4. Многозначность слов

Подавляющее число английских слов (как, впрочем, и русских, и немецких, и французских и др.) многозначны, т. е. значение определяется только из контекста, например:

to develop – *разрабатывать, развивать, проявлять (пленку);*

to consider – *рассматривать, считать, учитывать*;

way *n. – путь, способ;*

to meet – *встречать, соответствовать;*

to act – *действовать, влиять на;*

field *n. – поле, область (науки, техники);*

challenge *n. – запрос, требование, проблема, задача, сомнение и т. д.*

to regard – *считать, принимать во внимание, учитывать, рассматривать*.

Следует помнить, что английское слово, часто знакомое вам еще со школьных лет, в техническом тексте может переводиться по-другому, а иногда превращается в технический термин, например:

to travel – *путешествовать* – в технических текстах обычно переводится *перемещаться.*

circuit *n. – кругооборот* – в технических текстах переводится *электрическая цепь, схема*.

point *n. – точка* – часто переводится *смысл, проблема, момент, черта, смысл* и т. д.

What's the point of having a phone on your desk nowadays, when you can ... – *Какой смысл иметь в наше время на столе телефон, когда вы можете ...*

8.1.5. Несвободные (устойчивые) словосочетания

В зависимости от состава словосочетания можно подразделить на несколько групп.

- **Несвободные (устойчивые) словосочетания с глаголом**

Наряду со словосочетаниями, смысл которых складывается из значений отдельных слов (например, **to take a book** – *взять книгу*), в языке встречаются словосочетания особого рода, в которых отдельные слова теряют свою смысловую самостоятельность и образуют одно устойчивое

(несвободное/фразеологическое) словосочетание, например: **to take part** – *принимать участие* (а *не брать часть*).

To take into consideration (account) – *принимать во внимание, учитывать*: It **should be taken into consideration** that most materials change the value of resistance when the temperature changes. – ***Следует учитывать,*** *что большинство материалов меняют значение сопротивления с изменением температуры*.

To be under consideration – *рассматриваться*.

To be under development – *разрабатываться*, *находиться в стадии разработки*.

To be of importance – *иметь значение*.

To be in operation – *применяться*, *работать*.

To be in position – *быть в состоянии*.

To bring (to put, to set) into motion – *приводить в какое-либо состояние или действие*.

To draw a conclusion – *делать вывод*.

To make use – *использовать*.

To pay attention – *обращать внимание*.

To put into operation (use) – *вводить в действие*.

To take part – *принимать участие*.

To take place – *происходить*.

It requires … (to do smth) – *требуется* (для того чтобы сделать что-либо).

It turns out that – *оказывается, что*.

This is the case – *это имеет место*, *это так и есть на самом деле*.

To come into being – *возникать* (сравните глаголы: to appear, to emerge).

To be in progress – *развиваться.*

To pay attention – *обращать внимание*.

To draw a distinction – *провести различие*.

To make use – *использовать*.

Обратите внимание: многие из подобных словосочетаний встречаются в измененной форме.

The thinner the wire, the higher is its resistance, and **use is made** of this fact in designing rheostats. – *Чем тоньше провод, тем больше его сопротивление. Это положение* ***используется*** *при конструировании реостата.*

- **Несвободные (устойчивые) словосочетания с существительным и другими частями речи**

Rather than – *а не, скорее чем*.

Now she can introduce topics, **rather than** hoping that people will guess what's on her mind. – *Теперь она сама может вводить темы, **а не** надеяться, что люди догадаются, что у нее на уме.*

Сравните: this task is **rather** difficult – *эта задача до некоторой степени/достаточно сложная.*

Упражнение 132. Прочтите и переведите предложения.

1. This should facilitate rather than hinder necessary change. 2. These uniform fields are the exception rather than the rule. 3. This proves to be rather important.

Because of – *из-за, вследствие*;

Due – *должный, нужный, подходящий, обязанный*.

The train has come in due time. – Поезд пришел в положенное время.

Due to – 1) *благодаря, из-за, вследствие*; 2) *разработанный, составленный, представленный, предложенный*, если **due to** используется перед одушевленным существительным.

To be due to – *происходить благодаря* (*из-за, вследствие*), *обусловливаться*.

They paid **due** attention to the problem. – *Они уделяли **должное** внимание этой проблеме*.

The experiment was stopped **due to** the lack of reagents. – *Эксперимент был остановлен **из-за** недостатка реагентов*.

The scheme **due to** Pr. A. is of great interest. – *Схема, **разработанная** профессором А., представляет огромный интерес*.

This was **due to** the raise of temperature. – *Это произошло **вследствие** повышения температуры.*

Упражнение 133. Прочтите и переведите предложения.

1. It was not necessary to use the approach due to Blankenship at all. 2. In this regime, the efficiency changes only slightly due to changes in temperature. 3. The error is mainly due to the latter values. 4. After due consideration of the paper we proceeded to other items of the agenda. 5. The disagreement was due to misunderstanding. 6. However, in most instances when the computer fails, it is due to human error and is not the fault of the computer.

On account of – *из-за, вследствие.* Сравните: **account (***счет***)**; **account for (***объяснять)***/thanks to/owing to/by virtue of** – *благодаря* (чему-либо).

By means – *посредством*. Сравните: **by no means** – *никоим образом*; **to mean** *v*. – *значить*, *иметь в виду*; **means** *n*. – *средство*; **mean** *a*. – *средний*.

In spite of – *несмотря на* (что-либо); **instead of** – *вместо* (кого-либо/чего-либо); **in terms of** – *с точки зрения*; **according to** – *в соответствии с* (чем-либо); **regardless of** – *независимо от* (чего-либо); **up to date** –

современный, новейший; **out of date** – *устаревший*; **for the most part** – *главным образом*, *по большей части*; **so far** – *до сих пор*; **along with** – *наряду с*, *вместе с*; **prior to** – *до*, *перед* (чем-либо); **as compared with** – *по сравнению с* (чем-либо); **with respect (reference, regard) to** – *в отношении, что касается* (чего-либо); **by then** – *к тому времени*; **at length** – *подробно;* **no matter** – *не важно, все равно* и т. д.

8.1.6. Слова и словосочетания, служащие для связи отдельных частей высказывания («текстовые скрепы»)

However (still, yet, nevertheless) – *однако*, *тем не менее*, *все же*; **hence** – *следовательно*; **thus (therefore)** – *итак*, *поэтому*; **probably** – *вероятно*; **perhaps** – *возможно*, *может быть*; **indeed** – *действительно*, *на самом деле*; **in fact** – *фактически*, *на самом деле*; **first of all (to begin with)** – *во-первых*, *прежде всего*; **second(ly)** – во-*вторых*; **finally (at last)/to sum up/to summarize/in conclusion** – (*и*) *наконец*; **besides** (**moreove**r/**in addition**) – *кроме этого*; **on the other hand** – с другой стороны; **as a rule** – как правило; **mainly (largely)** – *главным образом*, *в основном*; **in particular** – *в особенности*, *в частности*; **at most/at best** – *в лучшем случае*; **at least** – *по крайней мере*; **likewise** – *аналогичным образом*, **on the contrary** – *наоборот*; **and vice versa** [vaisivə:sə] – *и наоборот*; **nevertheless** – *тем не менее, несмотря на, однако*; **in short/brief/in a few words** – *вкратце, короче говоря;* **otherwise** – *иначе,* **except for** – *за исключение, если бы не* и другие.

Слова и словосочетания, служащие для связи, могут стоять как в начале предложения, так и в середине. Но во всех случаях эти слова при переводе рекомендуется выносить в начало предложения.

The amount of electricity represented by the proton and the electron is equal in magnitude but opposite in sign. The mass of the atom, **however**, is represented essentially by the proton. – *Электрические заряды протона и электрона равны по величине.* ***Однако*** *масса атома представлена в основном протоном.*

8.2. Дополнительные упражнения на повторение изученного лексико-грамматического материала

Упражнение 134. Переведите предложения, содержащие конструкцию «сложное подлежащее».

1. Printers are known to vary greatly in performance and design. 2. They are expected to be the most commonly used devices. 3. The inkjet printer is stated

to be one of the newest types of character printers. 4. Electrophotographic techniques proved to have developed from the paper copier technology. 5. Dotmatrix printers seem to have a lower quality of type. 6. A laser is certain to be an acronym for light amplification by simulated emission of radiation.

Упражнение 135. Переведите предложения, содержащие следующие конструкции: сложное подлежащее, независимый причастный оборот, сложное дополнение, инфинитив в функции определения.

1. Many servomechanisms and regulators are known to be composed of a number of control elements connected in series, the output of one being used as the input to the text. 2. We expected a computer to work for at least several hours without a fault. 3. A problem to be solved by a digital computer must be expressed in mathematical terms that the computer can work with. 4. Among all forms of magnetic storage, magnetic tapes were the first to be proposed in connection with digital computers. 5. Programming a computer involves analyzing the problem to be solved and a plan to solve it.

Упражнение 136. Переведите предложения с инфинитивом в страдательном залоге.

1. The word “communication” has been used in a very broad sense, in includes all of procedures by which one mind may affect another. 2. All kinds of distortions of sound to be conveyed by telephone communications are called noise. 3. In the mathematical theory of communication the word “information” to be used in a special sense must not be confused with its ordinary usage. 4. The conference to be held in Moscow will discuss questions dealing with communication problems. 5. There are Markoff processes to be widely involved in the theory of communication. 6. The effectiveness problem must have been concerned with the demands of the design. 7. Only the information must have been taken symbolically to represent any two choices. 8. This subject will be dealt with in the next chapter. 9. A new type of computing equipment is being produced at our plant.

Упражнение 137. Проанализируйте неличные формы глагола и правильно переведите предложения.

1. Data are processed to become useful information. 2. We use the term data processing to include the resources applied for processing of information. 3. Resources required for accomplishing the processing of date are called data processing system. 4. Processing is a series of operations converting inputs into outputs. 5. Facilities are required to house the computer equipment. 6. Egyptians used the information to predict crop yields. 7. Information to be put into the computer for processing should be coded into ones and zeroes. 8. Processing is operation on data to convert them into useful information. 9. The first machines designed to manipulate punched card date were widely used for business data

processing. 10. Hollerith built one machine to punch the holes and the other to tabulate the collected date.

Упражнение 138. Переведите предложения, обращая внимание на перевод разного рода несвободных (устойчивых) словосочетаний и «текстовых скреп».

1. Gamma rays and X-rays are both forms of electromagnetic radiation with respect to origin. 2. Secondary electrons vary widely with respect to energy. 3. Relative wind is the motion of the air with reference to an object. 4. The close similarity of Venus and the Earth with regard to size and mass means that the surfaces gravities must be much the same. 5. Due explanation of the phenomenon of radioactivity was first given by Curie. 6. The energy which a body possesses due to its motion is called kinetic energy. 7. Solids maintain their sizes and shapes no matter where they are placed. 8. Research work and experimental investigations are constantly in progress to find materials with the best properties. 9. In order to investigate how these new particles come into being, one must first study a very remarkable phenomena. 10. The scientists pay the closest attention to all previous experiments. 11. It turns out that the problem of carrying away dangerous by-products is not yet solved. 12. The flow of the gas is a more complex problem than the flow of liquids on account of its weight. 13. The Earth circles around the Sun along with other planets. 14. Except for the sun and the Moon, Venus is the brightest object in the sky. 15. Above the critical temperature there is no reason to draw any distinction between liquid and vapour. 16. External forces, whether lifting or otherwise, that act upon a body are termed “loads”. 17. The natural tendency of heat to flow from a higher to a lower temperature makes it possible for a heat engine to transform heat into work. On the contrary, a mechanical refrigerating machine must transfer heat from a colder to a hotter body.

Упражнение 139. Выполните перевод предложений, содержащих различные лексико-грамматические трудности.

1. Accuracy is one of the major items in judging a control system. 2. The higher the accuracy of the system, the less errors the system makes. 3. The digital computer employs the principle of counting units, digits, and hence, if properly guided, gives answers which have a high degree of accuracy. 4. Electronic computers can choose which of several different operations are the right ones in given circumstances. 5. Never before has mankind had such a powerful tool available. 6. In many cases Man has proved to be but imperfect controller of the machines he has created. 7. Thus it is natural that wherever necessary, we should try to replace the human controller by some form of automatic controller. 8. It is necessary to draw a distinction between calculating machines and computers, the former requiring manual control for each arithmetic step and the latter having the

power to solve a computer problem automatically. 9. We know of the earth behaving as a large magnet. 10. Major HMDs are increasingly being integrated into cockpits of modern helicopters. 11. When you've finished writing, you have to tell the computer what you wrote. 12. Programs need to be organized, too. 13. In a conductor current is known to be carried by electrons that are free to flow through the lattice of the substance. 14. The structure of an integrated circuit is sure to be complex both in the technology of its surface and in its internal composition. 15. Programs for a computer might be executed in a batch process without human intervention. 16. Programming language evolution continues, in both industry and research. 17. Client-server networks use servers in different capacities. These can be classified into two types. 18. One open challenge in computer animation is a photorealistic animation of humans.

8.3. Лексико-грамматические примечания к упражнениям

[1] Actually *adv.* – *фактически, в действительности, на самом деле, в данный момент*. Сравните: in fact/in effect/really/indeed. Слово относится к группе так называемых «ложных друзей» переводчика. Более подробно об этом в п. 8.1.3.

[2] Heat *n.* – в данном контексте выступает как абстрактное, неисчисляемое существительное и поэтому употребляется без артикля. Сравните: I have a book/I drink water/I have many (a lot of) books/I have much (a lot of) water.

[3] Сравните глаголы с близкими значениями: to develop (*разрабатывать, развивать*), to design (*проектировать),* to invent (*изобретать*), to devise (*изобретать)*, to engineer (*создавать, изобретать*), to create (*творить, создавать)*. Сравните: *креативный человек.*

[4] It is getting (более разговорное) = it is becoming. Сравните: it is getting/becoming dark *(становится темно).*

[5] To compile *v.* – *собирать факты; компилировать* (в русском языке обычно с отрицательным оттенком).

[6] To install *v.* – *устанавливать* = to set up; to establish.

[7] Large/larger/the largest *a.* – *большой/больше/самый большой*. Сравните: important/more important/ the most important. Более подробно об этом в п. 8.1.1.

[8] To process *v.* – *обрабатывать (информацию*) = to handle. Process *n.* – *процесс.*

[9] To connect *v.* – *соединять, связываться*. Сравните: to link – *соединять, связывать*; to join – *соединять(ся), присоединять(ся);* to combine – *соединять, объединять, смешивать.*

Но: link *n.* (*ссылка* – в Интернете).

[10] Aid *n.* (из французского “aider”) – *помогать* = to help (германское, более разговорное) – *помогать*.

[11] Сравните: rather *adv.* – *довольно, достаточно*, rather than – *а не/скорее*.

This task is a rather difficult task. – *Эта задача до некоторой степени/достаточно сложная.*

This should facilitate rather than hinder necessary change. – *Это должно облегчать, а не препятствовать изменениям.* Более подробно об этом – в п. 8.1.4.

[12] Error/bug *n.* – *ошибки/погрешности компьютера*. Mistake *n.* – *ошибка* (общее понятие). – It is my mistake.

[13] To apply. 1. *Применять*. Сравните: to use; to utilize. 2. *Прикладывать.* Сравните: application – *приложение*. To apply for. – *Обращаться за работой, справкой и т. д.*

[14] Сравните перевод одиночного слова both – *(оба*) и парного союза both … and – *и ... и/как ... так и).* Более подробно о парных союзах – в п. 8.1.2.

[15] To change – *менять*. Постарайтесь не путать слова, которые в английском языке пишутся и произносятся почти одинаково, например: change *n.* – *изменение*/charge *n.* – *заряд*; to devise – *изобретать*/device *n.* – *прибор;* part *n.* – *часть*/path – *путь, дорожка/*party – *вечеринка*. Сравните также перевод: pole – *полюс*, но не *поле.*

[16] Prompt *a.* – *быстрый, проворный, немедленный*. Сравните: fast *a.*, rapid *a.*, quick *a.* – *быстрый, скорый.*

[17] To propose *v.* (обычно на собрании/переговорах) – *предлагать, вносить предложение, представлять кандидата и т. д.* – the conditions proposed – *предложенные условия*. Сравните: to offer – *предложить кому-нибудь что-то купить, посмотреть, попробовать*. I want to offer you a new tablet PC*;* в технических текстах – *оказывать (сопротивление)*; to suggest – *предлагать, советовать.* – I suggested (going) that we should go to the cinema.

[18] Customer *n.* – *покупатель, клиент* = client *n*. [klaiənt].

[19] To research *v.* – *исследовать, заниматься исследованием*. Другие слова с близкими значениями: to explore – *исследовать страну*, to investigate – *исследовать, разузнавать*.

[20] Field *n.* – здесь: *область науки*. Сравните близкие по значению существительные: area, sphere, realm [relm], scope.

[21] To obtain (results) но: to receive (a letter); to gain/to get (access).

[22] Сравните близкие по значению глаголы: to produce, to manufacture, to fabricate (*производить, изготовлять)*.

[23] To remove = to delete – *устранять*, to eliminate – *исключать, упразднять.* Не путать: to replace – *замещать, возмещать.*

[24] To consider *v.* – *рассматривать, учитывать, считать*. Запомните устойчивые словосочетания с глаголом: to take into consideration = to take into account – *учитывать, принимать во внимание*. Сравните также: considerable *a.* – *значительный, важный*. Более подробно об этом в п. 8.1.5.1.

[25] To realize *v.* – 1. *Осознавать, понимать.* 2. *Реализовывать*. Более подробно о многозначности слов – в п. 8.1.4.

[26] Variety *n.* – *разнообразие, множество, ряд*. Сравните другие слова со схожими значениями: a (great) number – *ряд/целый ряд*. Не путать! Number *n.* – *номер, число, количество*. Сравните также: a set *n.* – *набор, ряд*; a collection *n.* – *набор*; a suit [sju:t] *n.* – *набор;* a suite [swi:t] *n.* – *набор*, *комплект, пакет*; a wide range of *n.* – *большое количество чего-либо;* a series [siəri:z] *n.* – *набор, серия*.

[27] Type *n.* – *тип, вид*. Сравните: kind *n.*, sort *n*. Не путать с to type *v.* – *печатать.*

[28] Circuit *n.* – *электрическая цепь, схема*. Сравните: scheme *n.* [ski:m] – *схема, диаграмма.*

[29] Way *n.* – *способ, путь.*

[30] Сравните: to improve, to upgrade, to make better, to amend, to update. Но: to degrade – *ухудшаться*. Сравните с русским словом *деградировать.*

[31] Built – Past Simple от to build. Сравните: sent – *Past simple* от “to send”.

[32] Numerous *a.* = great in number, very many.

[33] To perform = to carry out – *выполнять*. А также близкие по значению глаголы: to accomplish – *выполнять*, to fulfill – *выполнять, исполнять*, to execute – *выполнять* (program). Сравните: performance *n.* – *работа, производительность, эффективность, рабочие характеристики.*

[34] Сравните: to mean *v.* – *означать;* means *n.* – *средства*; by means *prep.* – *посредством;* by no means *adv.* – *ни в коей мере/ни коим образом.*

[35] Сравните ударение в словах: com’ponent *n.*/’element *n.*

[36] Technique *n.* – *способ, методика, техника (проведения опыта), метод* (= method); techniques – *методики*. Сравните существительные: technology – *технология, техника,* technics – *техника, технические науки; engineering – техника, инженерия.*

[37] Paper *n.* – *бумага, картон, статья* = article, *публикация*.

[38] To alter *v.* = to change. Заменить на to allow – позволять, делать возможным

[39] To affect *v.* = to influence – *оказывать влияние.*

[40] Via [vaiə] *prep*. – *через, посредством*. Сравните другие предлоги: through, by means, over (the Internet).

[41] Advantage *n.* – *преимущество*, disadvantage n. [disəd'va:ntidʒ] – *недостаток, дефект,* а также*:* drawback *n.* = defect *n.* = shortcomings *n.*

[42] Сравните близкие по значению глаголы: to transmit, to send, to transfer – *передавать, посылать.*

[43] To 'implement *v.* – *приводить в исполнение, реализовывать, внедрять, имплементировать* – например, закон). Сравните также: to roll out – *постепенно внедрять.*

[44] Comparable *a.* – *сравнимый* (прилагательные с суффиксом «*able*» обычно переводятся на русский язык прилагательными с суффиксами «*ем/им*»).

[45] To travel *v.* (в технических текстах) – *перемещаться*. Более подробно в п. 8.1.4.

[46] Capacity *n.* – *емкость, мощность*. Сравните volume *n.* – *объем.*

[47] Moreover *adv.* – *кроме того/более того*. Сравните: besides/furthermore *adv*. – *кроме того.*

[48] Rate *n.* – *ставка, норма, коэффициент*, скорость. Сравните: speed/ velocity *n*. – *скорость;* frequency *n.* – *частота.*

[49] Instead of (см. п. 8.1.6).

[50] Обратите внимание на разницу в ударении слов: access *n.* – *доступ/*to access – *получить доступ.*

[51] Обратите внимание на разницу в значениях слов: complicated *a.* – *сложный, запутанный*; complex *a.* – *сложный, запутанный, комплексный*; difficult *a.* – *трудный*. This task is difficult; hard *a.* – *твердый, жесткий, усердный*. He is a hardworking student.

[52] To share *v.* – *делить(ся), распределять, разделять*. To share resources/ I share your opinion. Сравните: to allocate – *распределять, назначать.*

[53] To ensure = to make sure – *обеспечивать, гарантировать.*

[54] To include – *включать*. Сравните в большей или меньшей степени близкие по значению слова: to consist of – *состоять из*; to contain – *содержать, включать*; to comprise – *включать, содержать, заключать в себе*; to make up of – *состоять из;* а также to involve – *включать в себя, вовлекать;* to encompass – *окружать, заключать;* to cover – *покрывать, охватывать.* This text consists of/includes/contains/comprises/ is made up of two parts. = There are two parts in this text. This student is involved in our team.

[55] Sensitive *a.* – *чувствительный, важный*. Сравните также: critical *a.* – *критичный, переломный, важный*; crucial [kru:ɬjal] *a.* – *решающий, критический* (о периоде).

[56] In order to *cj.* – *(для того), чтобы.* Не путать: order *n.* – *порядок расположения, порядок (чистота, порядок на собрании), приказ, заказ* (блюда в ресторане).

[57] Experience *n.* – *опыт.* To experience *v.* – *испытать, узнать по опыту.*

[58] Interference *n.* – *вмешательство, помехи.* Сравните: noise *n.* – *шум, помехи.*

[59] Issue *n.* – 1. *Выпуск, номер (*газеты); 2. *Спорный вопрос, проблема*. Сравните также: challenge *n.* – *вызов, проблема*.

[60] To satisfy – *удовлетворять.* Сравните в русском языке: *сатисфакция.* Обратите внимание на словосочетание: to meet the requirements – *удовлетворять требования*.

[61] Architect – [akitekt]. В словах греческого происхождения, например: technology, characteristic «ch» читается как [k].

[62] To regard *v.* – *считать, принимать во внимание, учитывать, рассматривать.* He never regards my advice. Этот глагол близок по значению глаголу to consider. Сравните также: best regards – *с наилучшими пожеланиями* (в конце письма); regardless *adv.* – не обращая внимания.

[63] Object *n.* – *предмет, цель*. Близкие по значению слова: aim *n.*/ goal *n.*/purpose *n.*

[64] To suit = to fit – *подходить, соответствовать.*

[65] To assume = to suppose – *предполагать.*

[66] To expect *v.* – *ожидать, предполагать, думать*. Не надо путать с: wait – *ждать.* I expect/believe/suppose/guess he will come at 5/I'll wait for you at 5.

[67] Сравните: current *n.* – *электрический ток*; current *a.* – *текущий современный*; currency *n.* – *валюта.*

[68] To attract *v.* – *притягивать*. Сравните в русском языке: *аттракцион.*

[69] Обратите внимание на глаголы с близкими значениями: to allow – *позволять*; to permit – *разрешать*; to enable – *давать возможность;* to let – *позволять.*

[70] To run *v.* – *бегать; запускать; возглавлять предприятие*.

[71] To decide *v.* – *решать что-либо делать*. Не путать: с to solve – *решать проблему, задачу и т. д.* I decided to solve this task.

[72] Сравните значения следующих глаголов: to reduce – *уменьшать,* to decrease – *уменьшить (ся*), to make less – *сделать меньше*/increase – *увеличить (ся),* to enlarge – *увеличивать, расширять*, to enhance – *увеличивать, повышать*, to make more – *сделать больше.*

[73] Сравните слова-омонимы: plant *n.* – *завод*; power plant *n.* – *электростанция*; plant *n.* – *растение.* А также, например: case *n.* – *футляр, чехол; случай*.

[74] Storage *n.* – *хранилище, постоянная память*. Сравните: memory *n.* – *оперативная память.*

[75] Enormous *a.*/tremendous *a.* (computer) = huge *a.* – *огромный*; immense *a.* (efforts) – *безмерный, огромный*.

[76] Entire *a.* = whole *a.* – *полный, целый*.

[77] Instrument *n.* На русский язык в технических текстах чаще всего переводится – *прибор.*

[78] Original *a.* – *исходный, первоначальный* (но не – *оригинальный).*

[79] Обратите внимание на чтение слова: fiber [faibə] *n.* – *волокно.*

[80] Character *n.* В технических текстах обычно — *символ, знак.*

[81] To desire – *желать, хотеть* (от французского «de'sirer»). Сравните более разговорные: to want, to wish – *хотеть, желать*.

[82] Appliance *n.* – *принадлежности, оборудование* = equipment – *оборудование.*

[83] To appear – *появляться, возникать*. (В конструкции «сложное подлежащее» – *представляться, казаться.)* Сравните: to emerge – *появляться, возникать.*

III раздел
ПОВСЕДНЕВНАЯ И ДЕЛОВАЯ КОММУНИКАЦИЯ

UNIT 1. INTRODUCING YOURSELF

Work with a group-mate to discuss the following.

1. What do you say when you meet someone new?
2. Do you to tell some more information besides your name?
3. Does what you say depend on the situation (introducing yourself in a job interview, introducing yourself in an email)?

Part I. Text

1. *Here are the words and word combinations you have to learn. Rewrite them and find their meaning using online translators* (*www.lingvolive.com, www.multitran.ru*).

Age, occupation, to introduce, to move, on business, for fun, position, applicant, experience, to put in some effort, to make new friends, to achieve, to be keen on, enjoy.

2. *Read and translate the text.*

Introducing yourself to people in an English class

Starting with the most important piece of information, we say “I’m Maria Smirnova” or “My name is Maria Smirnova”. If you want to say how old you are, you simply say “I’m twenty-three” or “I’m twenty-three years old”. Then you say, for example, “I’m Russian” or “I’m from Russia”. To give more detail about where you live, you can say “I’m from Sochi in Russia” or even “I’m from Sochi, in the south of Russia”.

If you live somewhere different now, you might like to add this information by saying, for example “I was born in Sochi, but I live in Saint-Petersburg now”. You can also give some explanation “I moved here to study”.

If you want to talk about your family it is possible to say, "I live with my parents and my younger brother". You can add, "I also have an older sister who lives in Moscow".

If you work, you can talk briefly about this, saying, for example, "I'm a web designer" or "I work as a web designer".

When we meet other people for the first time, it is sometimes nice to tell them a little about ourselves – our interests and what we like to do in our spare time. There are various ways to do this:

I like playing tennis in my spare time. I play a lot of tennis. I like reading. I'm keen on reading. I'm a big fan of Real Madrid.

If you are in an English class, you can explain why you are learning English. You say, for example, "I'm learning English because I need it for my job/my studies" or "I'm learning English because it's useful for travelling". It's possible that you simply want to say "I'm learning English because I enjoy learning languages".

We hope this has given you a few phrases to use when you are meeting new people.

3. *Look through the text and find the following information:*

name, age, country, city, occupation, family, hobbies.

4. *Find the phrases useful when introducing yourself in the text above and make up dialogues.*

Part II. Language

When you speak or write in English, it is useful to think about the level of formality. You can use ***formal, neutral/semi-formal or informal language***. We use formal language in situations that are serious or that involve people we don't know well. Informal language is more commonly used in situations that are more relaxed and involve people we know well. Most uses of English are neutral; that is, they are neither formal nor informal.

5. *Match the level of formality and the example, where it is used.*

1. Formal 2. Neutral 3. Informal	a) day-to-day interaction with colleagues and teachers
	b) textbooks
	c) popular magazines/books
	d) speaking or chatting online
	e) official reports
	f) interviews
	g) business letters
	h) postcards or letters to friends
	i) text messages

Let's study the typical grammar and vocabulary used in formal, semi-formal/ neutral and informal communication.

Formal English

- Longer/more complex sentences

Punctuation, proper grammar, and correct sentence structure are very important. A formal sentence:

Research has shown that learning a second language, in addition to expanding career and social opportunities can also expand the reasoning capability of the brain, although this finding is disputed by some scientists.

A less formal sentence:

Learning another language can improve your career and social life. Some people also say it can make you smarter, but others disagree.

- Larger and less common words

A formal sentence: *The economy is currently quite robust; nevertheless, some specialists predict an imminent recession.*

A less formal sentence: *The economy is very strong right now, but some specialists say we'll have a recession soon.*

Less formal words:	More formal words:
help (*n*.)	assistance
buy	purchase
need	require
whole	entire
enough	sufficient

- Avoid phrasal verbs

Not: The price *went up*. **But:** The price *rose/increased*.

- Avoid contractions

I'm/You're/can't; don't; wasn't; it's …

Not: The shipment *hasn't* arrived. **But:** The shipment *has not* arrived.

But: The company**'s** employees is a possessive, **Not** a contraction! It means "The employees of the company".

With possessives, you can use either "s" or "of the" – but try to avoid using "of the" multiple times in a single phrase: the terms of the client's contract, **Not:** the terms of the contract of the client.

- No idioms, slang, text speak

Idiom: The software is *a piece of cake*. The software is *quite user-friendly.* The software is *extremely easy to use.*

Slang: A million *bucks* in profit. A million *dollars* in profit. Text speak: Tks & we look 4ward 2 meeting u. Thanks, and we look forward to meeting you.

Also avoid shortened words: The *info* was incomplete. The *information* was incomplete.

Semi-Formal English

- Phrasal verbs & contractions = OK.

Could you *look over* this report? (*look over = review and check for errors).*

She *came up with* a great idea (*came up with = created, invented, thought of).*

I*'m* available on Friday morning. The directors *weren't* happy.

- Some idioms are ok, but avoid slang and text speak

This project is *on the back burner.* (*on the back burner = not a priority at the moment).*

We're operating *in the red*. (*in the red = no money, negative cash flow).*

Semi-formal (inviting your boss): "Would you like to join me for lunch?"

Informal (inviting your best friend): "Hey, wanna grab a bite to eat?"

Semi-formal: "Hello, how are you?"

Informal: "Wassup?"

- Use polite english

Say "I'd like…" instead of "I want…"

When making requests use "could you" and "please", don't just give commands: Say "Could you please call me later?" and not just "Call me later".

Another part of polite English is making criticisms and negative comments in an indirect way.

Not: You're wrong. **But:** I'm afraid you're mistaken.

Not: I disagree. **But:** I'm of a different opinion/I see it differently.

Not: This is terrible work. This could be improved.

Informal English

- Shorter, simpler sentences – perfect grammar is not as important. (So don't be so nervous about mistakes when speaking!)

"Have you finished your work yet?" = "Finished your work yet?"

"But I don't think so". Starting sentences with "but", ending sentences with prepositions, using sentence fragments – these are all done in informal spoken English.

- Expressions/exclamations

Um, uh, like, lemme see … = hesitation, when you need a moment to think before speaking.

I mean … = to clarify … you know? = to check if the other person understands Gotcha = I understand How come? = Why? Yeah right = a sarcastic way to say "I don't believe you".

- Phrasal verbs, slang, and idioms are used very frequently

Phrasal verb: "I won't *put up with* this!" (*put up with = tolerate).*

Idiom: "Could you *give me a hand?*" (*give me a hand = help me).*

Slang: "I *aced* the test!" (*aced = got an excellent grade).*

- Reductions when speaking (in both semi-formal and informal english)

He's *gonna* be angry. (*gonna = going to)*.
I *wanna* learn how to ski. (*wanna = want to)*.
Didja like the movie? (*didja = did you)*.

6. *Read the conversations and say which level of formality they are. Why do you think so?*

1.

R: Are you Edward Green?
G: Yes.
R: I am Jenny Ross. How do you do?
G: Hello. Pleased to meet you.
R: Welcome to Bibury systems.
G: Thank you.

2.

A: Hello.
B: Hi.
A: I am Brian, What's your name?
B: My name is Maria.
A: Nice to meet you, Maria. Where are you from?
B: Nice to meet you too. I'm from Russia, and you?
A: I'm from the United States.
B: A nice place to live.
A: Are you here on business or for fun?
B: Neither one, I'm here just to take this course.
A: We have fifteen minutes for the break. Do you want to go get some coffee?
B: Sure, that sounds great!

3.

Chris: I do not think we have been introduced. My name is Chris.
Kate: Nice to meet you Chris. My name is Kate. (Handshake.)
Chris: Hello Kate, pleased to meet you too. How is your first day going?
Kate: It is going very well. There is a lot to learn, but this job seems similar to my last job. The people here seem very friendly. Do you work in the IT department?
Chris: Yes, I do.

4.

A: Hi.
B: Oh, hey.
A: I'm Rachel.
B: I'm Zach.

A: Hi Zach, nice to meet you.
B: Nice to meet you.
A: So, we're here at the YouTube Space. So you must be a YouTuber.
B: Yep. Make videos for kids.
A: Yeah? What's your channel?
B: Pancake Manor.
A: Oh wow.
B: What's yours?
A: Mine's Rachel's English.
B: Oo.
A: So I teach English on my channel.

7. Fill the spaces with the suitable sentences given below.

Two Students (at University)

Nadia: Hello, my name is Nadia. Welcome to our university.
Alicia:_____(1).
Nadia:_____(2).
Alicia: Nice to meet you too.
Nadia: Where are you from Alicia?
Alicia: I am from Nicaragua, how about you?
Nadia: _____ (3).
Alicia: _____ (4).
Nadia: No, I have been living in London for about three years now.
Alicia: I see, have you been studying here for all that time?
Nadia: Yes, this is my third year here, I have got one more year to go.
Alicia: What are you studying?
Nadia: _____ (5) I want to be a linguist. How about you?
Alicia: Sounds cool _____ (6).
Nadia: _____ (7).
Alicia: I have always wanted to study abroad, so I came to London.
Nadia: Nice! Yeah I love it here, I am actually planning to live here even after I graduate.
Alicia: _____ (8). I will need to go back once I graduate anyway.
Nadia: I see, well, good luck to you. I have to go to class now. It was nice talking with you.
Alicia: Thank you! _____ (9).
Nadia: Good-bye.
a) Is this your first time in London?
b) Nice to meet you.

c) I want to be a network engineer.
d) I love London, but I am just here for school.
e) Hi, I am Alicia.
f) I'm from Russia.
g) You too, and have a good class.
h) That's great!
i) I'm studying English Literature.

8. *Fill in the spaces with suitable verbs and articles*.

a) Hello! I _____ Kim. I_____ as _____ receptionist in a construction company. I _____ my job very much. I _____ in New Jersey and I _____ 24 years old. My hobby _____ reading. I love to read novels.

b) Hello. My name _____ Alexander. I _____ 20 years old. I _____ Russian. I _____ born in Samara, but now I _____ in Berkeley, California. I _____ here to study. My parents and my younger sister _____ in Samara. As for my hobbies, I like _____ basketball. I _____ a big fan of Chicago Bulls.

c) Shelly: Hi! My name _____ Shelly. I _____ from Atlanta. What _____ your name?

Brian: I _____ Brian.
Shelly: And where _____ you from, Brian?
Brian: I _____ from Texas.
Shelly: Oh, really? Nice to meet you.
Brian: Nice _____ you, too.
Shelly: By the way, what _____ you do?
Brian: I _____ _____ engineer. And how about you?
Shelly: I _____ a dancer instructor.

d) **Giovanni:** Hello.
Vera: Hi.
Giovanni: Excuse me, _____ you from Italy?
Vera: No, I _____ from Russia.
Giovanni: Oh? What city _____ you from?
Vera: I _____ from Moscow.
Giovanni: Oh really? By the way, my name _____ Giovanni.
Vera: Hi, I _____ Vera.
Giovanni: _____ you on vacation here?
Vera: No. I _____ not. I _____ studying English.

9. *Make special questions to get the following answers. Use question words* **what, how, where**.

– Hi! I'm Oliver. 1) _____ ?

– I'm Barbara.
– 2) _____ ?
– Fine, thanks.
– 3) _____ ?
– I'm from Britain. 4) _____ ?
– And I'm from Australia. Nice to meet you, Barbara.
– Pleased to meet you.

10. *Remember we use formal language for business communication. Look at the dialogue below. Find the examples of typical grammar and vocabulary used in formal communication. Which forms and words are informal? Use the formal language instead.*

A Job Interview

T: Welcome to ABC Controls, David. I'm Tom.

D: Hi, it's nice to meet you.

T: Nice to meet you too, how is it going today?

D: I am well, and you?

T: Great, thanks. First of all, let me introduce myself. I'm the manager of our engineering department here and we've got an open position, so we're interviewing applicants to fill the position now.

D: Yes sir, I read about the position on your website, and I think I am a good fit*.

T: We have several ongoing projects and the team is working hard at present. We hope to keep busy for a long time.

D: What are the essential qualifications required for the position?

T: This is an entry-level engineering position**, we provide a lot of training here. But we require that you have at least a bachelor's degree in computer engineering. Previous experience in the field is a plus.

D: My final school project was actually developing a mobile app, so I'm fairly competent in developing mobile and web apps.

T: That's good to hear.

*to be a good fit = to be qualified and to meet the requirements for the job.

**an entry-level position = a job offered to an inexperienced person, that usually provides the prospect of future advancement.

11. *When you are in an English class you need to use the appropriate level of formality too. Tick the column in the table that the sentence suits best.*

	Talking to a teacher (formal or neutral)	Talking to a friend (informal)
1. May I go out please?		
2. Which book?		
3. Would you pronounce the word "…" again, please?		
4. I'm sorry, I am late. May I join the group?		
5. Can I borrow your pen?		
6. Can you give me a sheet of paper?		
7. May I open/close the window?		
8. What page?		
9. Would you give us an example?		
10. I'm sorry, I forgot to bring my homework		
11. What's the homework?		
12. Could you repeat the homework, please?		

Part III. Listening, Speaking and Writing

12. *Read the self-presentation given below. Use it as an example and make your own written/oral self-presentation.*

Hello everyone. I am Chris Johnson from Florida. I am 21 years old. My father is a businessman and mother is a home maker. I pursue Bachelors of Science in this immensely reputed college. I feel really happy to be here. I am an extrovert and a deep thinker. I like reading books and making new friends. I want to be a programmer in the future because I firmly believe that your job application should be something you are passionate about and I am really passionate about software technology. I will put in my best effort and become an expert in this field. I hope to achieve my dreams and grow as a person while studying in this college.

13. *Work with a group mate. Prepare and act out short conversations for the following situations. Use the necessary level of formality*.

1) Meeting a new roommate/neighbor.
2) Job interview.
3) Getting acquainted at a party.
4) Meeting new students in an English class.
5) Getting acquainted at a conference.

UNIT 2. HOMETOWN

Work with a group-mate to discuss the following.

1. What is your hometown?
2. What is it known for?
3. What do you like about your hometown?
4. What do you dislike about your hometown?

Part I. Text

1. *Here are the words and word combinations you have to learn. Rewrite them and find their meaning using online translators (www.lingvolive.com, www.multitran.ru).*

Overcrowding, residential area, outskirts, suburbs, neighborhood, traffic jam, rush hour, bus route, underground system/subway/metro, to commute, quiet/ peaceful/sleepy/relaxed, lively/bustling, industrial, historic, dull, church, cathedral, castle, fortress, palace, museum, to appear, to attract, to be known for.

2. *Look through the text and find the following information: town, geographical location, population, places of interest and means of transport.*

3. *Read the text and answer the questions*.

1) What does Connor like/dislike about his hometown?
2) Do many people visit the town? Why?

Hi! I'm Connor. You asked where I am from so my hometown is on the south-east coast of Northern Ireland. It's called Dundrum and it's about 1 hour south of the capital city. It's an area of outstanding natural beauty and for me, one of the most beautiful places of earth. It has everything; fantastic beaches, mountains, dense forests and picturesque countryside. But it can be a little bit boring because it's really tiny. The population is about 1500 people. There are only a few small shops and a couple of pubs! In the summer it's OK but it would be nice to have a few more indoor facilities for the winter.

In the oldest part there is an old Norman castle that sits on top of the highest hill of the town. It's a ruin now, but there are some breathtaking views from it because you can see for miles around. Thousands of tourists visit Dundrum every summer. They come from the capital city mostly to get away from the hustle and bustle and enjoy the peace and quiet. There are more and more international tourists visiting because lots of scenes from the TV show "Game of Thrones" were shot just outside the village.

The public transport system consists of just buses that pass through the town on an hourly basis. One bus goes north to the capital city which is really convenient if you need to do any shopping and the other bus goes south where you can switch buses and go across the border to the Republic of Ireland.

Part II. Language

4. *Study some useful vocabulary and the examples. Translate the sentences. These ideas should help you to speak about your hometown. Pay attention to the use of adverbs "fairly", "really" and "quite" to qualify the adjectives.*

Living	
cost of living – стоимость проживания	The cost of living is fairly reasonable
pace of life – темп жизни	There's a fairly slow pace of life where I come from
atmosphere	It's got a really relaxed atmosphere
pollution – загрязнение	The air quality is terrible because of the pollution
overcrowding – перенаселенность	Like most places it suffers from overcrowding
Areas	
residential area – жилой район outskirts – окраина	We live in a residential area on the outskirts of the city
industrial zone	Fortunately, the industrial zones are outside the city limits
suburbs – пригород	Most people choose to live in the suburbs as it's quieter there
neighborhood – район, окрестности	The neighborhood I live in is quite safe
Means of transport	
traffic jam – дорожная пробка rush hour – час пик	Like most places, we get traffic jams in the rush hour
bus route – маршрут автобуса	Fortunately, I live near a convenient bus route
underground sys-tem/subway/metro – метро	There are lots of means of transport – even a subway
to commute – регулярно ездить на работу в город	Some people choose to live in the country and commute to work
Adjectives	
quiet/peaceful/sleepy/relaxed – тихий, спокойный	It is a fairly quiet place
lively/bustling – оживленный, шумный, многолюдный	The center of the town is really lively at night
industrial	Of course, it's quite industrial like most modern cities
green	While some parts of it are industrial, it's still a green city
historic	It's a fascinating historic old town
dull – унылый, скучный	Some people can call it sleepy, I find it rather dull

5. *Make your own list of words using the examples below.*

Places of interest: a medieval church, …

Facilities: a stadium, …

6. *Match the words and their definitions*.

1. Residential area	a) an area of houses outside the center of a large town or city;
2. Suburbs	b) the average cost of the necessities of life;
3. Rush hour	c) an area having a lot of factories, plants, etc.
4. Cost of living	d) has only private houses, not offices or factories;
5. Industrial zone	e) the way between two places along which buses travel regularly;
6. bus route	f) one of the periods of the day when most people are travelling to or from work

7. *Fill the gaps with the words:* population, traffic jams, pollution, hometown, neighborhood, commute, overcrowding, outskirts.

1) I live in Moscow but my _____ is Murmansk that is where I was born.

2) The _____ is about three million inhabitants.

3) Car exhaust is the main reason for the city's _____.

4) If there is a problem of _____, there are more people living in a place than it was designed for.

5) A lot of houses are being built on the _____ of the city.

6) They live in a middle class _____.

7) The snow caused _____ all over the city.

8) It's not easy to _____ from Brighton to London every day.

When you speak about cities and towns you can use "there + be".

There is/was + singular or uncountable noun.

There are/were + plural noun.

8. *Use the correct form of "be"*.

1) There _____ various districts all with their own character.

2) There_____ no need to walk across the city as we have a fantastic public transport system so it's easy to get around.

3) Among the tourist attractions of Barcelona there _____ the Olympic area and the beaches along the coast.

4) There _____ some lovely parks and squares in the city center and on the outskirts.

5) There _____ lots of lively bars and restaurants within walking distance of my apartment.

6) There _____ many other sites that are worth visiting.

7) There _____ no high-speed internet connection, no well-furnished shopping malls, and overall the accommodation system is not modern in the countryside.

9. *Study the examples of using the definite article with the names of places.*

No article	The
Countries/cities *Ex.*: France, Paris	Republic/states/kingdom *Ex*.: the Republic of Ireland
Streets/squares/parks/etc. Ex.: Newton Street, Highfield Road	Plural names of countries/mountains/islands *Ex*.: the Philippines, the Urals
Airport/station/university/castle *Ex.*: Pulkovo airport, Edinburgh Castle	Oceans/seas/revers/canals *Ex*.: the Black Sea, the (River) Potomac
	Hotels/restaurants/pubs/cinemas/theatres/ museums/monuments/ memorials *Ex.*: the Hilton (Hotel), the National Theatre
	Names with … of ... *Ex*.: the Bank of England

But there are exceptions! The Sorbonne, the Cathedral Square, the Regent's Park and others.

10. *Use the definite article where it is necessary.*

London

London is the capital of 1) ____ United Kingdom of 2) ____ Great Britain and 3) ____ Northern Ireland. London is one of the most beautiful and fascinating cities in the world.

There are a lot of famous sights in London such as 4) ____ Tower of London, 5) _____ Westminster Abbey, 6) _____ Big Ben (renamed the Elizabeth Tower in honour of Queen Elizabeth II's Diamond Jubilee), 7) ____ Houses of Parliament, 8) ____ Trafalgar Square, 9) ____ St. Paul's Cathedral. 10) ____ Buckingham palace is the official residence of the Royal family.

There are many galleries and museums in London. 11) _____ National gallery contains the richest art collection of different schools and periods. It is famous for the works of Rembrandt and Rubens. 12) _____ Tate Gallery is a national gallery of modern art. It includes paintings of many countries. 13) ____ British museum consists of the national museum of archeology and ethnography. It is famous for its priceless collection of ancient art.

London has many parks and gardens. The most famous and beautiful ones are 14) ____ Regents Park (with the Zoo), 15) ____ St. James Park and 16) ____ Hyde Park.

Washington, DC.

Washington is the capital of 1) ____ United States of America. The city was founded in 1791. It is situated on 2) ____ Potomac river. The city is not very large. It is in 3) ____ District of Columbia. This city was named after the first president of 4) ____ United States.

The center of the city is the Capitol. It is the highest building in the city which contains the Senate and 5) ____ House of Representatives. The official residence of 6) ____ President of 7) ____ United States is the White House.

Washington is a large cultural and scientific center of the country. Washington attracts a lot of tourists from many countries due to (благодаря) its restaurants, fashionable hotels and different places of interest such as 8) ____ National Academy of Sciences, 9) ____ National Museum, 10) ____ National Gallery of Art, 11) ____ White House, 12) ____ Monument to George Washington, 13) ____ Lincoln memorial, 14) ____ Jefferson memorial.

Part III. Listening, Speaking and Writing

11. *Fill the spaces with the suitable words and phrases.*

Asking the way

a) can you tell me the way to;
b) goes directly to;
c) straight ahead for two blocks;
d) could you tell me where;
e) a subway station;
f) I'm lost;
g) you can take Bus 3;
h) rush-hour;
j) does this bus go to;
k) the second turn on.

A: Excuse me, 1) ____ Buckingham Palace? Am I going in the right direction?
B: Certainly, sir. Go 2) ____ and then turn right. You can't miss it.
A: Is it far?
B: I think it's rather close. You'd better go there on foot.
A: Thank you. You've been very helpful.
B: That's all right.

A: Can I help you sir?
B: Yes. 3) ____ the British Museum is? How do I get there?
A: Well, the quickest way is to get the tube, Northern Line, to Tottenham Court Road station. It's just round the corner. Or 4) ____.
B: Do I change the bus?
A: Yes. You change to bus 11. It 5) ____ the British Museum.
B: Thank you very much. Good-by.
A: No thanks at all, sir.

A: Excuse me, madam. I think 6) ____. Could you tell me how to get to California Bank?
B: Of course. Go down this street, Sunset Road. Take 7) ____ your left and the Bank will be in front of you.
A: Thank you for your help.
B: You are welcome.

A: Excuse me. 8) ____ the Library of Congress?
B: No, this bus won't take you there. You'll have to change at Dupont Circle. The buses are packed, It's 9) ____. By the way, you can get there by subway.
A: Is there 10) ____ near here?
B: Well, let me see. Go straight ahead past the post office until you come to the nearest underground station.
A: Ok. Thanks a lot.
B: It's nothing.

12. *Write or speak on one of the following topics. Use the questions for help.*

Your hometown

Where is your hometown?
Do you still live in your hometown?
What's your hometown like? What do you like about your hometown?
What do you dislike about your hometown?
Does anyone famous come from your hometown?
What are the main attractions in your hometown?
Are there any local traditions in your hometown?
Is your hometown famous for anything?
What are some things in your hometown that are part of history?
What is the best season in your hometown?
What's there to do in your hometown?

A city you visited and which impressed you

Where is it situated and why did you visit it?
When did you visit it? What did you do there?
What is the city like? What is the attractive part of this city?
Are there any historic sights? What is the city known for?
What did you like about the city?
What did you dislike about the city?

Living in large cities

Do you like living in a city? Why?
What are some of the advantages of living in a city?

What are some of the disadvantages of living in a city?
What aspects of life in the city would you complain about?
What do you think should be done to improve living condition in cities?
What are some differences between living in a city and living in a small town?
What do you like about small towns?

13. *Some foreign students are coming to visit your university. Discuss with a partner what you can show them in Saint-Petersburg. Make a dialogue. You can use the following:*

Why don't we visit ...? I'm sure it's a good idea to see ... I think we should take them to … Let's walk in the … How about going to …? That sounds great! That would be worth trying. I can see one or two problems with this idea. No, I don't think so. I'm not sure about that. I'd prefer to ... (+ verb).

UNIT 3. HIGHER EDUCATION IN RUSSIA AND UK

Work with a group-mate and discuss the following.

1. Is higher education necessary to have a successful career?
2. How long would you like to study after finishing school?
3. There are people who do not get a higher education. Why?

Part I. Text

1. *Here are the words and word combinations you have to learn. Rewrite them and find their meaning using online translators (www.lingvolive.com, www.multitran.ru).*

Higher education, a bachelor's/undergraduate degree, a master's/ postgraduate degree, a research, a researcher, a term, a vacation, an accommodation, to revise for examinations, to award an academic degree, to participate, an assessment, to assess, to take exams, to pass exams, to submit, a discipline, scientific, a department, a faculty, a curriculum, to elaborate, hands-on experience, a thesis, a defense, academic staff, a dean.

2. *Read the text.*

A university is an institution of higher education and research, which awards academic degrees in various academic disciplines. Universities typically provide undergraduate education and postgraduate education.

Although each institution is organized differently, nearly all universities have a board of trustees; a president, chancellor, or rector; at least one vice president, vice-chancellor, or vice-rector; and deans of various divisions. Universities are generally divided into a number of academic departments, schools or faculties.

Academic personnel, also known as faculty (in North American usage) or academic staff (in British, Australian, and New Zealand usage), are the staff of a university: professors of various ranks, lecturers, and/or researchers.

3. *Answer the questions.*

1) What is a university?
2) What education does a university provide?
3) What can be the head of a university called?
4) What does a university consist of?
5) Who is called academic personnel?

4. *Match the words and their definitions.*

1) a rector	a) an official of high rank in a college or university who is responsible for the organization of a department or departments
2) a faculty	b) the person in charge of a university
3) an academic degree	c) a qualification awarded to students upon successful completion of a course of study in higher education
4) a dean	d) a group of departments in a university that specialize in a particular subject or group of subjects
5) an academic discipline	e) someone who studies a subject, especially in order to discover new information or reach a new understanding
6) a researcher	f)a particular area of study, especially a subject studied at a college or university

5. *Look through the text. Find the following information: degrees, terms, holidays, exams.*

Higher education in the UK

The UK has a vast variety of higher education opportunities to offer students from the UK and around the world. In the UK about one-third of all students go on to some form of higher education.

Students may choose to study a bachelor's (or "undergraduate") degree. Bachelor's degrees in England usually last 3–4 years. They focus on writing and analytical thinking, helping students to develop academic and work-related skills. University graduates can then study a master's (or "postgraduate") degree.

A master's degree in England usually lasts 1 year. It requires extensive research, in-depth analysis and a demonstration of critical thinking.

School term and holiday dates vary across the UK. But most universities now operate Autumn, Spring and Summer terms of ten-week lengths, although some may use different names, and terms may be of uneven length, with the autumn term usually the longest.

The three holidays between the three terms are known as vacations: the Christmas vacation, the Easter vacation and the long summer vacation. Students are usually required to leave college accommodation during these vacations, so many students return home or travel. It is expected that students will use some of this time to consolidate learning from the last term, to work in preparation for the next term, or to revise for examinations.

Degree awarding institutions are responsible for the design of their own programs and awards. The number of different courses offered is very high. Typically, there are modules covering the core knowledge of the subject, and options in the more specialized aspects. Most courses involve both formal lectures and less formal seminars, in which students are encouraged to participate and lead discussions. Certain courses require practical sessions such as work in a laboratory for science subjects and oral classes for foreign languages.

Each institution has its own regulations for the assessment of students. Most Oxford courses are assessed by examinations at the end of the first and last years. First year examinations are often called Prelims or Moderations, and you need to pass these exams to progress to the second year. You must pass your final year exams, or "finals", to pass your degree. For some courses you may also be assessed on your practical work, or you may be required to submit a dissertation.

6. *Read the text above and answer the questions.*

1) How long do students study for a bachelor's (or "undergraduate") degree?
2) How long do students study for a master's (or "postgraduate") degree?
3) How many terms is an academic year divided into?
4) What are students expected to do during their vacations?
5) What do most courses include?
6) How are most Oxford courses assessed?

7. *Fill the gaps with suitable words. You may find the information in the text above.*

In the UK school-leavers may choose to study 1) a _____ degree. It usually lasts 2) _____ years. University 3) _____ can then study 4) a _____ (or 'postgraduate') degree. It usually takes 5) _____ to get it. School term and holiday dates 6) _____ across the UK. But most universities now have 7) _____ terms of about ten-week lengths. Between the terms students have 8) _____. Universities offer a great variety of 9) _____. Most courses involve both 10) _____ and _____. Rules for the 11) _____ of students differ in each university. In Oxford students need to pass first and last year 12) _____.

8. *Read the text.*

The system of higher education in Russia

There are three main types of higher education institutions in Russia: universities, academies and institutes. All of them realize programs of undergraduate and graduate professional education.

A university covers a wide range of study fields, e. g. a technical university or classical university.

An academy differs from universities by a narrower set of specialties connected with a particular industry, e. g. Academy of Agriculture, Academy of Economics or Academy of Railway Transport.

The status of an Institute requires teaching of at least one discipline. Universities also conduct fundamental and applied research in a wide spectrum of sciences, while the academies and institutes run their scientific activities in one field of Science or Art. Institutes mainly offer the professional training. Institutes can also be established as a department of a university or an academy with the aim to conduct autonomic educational or scientific activities.

The curricula are elaborated in accordance with the State Educational Standards which regulate almost 80 % of their content. The other 20 % are elaborated by the university itself. The programs include professional and special courses in Science, Humanities and Social-economic disciplines, professional training, completion of a research paper/ project and State final exams.

9. *Study the table.*

Course type	Bachelor's degree	Specialist degree	Master's degree	Post graduate
Entry requirements	General secondary education or equivalent	General secondary education or equivalent	Bachelor's Degree Specialist Degree	Master's or Specialist Degree
Duration of study	4 years	at least 5 years	2 years	3–4 years
Type of study	General basic training in a particular field without specialization	Focused on practical work in the chosen field	In-depth learning of theoretical aspects with a focus on research	Part study, teaching, hands-on experience, research
Final state assessment	State examinations, preparation and defense of Bachelor's thesis	State examinations and Specialist thesis defense	State examinations and Master's thesis defense	Three qualifying examinations for a candidate's Degree, state examination, dissertation defense

10. *True, false or no information? Find the sentences in the text and the table above that support your point of view.*

1) A university covers a wider range of study fields than an academy.

2) An academy can be a part of a university.

3) The State Educational Standards regulate the content of curricula.

4) The students have little choice in planning their academic progress.

5) You cannot take a postgraduate course if you do not have a Master's degree.

6) Specialist degree courses are focused on practical work in the chosen field.

7) Final assessment for Bachelor's, Specialist and Master's degrees includes state examinations.

8) Universities offer flexible methods of learning – with full-time and part-time options.

11. *Read the text about SPbSUT and answer the questions*:

1) What served as the basis for the university?

2) When did the university get its status and the new name?

3) What forms of studying does the university provide?

4) Where does the university have its branches?

5) What is a university chair?

6) What facilities does the university provide to the students and staff?

The Bonch-Bruevich Saint-Petersburg State University of Telecommunications

The Bonch-Bruevich Saint Petersburg State University of Telecommunications (abbreviation: SPbSUT) is one of the major research and educational centers of Russia as well as a leading technical university located in Saint-Petersburg. The University developed on the basis of the Leningrad Electro-Technical Institute of Communications, founded in 1930. In 1993 it became a university. It is named after Professor Mikhail Aleksandrovich Bonch-Bruevich.

The university is of complex structure. There are a lot of students in the university studying full time, part time and at the extramural department. The university includes Saint-Petersburg College of Telecommunications and Archangelsk and Smolensk branches. The faculties of the university have chairs, and every chair is an organized scientific and pedagogical group that unites teachers, scientific staff, and administrative personnel, who participate in training, methodological, and scientific work. The university is proud of its academic staff. 75 doctors of sciences are teaching in the university.

The size of the university, as a communication scientific and educational complex, is very impressive: there are six study and laboratory buildings, with

an assembly hall, conference halls, dozens of study and scientific laboratories, computer classes, and specialized classrooms.

Today, the university is the region's biggest training and scientific center that ensures the formation of human resources reserve for the leading telecommunication enterprises.

Part II. Language

12. *Work with a partner. Ask and answer different types of questions about higher education in Russia.*

Types of questions

- General or Yes/No question

Are you a student? Yes, I am/No, I am not.

Do you study Computer Science? Yes, I do/No, I don't.

- Alternative or Choice questions

Is he from England *or* from Wales?

Where would you go, to the cinema *or* the theatre?

- Special questions with words: where, when, who, what, which, how, why

How can I help you? Where are you from?

Mind in Subject questions the word order is direct!

How many students attended the lecture?

- Tag questions

John is a good student, isn't he?

You don't like philosophy, do you?

Part III. Listening, Speaking and Writing

13. *Find the information about higher education in the USA. Compare the systems in the UK and the USA. You can use*:

https://www.forumdaily.com/en/sistema-obrazovaniya-v-ssha-osnovnye-principy/.

https://www.internationalstudent.com/study-abroad/guide/uk-usa-education-system/.

14. *Write or speak on one of the following topics*.

1) Higher education is the first step for a successful career.

2) Higher education institutions in Russia/UK/USA.

3) The Bonch-Bruevich Saint Petersburg State University of Telecommunications.

UNIT 4. STUDENTS' LIFE

Work with a group-mate to discuss the following.

1. Do you think over such aspects of students' life as work pressure/money/ food/social students' life/organization of studies?
2. What do you know about students' workload?
3. Is it easy for you to arrange your timetable?

Part I. Text

1. *Here are the words and word combinations you have to learn. Rewrite them and find their meaning using online translators (www.lingvolive.com, www.multitran.ru).*

A hall of residence/residence hall/dormitory, to meet a deadline, fee, a student loan, a rent, to have fun, a tutor, a tutorial, compulsory, optional, to sign up for, workload, to be enrolled, to adjust, an assignment, an exchange program, an opportunity, skills, apply to, to consider.

2. *Look through the text. Match the titles and the parts of the text.*

1) Managing your time.
2) Oh yes, and you have to study too.
3) Fun, fun, fun.
4) Money and Stuff.
5) Living Space.

What Is University Life Like?

A _____

One of the best parts of university life is living away from home and parents. You get freedom and the chance to meet new people. Most students opt to live in halls of residence for their first year of study – this usually works out cheaper than finding a flat or house and means there'll definitely be loads of people in the same boat as you, so you won't feel lonely. The university also guarantees accommodation in university halls for all new single undergraduate students that apply before the deadline.

B _____

An important aspect of being at university is managing your own time. It's up to you to decide when you'll study, when you'll go shopping and when you'll have a night out. Sounds fantastic, doesn't it? Of course, it is a good idea to organize your time with a weekly or monthly schedule. Remember, you can be as flexible with your time as you like but you'll always need to make sure you get out of bed for lectures, meet project deadlines, and schedule in plenty of revision days before exams.

C _____

So you're living away from home, planning your own routine and even cooking your own meals – and that means looking after your own money. At university, it's all about the cash. Fees, student loans, rent, bills – you name it, you might have to pay for it. But don't let money worries put you off.

D _____

After a hard day's study, going out and having fun is what student life is all about. The city is a lively place buzzing with events, cinemas, clubs and bars, so you will never be short of things to do.

E _____

That's right, university life is about learning. You'll be expected to go to all your lectures and classes. Most courses are assessed through exams, essays, practical work and projects. You'll have anything from one to five hours of lectures, etc. in a day. But on top of that, you are expected to do a number of hours of self-study. Every student has a personal tutor to help with any problems you might have or you can speak to your lecturers and other tutors if you have questions. If you plan your time and your workload, you'll have plenty of free time to enjoy student life at the university.

to opt – выбирать;

to meet a deadline – уложиться в установленный срок;

a student loan – кредит на обучение;

to put off – отталкивать, мешать;

to buzz – гудеть/веселиться;

tutor – руководитель группы студентов;

tutorial – консультация, встреча с преподавателем.

3. *Read the text above. Say, if the following statements are true or false. Find sentences in the text that support your point of view.*

1) Living in halls of residence usually costs less money than renting a flat or house.

2) The university provides accommodation in university halls for all undergraduate students that apply before the deadline.

3) It is necessary to plan your activities with a weekly or monthly schedule.

4) Along with independency students face the responsibility to take care of their own expenses.

5) Students aren't supposed to go to all their lectures and classes.

6) It's impossible to have plenty of free time to enjoy student life at the university.

4. *Match the parts of the sentences.*

1. I can't afford to live in the halls of residence	a) probably because I always left it until the last minute
2. We have two tutorials a week	b) so many students have jobs
3. In my first year work seemed like a burden	c) but, on the whole, most of them settle down and make friends
4. The first weeks are parties, having fun and meeting people	d) so I commute from the other side of London every day
5. There's no way that the grant can possibly cover your expense	e) but you do need to be responsible about your studies as well as having fun
6. It's always a bit stressful for first-year students to come to a strange university	f) that suits your interests and abilities
7. You can't sit back and not do the work for a week even	g) but if you want to see your tutor for extra help you can arrange a tutorial any time
8. At a university you can choose a course	h) if you don't feel up to it

What sentences from the table above correspond to the following topics?
1) Work pressure.
2) Money.
3) Social life.
4) Organization of studies.

5. *Look through the text. Find the following information: modules, qualification, timetable, academic studies.*

Students' workload

If you are enrolled at a university you register on a course consisting of compulsory modules and optional modules that leads to the award of a qualification. Or you register on a course that gives credit that can be counted as a part of a qualification. The early years of your course will have more compulsory and core modules. As you progress, you will be able to choose from a wide variety of options. Your personal tutor will advise you on the best module options to suit your particular academic interests.

After registering on your program, you will be able to access a personalized academic timetable. If you've never been to university before, you may be surprised at how much control you have over your timetable. A lot of courses provide the same class several times throughout the week, allowing you to sign up for the one that fits best with your other classes and personal commitments.

During term time, you're expected to spend an average of 42–46 hours a week on your academic studies (including teaching/contact time and independent study), and you also need to undertake some work during the vacations (e. g. further reading/research, revision, assignments).

Every student adjusts to this new workload in their own way and time, and there are plenty of people who can offer advice and support.

6. *Match the words to make the phrases used in the text above. Use the phrases in your sentences.*

1. Be enrolled	a) a course
2. Register on/to sign up for	b) a qualification
3. Compulsory/optional	c) at a university
4. The award of	d) the same class
5. Undertake	e) advice and support
6. Adjust to	f) some work
7. Offer	g) new workload
8. Provide	h) modules

7. *Match the words and their definitions.*

1. A course	a) a formal talk on a serious subject given to a group of people, especially students
2. A lecture	b) a meeting of students with a teacher for training, discussion, or study on a particular subject
3. A seminar/workshop	c) a regular meeting between a tutor and one or several students
4. A lab	d) a period of time in which students are taught something
5. A tutorial/tute	e) a set of classes on a particular subject, usually leading to an exam or qualification
6. A class	f) an academic period for laboratory work

Part II. Language

Prepositions of time

Preposition	Usage	Example
at	specific time	**at** 9 o'clock **at** 10 am **at** lunchtime
	holiday periods	**at** Christmas **at** Easter
	in phrases	**at** the weekend (AE on) **at** night **at** midnight
in	months, years, decades, centuries	**in** May, **in** 1990, **in** the sixties, **in** the 19th century
	seasons	**in** winter
	parts of the day	**in** the morning
on	days of the week	**on** Monday, **on** Tuesday morning
	dates	**on** the 12th of July
	holidays with the words "day, eve"	**on** Christmas Day **on** New Year's Eve
no preposition	with the words next, last, every, this	next week/month; last night/year; this morning, every day

8. *Use the suitable prepositions of time where it is necessary. Work in pairs, ask and answer the questions.*

1) Do you sometimes prepare for classes ____ the mornings?
2) Are you usually at home ____ 7 o'clock ____ the evenings?
3) Do you sometimes work ___ night?
4) What do you usually do ____ weekends?
5) Do you usually go shopping ____ every Saturday?
6) Do you go skiing ____ winter?
7) Do you have a holiday ____ December?
8) Is there a holiday in your country ____ 6th of January?
9) What did you do ____ last month?
10) What will you do _____ Sunday evening?

9. *Read the information in Tom's Computer Science timetable and answer the questions.*

1) What lectures does Tom have twice a week? (Note the preposition a lecture ***on***!)

2) Which day of the week is the busiest? How many classes does Tom have on this day?

3) How many lectures does Tom attend each week? What about labs and tutes?

4) What time does the earliest/latest class start?

5) What activities has Tom planned besides the classes? Which of them involve studying?

The following example shows how a first-year student arranged his timetable.

Tom's Computer Science timetable

	MON	TUES	WEDS	THURS	FRI
8AM					
9AM		Software Engineering tute		Work on assignments	Statistics tute
10AM	Science Communications workshop	Software Engineering lecture			
11AM		Algebra tute	Software Engineering lecture		
12PM				Statistics lecture	Meet friends at the tav
1PM	Statistical Data Analysis lab	Statistical Data Analysis lab		Statistical Data Analysis lecture	
2PM	Object Oriented Programming lecture	Study at the library	Object Oriented Programming prac		
3PM					
4PM		Algebra lecture			
5PM					
6PM		Soccer training		Soccer training	
7PM	Readings for stats analysis				
8PM			Movies		
9PM					
10PM					
11PM					

*prac = practical (*n.*) a class or exam in a scientific or technical subject in which students do things rather than just write or talk about them.

Part III. Listening, Speaking and Writing

10. *Work in pairs. Discuss your timetable. You can use the questions for help.*

1) How many lectures/seminars/practicals/labs do you have this week?

2) Which day of this week is the busiest? Why?

3) When do you have more free time? Why?

4) Do you usually plan your independent studying activities?

5) What subjects take the most time to prepare for?

6) What other activities do you have during the week?

7) Do you find it difficult to adjust to the university workload? If so, how can you help it?

11. *Work in pairs. Speak about your first impression of studying at university. You can use the questions for help.*

What can you say about your accommodation, managing your time, work pressure? Have you made friends with other students? Do you worry about money issues? Do you enjoy student life?

Part IV. Business English: Motivation letter

12. *Have you heard of international exchange programs for students? Are you interested in participating in such a program? Read the text and give your pros and cons.*

International exchange programs

International exchange programs provide students with an opportunity to study in a different country and to experience the history and culture of another country. A year abroad teaches you about building friendships, taking responsibility for yourself, respecting differences and tolerating the beliefs of others. Exchange students develop leadership skills, self-confidence and a greater understanding of the complexities of the world around them. This is why the best corporations and professionals look favorably on students who have spent a school year abroad.

If you want to apply to an exchange program you need to be able to fill in an application form and to write a motivation letter.

An application form usually requires personal data, study data and some documents. *(See Appendix 1 for a sample application form.)*

A motivation letter contains information about who you are, what your interests are, and how you could benefit the institution you are applying to.

13. *Look through the example of a motivation letter. Find the following information: name, faculty, university, achievements, skills, goals.*

Motivation letter for student exchange

Giancarlo Moretto
Milano Street, 55
Roma, Italy
Tel. +39-349-98-99-581
E-mail: mail@alice.it

To whom it may concern,
I am Giancarlo Moretto, student of Information Engineering Faculty at the University of Rome. With this letter I would like to express my strong interest for participation in your Student Exchange Program in the summer of 2020. As a future graduate, I plan to build an international career in the field of information engineering in the EU, so this program will

really mean a lot for my professional aspirations. Capability to handle problems, social balance and the necessity to gain an international experience outside my University make me a proper candidate for this position.
During my studies, I have been a student representative. I was chosen at the Faculty's elections for three years in a row. My responsibilities, as a representative included: organizing term exams, social gathering and sport events and representation of my Faculty at the students Senate. Those assignments enabled me to develop strong organization skills and to become a responsible young individual. Also, as a student of University of Rome I discovered the usefulness of team work. Only with quality team work great achievement can be reached.
I have done an internship for about two months at a local telecom service provider in Rome. During that placement, I have mastered skills like: providing cost-effective solutions for optimizing network stability and security, improving performance of systems and equipment and resolving issues such as network crashes, system slowdowns and virus outbreaks. With my experience and English proficiency I was able to adjust to the work in a very short time.
Thank you very much in advance for this opportunity and for considering my application. Considering my experience and skills I believe that your program will benefit a lot from my presence and it will enhance my future career in the field of Information Engineering. I am convinced that I will find a place in all the activities anticipated by your University and I will do my best to adjust to your facilities and courses. I am looking forward to hearing from you soon.
Sincerely,
Giancarlo Moretto

14. *Read the motivation letter again, get ready to discuss the structure of the letter and the formal language used in it.*

15. *These adjectives can help you to describe yourself in a motivation letter. Match the words and the definitions.*

1. Confident	a) truthful, not cheating or lying
2. Diligent	b) having belief in yourself and your abilities
3. Easy-going	c) trustworthy, about a person who will not let you down
4. Honest	d) working hard and paying attention to what you are doing
5. Reliable	e) doing things on time
6. Motivated	f) someone who works well with other people
7. A team player	g) easy to get along with
8. Punctual	h) enthusiastic about work

16. *Use the adjectives from the table above to fill the gaps.*

1) I'm very _____. You can depend on me to get the job done.

2) I'm a _____. I'm happy to collaborate with other people on projects.

3) I'm very _____. I always arrive on time.

4) I pride myself in being _____, because I believe it is important to be truthful.

5) I'm pretty _____. I find it easy to get along with people.

6) I'm a very _____ person. I'm good at applying myself to tasks.

7) I'm very _____. I love doing what I do.

8) I'm _____ that I would make a valuable addition to your team.

17. *Write a motivation letter for a student exchange program. Use the sample above.*

In the letter you have to:

1) introduce yourself describing your strengths, interests, experience.

2) explain why you want to participate in an exchange program of this particular University.

3) what skills are relevant for you/what kind of knowledge you want to get and what skills to develop.

4) describe your career preferences.

18. *Write or speak on one of the following topics.*

1) Your first impression of studying at university.

2) Student's workload and the ways to adjust to it.

3) International exchange programs for students.

UNIT 5. TECH EDUCATION

1. *Work with a group-mate to discuss the following.*

1) How many universities and institutes of higher education are there in Russia?

2) Do you know about the history of higher education?

3) Do you know about the history of technical education?

4) Why do you think the number of technical students has risen in the recent years?

5) What is the role of education for our country?

6) What is lifelong learning?

2. *Look at the following international words, guess their meaning and check the pronunciation.*

System, foundation, university, population, prestigious, contribution, academic, program, equivalent, regulate, standard, professional, humanities, social-economic, discipline, project, final, practice, period, arithmetic, geometry, trigonometry, mechanics, architects, technician, biomedical technology, technique, fundamental, automation.

Part I. Text

1. *Here are the words and word combinations you have to learn. Rewrite them and find their meaning using online translators (www.lingvolive.com, www.multitran.ru).*

Applicant, extra-mural course, to be awarded, finals, to carry out, compulsory, core curriculum, to defend a thesis, humanities, to pass exams, research paper, scholarship, to elaborate, to state, in the framework of, to take competitive exams, at least, to be enrolled, significance, applied sciences.

2. *Read and translate the text.*

Higher and Technical Education in Russia

Russia has centuries-old traditions of higher education. The first university in Russia was founded in 1687 and called the Slavonic, Greek, and Latin Academy. The system was constructed similar to that of Germany. The renowned Moscow State University was established by Mikhail Lomonosov in 1755. Since then, many universities have appeared throughout Russia – from Vladivostok to Kaliningrad. Russia has given the world a multitude of outstanding intellectuals who have made great discoveries and inventions, and over 40 of them have been awarded the Nobel Prize. Currently, there are 896 universities in 85 regions of Russia that accept international students.

The history of Russian Higher Education is presented below.

1687

Founding of **Slavonic-Greek-Latin Academy** in Moscow, in Zaikonnospassky Monastery, where mathematics, and later physics, were taught

1724

Founding of **Petersburg Academy of Sciences**, the forerunner of the current Russian Academy of Sciences

1755

Founding of **Moscow State University** (since 1940, M. Lomonosov MSU)

1899

56 universities operating in Russia

1904

Distinguished Russian scientist **Ivan Pavlov**, a graduate of the Petersburg University (now SPbSU), **is the first Russian to be awarded the Nobel prize** for research on the physiology of digestion

1913

4 500 people teach in higher education in Russia, **127 400** people study at universities across the country

1917

150 universities in Russia

1918

Russia is the first country in the world to make **higher education free**. This right is extended to all regardless of citizenship, sex, or possession of a school leaver's certificate

1928

The first polytechnic institutes are founded

1930

In the 1930s, over 40 teaching, medical, economic and other institutes are founded. Academic departments were assigned to research institutes. The first evening and correspondence departments and institutes are opened

1944–1945

A fund of thesis papers is created.

In the last years of the Second World War, **60 new universities** are opened

1950

Consolidation of universities takes place as part of efforts to improve the quality of education. Universities and departments for education specialists in the field of radioelectronics and electronic and computer engineering, automatics, biological physics, and biochemistry are opened

1981

494 state universities operate in the USSR

1990

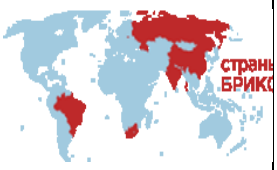
180 000 international students at educational institutions in Russia

2003

Russia signs **the Bologna Declaration** becoming a part of the single European higher education system

2007

Specialty, Bachelor's and Master's Programs are introduced in Russia

	**2010** Graduates of MIPT **Andrei Geim and Konstantin Novoselov** are awarded **the Nobel Prize** in Physics for the discovery of graphene. Russia has given the world a total of **42 Nobel Prize winners**
	**2013** **Law** expanding citizens' rights to education comes into force and establishes requirements for educational programs and standards, guaranteeing compliance with global education standards
	**2014** **More than 50 Russian universities** are ranked among **the best universities in the BRICS countries** by the British company Quacquarelli Symonds (QS). Twenty of them are in the top one hundred
	**2015–2017** **Seven Russian universities** make **the top 100 list of the best universities in the BRICS countries** and 64 Russian universities are ranked in the QS University Rankings for Emerging Europe and Central Asia. MSU, SPbSU, MIPT are ranked in the top 100 of The World University Rankings
 **MSU** **SPbSU**	**2020** **265th anniversary** since the foundation of the first university in the Russian Empire. 265 years ago Empress Elizabeth Petrovna signed the Decree on the establishment of a university in the Empire. Currently, there are about **4,2 ml** students; **741** universities including: **496** state universities, **245** private universities; **29** national research universities; **10** federal universities; **2** with special status: MSU, SPbSU

Technical/Engineering education in Russia started with the foundation of the School of Mathematical and Navigational Sciences in Moscow in accordance with Tsar Peter the Great's Decree dated 27 January 1701. The School taught mathematics, geodesy, sea sailing, cartography, astronomy and a number of other engineering and technical subjects. It has educated not only naval specialists but also civil engineers, mechanics, architects, as well as specialists of many other professions. It should be regarded as the first higher technical education institution in Russia, and the date of its foundation is the starting point of technical education in Russia.

Soon after the Navigational School, the Artillery-Engineering School was organized in 1701. In 1703 the Moscow Engineering School was founded, and 10 years later there appeared the St Petersburg Engineering School in 1713. Then the Mining College was founded in St. Petersburg in 1733, with a status equal to academies.

Nowadays there are many technical universities in the Russian Federation. They train engineers in different fields of engineering and technology. The

curriculums are elaborated in accordance with the State Educational Standards which regulate almost 80 % of their content. The other 20 % are elaborated by the university itself. The programs include professional and special courses in Science, Humanities and Social-economic disciplines, professional training, completion of a research paper/project and state final exams.

One of the oldest and most famous universities is Bauman Moscow State Technical University offering the M.S. and Ph.D. degrees in various engineering fields and applied sciences. The university was established in 1830 as Imperial Vocational School by the Decree of Emperor Nicholas I. It was renamed several times. The current name Moscow Highest Technical School (MHTS) was given in 1989. Nowadays BMSTU has 19 departments providing full-time undergraduate, postgraduate and doctoral programs. It has over 19,000 students enrolled in various fields of science and engineering. The Faculties of the University are: Electronics and Laser Technology, Fundamental Sciences, Engineering Technology, Mechanical Engineering, Power Engineering, Robotics and Complex Automation, Computer Science and Control Systems, Biomedical Technologies, Engineering Business and Management, Military Institute, Social Sciences and Humanities, Linguistics, Radio Engineering, Rocket and Space Technology, Opto-Electronic Instrument, Instrument-Making, Aerospace.

3. *True, false or no information: Find the sentences in the text that support your point of view.*

1) Technical education in Russia started with organization of University for Mathematical and Navigational Crafts in Moscow.

2) Russian universities have the following complete system of education: 4 years for a Bachelor's degree and 2 years for a Master's degree.

3) Russia is the first country in the world to make higher education free.

4) Civil engineers, mechanics, architects were educated at the School for Mathematical and Navigational Sciences.

5) The Bachelor's degree students are admitted to enter a PhD degree programs.

6) Moscow State University nowadays offers education in 27 faculties and research training in a number of institutes.

7) Bauman Moscow State Technical University is a private university located in Moscow.

8) Many Russian technical universities also offer distance education and provide courses for specific professional needs.

9) MSU, SPbSU, MIPT are ranked in the top 100 of The World University Rankings.

10) To become a part of the single European higher education system Russia signs the Bologna Declaration in 2003.

11) Academy differs from universities by a broader set of specialties connected with a particular industry.

4. *Make a plan of the text. Prepare a short summary of the text using the expressions (see Appendix 2 for annotation details).*

Part II. Language

5. *State the part of speech of the following words and determine their meaning without using a dictionary.*

1. Apply, appliance, applicable, applicator, application.
2. Act, action, active, activity, actor, activist.
3. Differ, difference, different.
4. Connect, connector, connection, connective, connectivity.
5. Relate, relation, relationship, relative, relatively, relativity, relativism, relativist.
6. Practical, practically, practice, practitioner.

6. *Fill in the gaps with the correct word form to complete the sentences.*

1. Every year students _____ a specialty that includes several main disciplines: the humanities, social and physical sciences, engineering.

a) acquired; b) acquires; c) are acquiring; d) acquire.

2. Students _____ to work out new decisions in the area of engineering.

a) are trained; b) is trained; c) was trained; d) train.

3. Using modern information technologies the students _____ many different problems.

a) solve; b) solves; c) had solved; d) is solving.

7. *Find in the text the words or phrases which mean the same as:*

система высшего образования, среднее образование, защитить диплом (дипломную работу), гуманитарные дисциплины, обязательный, государственные экзамены, степень, точные (естественные) науки, выпускные экзамены, завершение, окончание, специальные курсы, академические предметы, считаться престижным, практика.

8. *Join the following pairs of sentences to make one sentence containing a non-defining relative clause. Use "whose, which, who and where". Use commas appropriately: e. g.* John studied politics at Harvard. He has been offered a professorship there = John studied politics at Harvard, where he has been offered a professorship.

1) Last month I went back to BMSTU. I studied Computer Science and Control Systems there.

2) There are over 36,000 students at the University of Manchester. It's the biggest university in the UK.

3) Marta studied politics at Harvard. She has been offered a professorship there.

4) American universities are now facing a lot of competition. They have attracted the world's best students for over 50 years.

5) John F. Kennedy went to Harvard University. It is the oldest institution of higher education in the USA.

6) Heidelberg University in Germany was founded in 1386. It has its own student prison.

Part III. Listening, Speaking and Writing

9. *Explain the meaning of the following words, phrases and a quote in English.*

1) Higher education, full-time education, Bachelor's degree, Master's degree, finals, a thesis.

2) Education is what remains when you have forgotten everything learned in school. (Albert Einstein, 1879–1955, German-Swiss-US scientist)

10. *Work in pairs/groups. Read some information about top Universities in the USA, Finland and Russia.*

- *Make notes about some facts like:*

1) the University location, history, size, specialization;

2) the QS World University Rankings;

3) the number of students/programs, teaching methods, collaborations.

A. Founded in 1861, **Massachusetts Institute of Technology** (**MIT**) is the first best American private university in the world according to the QS World University Rankings 2018–2020, a title it has regularly claimed over the last few years. It's achieved the maximum score across all categories, including research, employability, teaching, facilities, internationalization, innovation, specialist criteria and inclusiveness. MIT is also the best university in the world for a number of subjects including, but not limited to, architecture, linguistics, computer science and information systems, engineering and technology, chemistry, mathematics, economics and econometrics. Based in Cambridge, MIT's classrooms and labs continue to deliver pioneering research into the world's most pressing issues, such as cancer therapy, identity politics, global engagement, energy, public service and industry.

B. University of Yuväskylä: Faculty of Information Technology is the first and largest of its kind in Finland and was founded in 1998. However, Information Systems Science has been taught at the University of Jyväskylä since 1967. Currently, there are more than 2500 Bachelor's and Master's level students and 162 Ph. D. level students studying in the Faculty of Information Technology. The Department of Computer Science and Information Systems is unique in Finland in combining information technology teaching with economic sciences. The department collaborates with a number of local and international businesses and public organizations. Its aim is to train highly competent specialists in information management, software production and electronic commerce and digital media. The Department of Computer Science and Information Systems is located in the Agora building by Lake Jyväsjärvi. True to its name (Gr; market, meeting place), the Agora building brings together students, teachers, researchers and businesses.

C. Tampere University of Technology: Department of Electronics and Communications Engineering is a newly structured department operating from 1st January 2013. The research fields of the Department are Advanced Electronics Systems, Electronic and Biomaterials and Manufacturing, and Communication and Positioning Circuits and Systems. The department has a modern, forward-looking research agenda that is both scientifically ambitious and industrially relevant and well aligned with the general research strategy of the University. The research agenda combines elements of science and technology in innovative ways and is open to new initiatives. The department maintains close ties with industry and the broader society.

The education activities at the Department cover both B. Sc. and M. Sc. level degrees, as well as the doctoral degree which requires clear contributions to the scientific understanding in the research areas of the department. B. Sc. level studies are intended for Finnish students only, whereas M. Sc. and doctoral studies are offered also for international students. The amount of teaching staff at the Department is around 25, and in practice, the majority of the researchers also participate in teaching.

The courses consist of a variety of teaching methods – not only lectures, but also exercises, seminars, laboratory work and web-based teaching.

The education at the department is distinctive for its multidisciplinary and international approach. Biomedical engineering extends to almost every field of engineering by offering education to several degree programs beyond faculty borders. It combines engineering seamlessly to science by applying the methods of physics, mathematics, chemistry and biology among others.

D. Peter the Great St. Petersburg Polytechnic University (**SPbPU**), founded in 1899, is a major Russian technical university providing courses in engineering, physics, economics, humanities and information technology.

SPbPU offers 58 Bachelor's degree programs, 167 Master's degree programs, 89 doctorate programs and 60 international education programs. SPbPU is a national research university which combines multidisciplinary R&D activities with advanced technology to prepare graduates to work in today's competitive marketplace. The university has partnerships with about 300 universities, about 130 scientific and research institutions and over 150 companies from over than 50 countries. SPbPU is a home to over 20 international research centers which carry out research collaborations with major companies including Motorola, Microsoft, Siemens, LG, Apple and AT&T.

E. Bauman Moscow State Technical University (BMSTU) is the leading Russian university that has throughout more than 185 years of its history brought to life outstanding scientists and researchers, who were pioneers in World rocketry, aviation and heavy industry. BMSTU is featured in a number of QS rankings. Ranked 338th in the QS World University Rankings 2015/16, in 2019/2020 the 284th, BMSTU dominates a number of technology-related fields, as reflected in the QS World University Rankings by Subject 2019, including computer science and information systems, electric and electronic engineering, mechanical engineering, mathematics, and physics and astronomy.

F. Moscow State University (MSU), started with three faculties in 1755, nowadays offers education in 27 faculties and research training in a number of institutes. Established in 1755, Lomonosov Moscow State University (MSU) is the highest-ranked university in Russia, and is consistently ranked within the global top 150 of the QS World University Rankings. In 2017/2018 ranking it takes the 95th position, in 2019/2020 the 84th. One of Russia's oldest and most respected institutions, MSU's main building is the tallest educational building in the world. The university library system is one of the largest in Russia with around 9,000,000 books, 2,000,000 of which are in foreign languages. The university has more than 30,000 students enrolled and welcomes about 4,000 international students every year. It offers 116 educational programs and trains students in 128 areas and specialties.

- *Read your first fact to your group-mate(s), who will try to find a letter (A–F) and a fact to match it.*

1) It is best known for research collaborations with major companies including Motorola, Microsoft, Siemens, LG, Apple and AT&T.

2) It is the highest-ranked university in Russia.

3) It dominates a number of technology-related fields in Russia.

4) B. Sc. level studies are intended for local students only.

5) Its aim is to train highly competent specialists in information management, software production and electronic commerce and digital media.

6) It is the best university in the world for a number of subjects including architecture, linguistics, computer science and information systems, engineering and technology.

7) It is situated in the Agora building by the lake.

8) It is the oldest university in Russia.

9) It was founded in 1830 by the Decree of Emperor Nicholas I.

10) It is referred to as a national research university.

11. *Speak about the following topics*.

1) System of higher education in the Russian Federation.

2) History of tech education in Russia.

3) Any technical university.

Search for the latest information about the best technical universities:

http://vuzyinfo.ru/gosudarstvennye/rejting-samyx-luchshix-vuzov-stolicy-dlya-postupleniya.html,

http://vuzyinfo.ru/gosudarstvennye/vuzy-sankt-peterburga-zanyavshie-pervye-pozicii-rejtinga-2015-goda.html.

Part IV. Business Documents: Resume/CV

12. If you want to apply for a Master's Program, internship or holiday part-time job abroad, you should send a CV (curriculum vitae, BE)/résumé (AE) and a covering letter (BE)/cover letter (AE).

A **résumé** or **CV** is a document that contains a summary or listing of relevant job experience and education. The principal differences between a CV and a résumé are.

- A CV is a complete record of your professional and academic history, together with a summary of your skills; a résumé is a summary of the experience and strengths that you have that are relevant to the particular job you are applying for.
- A résumé is usually one page, except for very senior posts; a CV can be longer than this.
- It is unusual to include personal information such as your birth date, marital status, etc. on a résumé; this information is optional on a CV.
- It is common to include the names and contact details of your referees on a CV, but rare to do so on a résumé. CVs are moving closer to the model of the US résumé, in that it is now becoming common to summarize your experience and strengths in the Profile (also called the Career summary) section. For obvious reasons graduates tend not to have a lot of work experience. However, employers are often more interested in a graduates potential rather than their limited work experience. What employers want to see in a graduate is future

potential, ambition, a fresh mind and performance. Successful candidates tend to be those who show motivation, enthusiasm, have transferable skills and are able to communicate effectively.

12.1. *Study the part of a CV. Fill the gaps with these extracts:*

a) be provided;
b) technical skills;
c) play chess in a local club;
d) Graduate trainee;
e) Bachelor of Science;
f) Association of Computer Students;
g) a highly-motivated graduate.

John Alonzo

Profile

I am _____ (1) with excellent problem-solving and leadership skills. I am seeking a challenging career with a progressive company that provides an opportunity to capitalize my _____ (2) and abilities in the field of IT

Education

2015–2019 _____ (3) in Information and Communications Engineering, University of Leeds, West Yorkshire, England

2015–2014 A-Levels in Computer Science, Uxbridge College, Hillingdon, England

Achievements/Responsibilities

2017–2019 President, _____ (4)

2014–2015 Layout Artist, The Guardian Student Magazine

Pre-professional experience

chnical support intern IT Department at Xerox Business Services
ilippines Inc. (June–Feb.)
Provided level 1 support, handled troubleshooting and maintenance

2018 (summer) _____ (5) (two months)
Handled monitoring and deployment

2016 Part-time post as first line support on an IT helpdesk

Key Skills Hardware and network troubleshooting, Programming (Java, C++, Visual Basic, Android Programming Language), Microsoft Office, Adobe Creative Suite. Excellent written and verbal communication skills. Ability to work independently or as part of a team.

Interests Enjoy music, travelling, _____ (6)

References Will _____ (7) upon the request

12.2. *Work with a group-mate to discuss the following.*

1. What is a purpose of a CV?
2. Is there a standard format for a CV?
3. Should you use the same CV for all jobs applications?
4. What headings do you normally find in a CV?
5. Should you always tell the truth when writing your CV?
6. How many pages long should a CV be?
7. How could the CV of John Alonzo above be improved?

12.3. *Fill in the text "How to get a job" with suitable words.*

a) covering letter	f) qualifications
b) interview	g) job advertisements
c) vacancy	h) training
d) contract	i) job offer
e) Curriculum Vitae (CV)	j) application form

How to get a job

Stage 1: Study to obtain the necessary ____ and complete your vocational ____.

Stage 2: Prepare your ____ which summarizes your skills, qualifications, training and work experience.

Stage 3: Search the ____ for a suitable ____ in your chosen field.

Stage 4: Complete an ____ or send your CV with a ____.

Stage 5: Attend an ____.

Stage 6: Receive a ____.

Stage 7: Accept it and sign a ____.

12.4. *Write a CV to some university company/society. Here are a few examples of CVs/Resumes:*

https://www.engvid.com/english-resource/resume-sample-tips/,

https://www.studentjob.co.uk/application-tips/cv-example,

https://zety.com/resume-examples.

UNIT 6. GLOBAL ENGLISH

1. *Work with a group-mate to discuss the following.*

1) What does the word "global' mean?
2) Is English "global"? Prove your point of view.
3) What other global languages do you know?
4) Could you name the countries where English is an official language?

5) “English is necessary for living on the Internet”. What do you think about this statement?

6) Is learning languages an easy thing? Why?

7) Why is learning English important for the Russian students?

8) Why are foreign languages essential for specialists?

9) Why is English necessary for you? Can you name 5–10 reasons to learn it?

2. *Look at the following international words and guess their meaning and check the pronunciation:*

official, global, essentially, characterized, “lingua franca”, diverse, ethnic, spread, population, accent, concern, variety, slang, major, majority, minority, percent, particularly, to identify, international, multinational, proficiency, potential, hybrid, origin, sphere, status, figure, literacy, technology, character, economy and commerce, MBA programs, businesses.

Part I. Text

1. *Here are the words and word combinations you have to learn. Rewrite them and find their meaning using online translators (www.lingvolive.com, www.multitran.ru).*

“Lingua franca”, the spread of, worldwide status, technological and cultural influence, employee, requirement, currency, minority, percent; widely spoken, widespread, fluent, diverse, major, to be characterized, to be taught; to borrow, to transfer via, to expand, to establish, to tie up, to require, to pronounce, to emerge, according to the statistics, essentially, particularly, approximately, overall.

2. *Read the text paying attention to the words in bold. Choose the most suitable headings for paragraphs A–E. There are three extra headings.*

1) Geographical distribution of English.

2) Technological and cultural influence on language.

3) English for business.

4) Varieties and subvarieties of English.

5) Reasons for learning English today.

6) Disappearance of minority languages

7) Pros and cons about English as a global language.

8) The definitions of the term “global English”.

Global English

A _____

There is no official definition of “global” or “world” language, but it essentially refers to a language that is learned and spoken internationally, and is characterized not only by the number of its native and second language speakers, but

also by its geographical distribution, and its use in international organizations and in diplomatic relations. A global language acts as a "lingua franca", a common language that enables people from diverse backgrounds to communicate on a more or less suitable basis.

So because English is so widely spoken, it has been referred to as a "global language". While English is not an official language in many countries, it is the language most often taught as a second language around the world. It is also, by international standards of communication, the official language for aircraft/ airport communication and shipping. Also, in countries with several tribal or ethnic groups speaking different languages, they often choose English as the official language of government, as in Nigeria, India and Papua New Guinea. Its widespread acceptance as a first or second language is the main indication of its worldwide status. According to the statistics, about 400-500 million people around the world speak English as a first language and about 1.5 billion people speak English as a second language. In other words, one in every 5 people on our planet regularly uses some sort of English – and the percentage is growing all the time.

B _____

But there are numerous arguments for and against English as a global language. On the one hand, having a global language aids in communication and in the scientific community. On the other hand, it leaves out those who, for one reason or another, are not fluent in the global language.

A secondary concern with respect to the spread of global languages (including major languages other than English such as Spanish, Chinese, Arabic, etc.) is the resulting disappearance of minority languages, often along with the cultures and religions that are primarily transmitted in those languages. Language death caused by English has been particularly pronounced in areas such as Australia and North America where native speakers have been displaced by speakers of English in the process of colonization.

C _____

The major varieties of English in most cases contain several subvarieties, such as Cockney slang within British English, Newfoundland English, and the English spoken by Anglo-Quebecers within Canadian English, and African American English within American English. English is considered a language with no variety being clearly considered the only standard. Because of English's wide use as a second language, English speakers can have many different accents, which may identify the speaker's native dialect or language.

D _____

Just as English itself has borrowed words from many different languages over its history, English words now appear in many languages around the world. This fact indicates the technological and cultural influence of English speakers.

English is mixing with and marrying other languages around the world. Other languages absorbing English words often give them new forms and new meanings. So many Japanese, French and Germans mix English words with their mother tongues so that the resulting hybrids are called *Japlish*, *Franglais* and *Denglish*. In Japanese, there is a verb *Makudonaru*, to eat at McDonald's. One of the many "Englishes" spoken and written today is *Euro-English*. Euro-English has its origins in the political arena of the European community.

E _____

In spite of these facts, English has emerged as a global language for many reasons. English is the main language used for electronic communication. About 80 percent of all electronic information stored in computers and transferred via internet is in English. Approximately 65 percent of Internet host computers are in the US. In more than 100 countries, people in chat rooms discuss topics and communicate in English.

Besides the reason above, English is greatly necessary for businesses, global corporations, the global economy and commerce. It's increasingly true as international trade expands every year, bringing new countries into contact. Large corporations have established themselves all over the world in almost every country and all stock and currency markets are so closely tied up. Many of the best MBA programs are taught in English, so speaking it well can put you in a position to get the best training. Most multinational companies require a certain degree of English proficiency from potential employees so in order to get a position with a top company, more and people are learning English.

So to know English is absolutely necessary for every educated person, for every good specialist. Knowing English well is one of the main requirements for graduates of Russian universities, who want to become ICT specialists and to have a successful career.

3. *True, false or no information according to the text. Find the sentences in the text that support your point of view.*

1) "Lingua franca", a common language that enables people from diverse backgrounds and ethnicities to communicate on a more or less unsuitable basis.

2) English is a "global" language because it's widely spoken by people over the world.

3) According to the statistics, about 150 million people speak English as a second language.

4) English speakers can have many different accents, which may identify the speaker's native dialect or language.

5) English is the unofficial language of the Internet.

6) Many of the best MBA programs are taught in English, so speaking it very well can put you in a position to get the best training.

7) Unofficially, English is becoming the international language of travelling and tourism.

4. *Find in the text the words or phrases which mean the same as:*

родной язык, официальный язык, общий, универсальный, дипломатический, широко распространенный, этнический, всемирный, около, появление, многочисленный, быстро, с одной стороны, с другой стороны, малочисленный, заменить, считать, определять, заимствовать, влияние, примерно, работники, образованный.

5. *Prepare a short summary of the text using the following expressions (See Appendix 2 for annotation details).*

Part II. Language

6. *Rewrite the sentences using Passive verb forms.*

1. People ***use*** English in electronics and business communication. 2. Professors ***teach*** English as a second language all over the world. 3. About 400–500 million people around the world ***speak*** English as a first language. 4. Speakers of English ***displaced*** native speakers in the process of colonization. 5. In more than 100 countries, people in chat rooms ***discuss*** topics in English. 6. English ***has borrowed*** words from many different languages over its history. 7. Most multinational companies ***require*** a certain degree of English proficiency from potential employees. 8. Texting for everything (e. g. SMS) **affects** the literacy skills of young people.

7. *Translate the sentences into English.*

1. Английский язык является официальным языком в 40 странах. Это наиболее распространенный язык в международном бизнесе, науке, медицине. 2. Слова, которые заимствуются из английского языка, могут использоваться в том же виде. Некоторые слова, заимствованные из английского языка, изменяются. 3. Лингвисты считают, что исчезновение многих языков неизбежно. 4. Каждый образованный человек обязан знать хотя бы один иностранный язык. 5. Знание иностранных языков дает возможность общаться и понимать людей других стран. 6. На английском языке говорят во всем мире. 7. Настоящий профессионал не может обходиться без знания английского языка, так как это язык международного общения. 8. Инженер сможет прочесть инструкции к приборам, если он будет знать английский язык. 9. Ученый должен знать английский язык, чтобы читать научные книги и выступать с докладами на международных конференциях. 10. Знание иностранных языков помогает нам знакомиться с обычаями и традициями других народов.

Part III. Listening, Speaking and Writing

8. *Explain the meaning of the following words and phrases in English:* native language, global language, official language, minority language, global village.

9. *Prepare for the discussion answering the following questions.*

1) How many languages are there in the world today?

2) How can you prove that the English language is the most universal one?

3) In what ways does the English language influence other languages?

4) Why do some people think that English is dangerous for their native languages?

5) Why do some people believe that English should be the international language?

6) What is a dead language?

7) Why do language experts think that some languages are disappearing? What are their main reasons for language disappearing?

8) What is lost if a language is lost?

9) Why will the international language be English, and not an artificial language?

10) For which two things is English used as the official international language?

11) Which of the world's languages has the greatest number of native speakers?

12) There are 3 reasons to explain why English is so widely spoken. Name the reasons why English is the global language.

13) What are examples of the mother tongue varieties of English?

14) What's the difference between the accent and the dialect?

15) Is there any difference between British and American variants of the English language?

16) What do you think the most difficult about English is: vocabulary, spelling, pronunciation?

17) What are the main arguments for and against texting?

10. *Discuss the statements in pairs. Prove your point of view using the phrases:* ***I agree with you; Yes, that is what I think; You are right; Yes, but don't you think …?; True, but I think …; I see what you mean, but …***

1) Everybody should speak at least two languages.

2) Tourists in my country should make an effort to speak my language.

3) Life would be easier if all countries spoke the same language.

4) Some languages are more important than others.

5) Knowing foreign languages helps you to get a good job.

6) If you grow up not speaking your language, you won't know who you are.
7) The world would be a better place if everyone spoke the same language.

11. *Work in groups of 3–4 to find some more information and prepare the presentations:* ***"English and Social Media: Pros"****;* ***"English and Social Media: Cons"*** *(What happens when language becomes "Facebook official"; How is social media changing the language);* ***"Is Texting Killing the English Language?"***

You can try these websites:
http://blog.oxforddictionaries.com,
http://ideas.time.com/2013/04/25/is-texting-killing-the-english-language/.

Part IV. Business E-mail: the basics

12. Email stands for electronic mail. It is the easiest and the cheapest way of communication. It is used in formal, semi-formal as well as an informal way of expression or writing. The language used in formal emails should be professional, clear, and formal. In fact, there are no rules for writing e-mail messages in English. However, there are some rules for writing effectively: never use a metaphor, simile or other figure of speech which you are used to seeing in print; never use a long word when a short one will do; if it is possible to cut a word out, always cut it out; never use the passive where you can use the active; never use a foreign phrase, a scientific word or a jargon word if you can think of an everyday English equivalent.

The email writing format is usually the following.

From: Sender's email id
To: Recipient's email id
Cc: Other individuals receiving the same mail with visible ids
Bcc: Other individuals receiving the same mail with invisible ids
Subject: Title or the reason of writing email
Salutation: Words like Dear, Respected, Hello etc.
Main body: The main content of the email
1. Introduction
2. Matter in detail
3. Conclusion

Closing: Ending statement
Attachments: Attached files with emails
Signature line: sender's name, signature, and other details of contact

Here are some ways to introduce the subject of the message:
With reference to …
Further to …
I am writing in connection with …
With regard to …

12.1. *Pronunciation practice. Read the email addresses and repeat them:*
jtidman@deltainternational.co.uk
Tombuddell-25@yahoo.com
uwe_timm@deltainternational.de 7
Now ask three other group-mates for their email address and write them down.

12.2. *Look at the two emails and match each item (1–7) to the correct meaning (a–g).*

To: Boris Smirnov From: John Smith Subject: Re: Agents in Bahrain
Dear Mr. Smirnov, Thank you for your email of 8 February, enquiring about agents for your products. I have forwarded your email and the attached catalogue to the following companies in Bahrain. They all specialize in sales of electronic equipment. I have asked them to contact you directly. Arabian Electronics arabianelectronics@batelco.com.bh Gulf Communications gcom@gcom.com We hope that this will help you. Yours sincerely, John Smith Eastern Bank, Bahrain

To: Corporate Section From: Boris Smirnov Subject: Agents in Bahrain Cc: Ryota Ishikawa Attached: catalog.pdf
Dear Corporate Section, We are writing to inquire about agents for our products in Bahrain. Your branch in Osaka, Japan, told us that may be able to help us. We specialize in the manufacture of radio telephones. All present, we export to Europe and Latin America, but we would like to start exporting to the Arabian Gulf. Could you please forward this email to businesses in Bahrain that may be interested in representing us? I attach a catalog. Sincerely, Boris Smirnov Export Division

1) To: a) a document or other file you want to send with the email.
2) From: b) the name and email address of the person you are writing to.
3) Subject: c) the name and email address of smb you want to send a "blind copy".
4) Cc: d) your full name, address and other details that are automatically put at the end of your email.
5) Bcc: e) the topic you are writing about.
6) Attached: f) your name and email address.
7) Signature: g) the name and email address of smb you want to send a copy to.

12.3. *Work with a group-mate to discuss the following.*

1) What are the advantages of email?
2) Why is email writing important?
3) How to write a perfect email?
4) What are the rules of email etiquette?
5) How does the email open and close?
6) Where does each paragraph start? How are they separated?
7) What abbreviations are used in such messages?

12.4. *Read, translate and define the type of the following emails:*

a) formal; b) informal; c) semi-formal.

1.

To: XYZ CC/BCC: Subject: Invitation to a birthday party
Hi XYZ! Hope this mail finds you in the best of your time. I am very happy to invite you to my birthday party on Nov 03 at ABC Hotel from 7:00 pm to 10:00 pm. The theme of the birthday party is "Pirate of the Caribbean". It would be great if you come and join us at the party. We will have a great time and fun together. See You Soon, LMN

2.

To: XYZ CC/BCC: Subject: Intra-college Quiz Competition
Hello Everyone, This is to inform you guys that an intra-college quiz competition is going to be held in our college on Nov 25 from 11:30 am in Hall – 01. Everyone is therefore asked to take part in the competition so that our department can win. For further queries, feel free to contact me. Thanks, LMN (Class Representative)

3.

To: XYZ CC/BCC: Subject: Resignation Letter
Dear Sir, Please accept this mail as a notice that I am leaving my position with this organization. As per the norm of the company I've to give a month notice before resigning. I hope you will get a good replacement for me within this time period. I really appreciate the opportunities that have been given to help me grow. Wish you and the company the best in the future. Please let me know what to expect as far as my final work schedule and the employee benefits. Please let me know in case of any assistance for the above. Kindly look into the matter. Thanks and Regards, LMN

12.5. Rewrite the email text according to formal email rules. Delete as many unnecessary words as possible from this e-mail message, while keeping the meaning (e. g. change foreign words to English ones, change passive verbs into active ones, etc.).

From: Brain Golan For: Mr Harrison
My dear Mr Harrison! I was informed early today by your colleague, Jane Rodber, that your company is now ready to consider our proposal. It goes without saying that I'm delighted to hear this news. However, I will be on vacation in Berlin for the next four days and so regrettably during this period I will not be available to attend personally to any queries that you may have. Notwithstanding the above, you will be telephoned by my secretary to arrange a little rendezvous after my return when I hope this matter can be discussed further. May I say that very much I look forward to meeting you. With best wishes, Brian Golan

12.6. *Compare your version to the version given below. Which do you think is better?*

From: brian.golan@lucky To: jharrison@aol.com Subject: Proposal Discussed
Dear Mr Harrison, Your colleague, Jane Rodber, told me that you are now ready to consider our proposal. I'm definitely delighted to hear this news. However, I am on vacation for the next four days and so won't be able to deal personally with any queries until I get back. My secretary will call you to arrange a meeting after my return when I hope we can discuss the matter further. I look forward to meeting you. Yours sincerely, Brian Golan

UNIT 7. JOBS IN IT & TELECOMS

1. *Work with a group-mate to discuss the following:*

1) Are there many different jobs in IT and Telecommunications? How much status do these jobs have in our country?

2) Can you name the specialists in the sphere of IT & Telecoms? How important/useful do you think they are?

3) Do you know their responsibilities and tasks?

4) What's the difference between electrical and computer engineering?

5) Approximately how much are people paid for these jobs in Russia and abroad? Do you think they should be paid more or less money? Why?

6) Which adjectives would you use to describe the jobs in IT and Telecommunications?

7) How do you see your future profession? How do you think your future professions will help you in your life?

2. *Complete the sentences with the following jobs:* a computer security specialist, a computer engineer/hardware engineer, a help desk technician, a software engineer, a network engineer, a web designer.

1) _____ designs and develops the components of a computing system, microprocessors, sound boards, etc.

2) _____ writes computer programs, the computer codes.

3) _____ designs and maintains websites, updates their content.

4) _____ communicates with end-users dealing with their computer errors, internet connectivity, and other problems to be troubleshot.

5) _____ carries out measures to make computers more secure and prevent systems crashes.

6) _____ manages computer hardware and software that comprises a network.

3. *Match the job titles below with their explanations denoting duties and responsibilities.*

1. Line mechanics (Cable jointers)	a) develop, maintain and administer organisations' database management systems, operating systems, and security policies and procedures
2. Electronics trades workers	b) plan and supervise the computer and information technology services in an organisation
3. Telecommunications technicians	c) investigate, enhance and evaluate the development of new materials, deal with microscopic applications
4. Computer support technicians	d) assemble, install, test, operate, maintain and service electronic parts and equipment

Окончание таблицы

5. Database/system administrators	e) prepare tests for new computer software and systems, analyse the results, identify any problems, and help come up with solutions to fix them
6. Telecommunications engineers (Communications engineers, Fibre Optic Transmission engineer)	f) research the systems and procedures an organisation uses, and decide if, and how, computer applications and systems could be used to improve business efficiency and productivity
7. Information and communication technology (ICT) managers (ICT managers, IT managers, Chief Information officers, Computing Services managers)	g) study, design and oversee production of electronic equipment such as radios, televisions, computers, washing machines and telecommunication systems; they may also service equipment, detect flaws and troubleshoot
8. Programmers (Software developers)	h) design, install, and configure computer systems, and the software and hardware that run them
9. Business analysts (System designers, System analysts)	i) study, design, test and build telecommunications networks and systems
10. Electronics engineers (Automation engineers, Hardware engineers)	j) write, test, develop and maintain computer software programs
11. Test analysts	k) install, maintain and repair electronic communications equipment in telecommunication networks and internet supply systems
12. Network engineers (Network analysts, Solution architects)	l) help identify and fix problems with computer hardware, software and websites
13. Nano-engineers	m) install, repair and maintain overhead and underground lines

4. *Describe job responsibilities of different specialists. Use the following patterns.*

1) I'm going to become a … I'll have to ...

2) If you are a/an …, you have to ...

3) My father's/friend's/brother's/sister's profession is … He/she is responsible for … His/her tasks/duties are ...

Part I. Text

1. *Here are the words and word combinations you have to learn. Rewrite them and find their meaning using online translator (www.lingvolive.com, www.multitran.ru).*

Engineering, computer engineering, software engineering, telecommunications engineering, nanoengineering, computer science, broadband telecommunications, emergence, hardware, software, networking, application, equipment, central processing unit, memory storage, cell phone, satellite, copper/fiber optic cabling, switching system, scanning tunneling microscopy (STM), atomic force microscopy (AFM), technique, to evolve, to be sought after, (to) input, (to) output, to

update, to be in demand, to be responsible for, (to) design, to develop, to crank out, to measure, to meet one's needs, to use off-the-shelf components, to work flawlessly, to be familiar with, to validate, to oversee, to assure, to enhance, to investigate, to evaluate, to install, to transmit, collaborative, traceable, sustainable, durable, wired, wireless, cellular.

2. *Read and translate the text.*

Jobs in IT & Telecoms

1. Computer Engineering

Computer engineering is an evolving field of engineering. The field really began with the emergence of the computer in the 1980's: many hobbyists built their own hardware and developed their own software.

In the past, computer engineering was split into two sub-categories: Computer Hardware Engineering and Computer Software Engineering. Now with new technology and the need for a new area of expertise, the field consists of specialties that really deserve their own category. Networking, infrastructure, architecture, as well as application and web development all play their part in computer engineering.

Today, computer engineers are very highly sought after. Computer engineers are now developing the most complex and innovative forms of technology that we all use today. Virtually every modern machine and process is computer-controlled. Some computers are tiny, as in the smallest cell phones and smart devices. Other computers are actually massive networks of thinking machines, working on terabytes of data and cranking out billions of calculations per second. The common factor making these machines possible is the Computer Engineer.

Computer Engineering differs from Software Engineering and Computer Science in that it focuses on the actual hardware that's responsible for performing the work. Software is the set of instructions used by a computer to get work done. While they need to know the principles of software operation, Computer Engineers are responsible for designing the components of a computing system.

Computer Engineers design everything from the central processing unit to primary and secondary memory storage to input and output methods. They test computer components and systems by developing and designing memory devices, processors, circuit boards, and networks. They make computers more mobile or incorporate computers in other areas, such as machines or building materials. Even if they are using off-the-shelf components, they're responsible for making sure the integration works flawlessly. They should have knowledge of computers and electronics, technology and engineering, design, mathematics and physics. They are skilled at complex problem solving, speaking effectively to others,

active listening, decision making and operation analysis, among other abilities. They communicate information to supervisors, subordinates or others in a clear manner, either by phone, in person or through email. They contribute artistic creativity and ideas that assist in the development or design of a project. Many computer engineers work in research labs and this career tests and builds computer models. These firms are mostly high-tech manufacturing offices or labs. Computer engineers are and will continue to be in high demand.

2. Software Engineering Degrees

Most people are familiar with older, more traditional engineering fields such as mechanical, civil, or electrical. Software Engineering is a relatively new discipline, but in today's increasingly interconnected world, it is becoming more and more important.

Engineering differs from Computer Science or Web Design in that you are formulating how the overall software system functions, and how it works within its intended hardware environment. Software Engineering is the discipline that makes sure computer systems are developed methodically and result in building the right product with quality built in from the beginning.

Software engineering is a practical, intuitive, creative and analytical field. Software Engineers are responsible for every phase of a development project, not just for writing the computer code. Upon the initiation of a project, they make sure requirements are documented and validated. Then they move on to system design, often overseeing the creation of software prototypes to present to clients for additional validation. Once the design is solid, Software Engineers manage the overall development effort to make sure the pieces are coming together as planned. Finally, they create and oversee test cases which assure system functionality is complete and traceable to the requirements generated at the time of project initiation.

Some of the major branches and career paths in software engineering include:

- Applications Development (problem solving-based, non-Web-based software development that includes programming languages such as Java and C++);
- Systems Development;
- Web Development;
- Embedded Systems Development.

Software engineers may have different areas of focus. Some tend to work on software development while there are other people who prefer to concentrate on system design. Some will focus on medical software. Game design is also growing in popularity. All of these professionals work using the same software engineering principles.

IT software solution professionals always work closely with clients to modify existing systems or create new systems. They may modify "off the shelf" software and integrate it into the existing systems. They often work as part of a team of software professionals responsible for the requirement specification, system analysis and design, construction, testing, training and implementation, as well as maintenance of a business software system. The tasks performed by IT software solution professionals include but are not limited to the following: review current system and present ideas for improvement, including cost benefit analysis; analyse and specify user requirements; produce detailed specifications for new systems or for modifications to existing systems; develop software systems and test the software solution thoroughly; prepare user training materials, train users, and present the software solution to users; install, implement and maintain the software system IT software solutions professionals can be employed in large, medium and small enterprises as software engineers, in consulting firms as consultants and in software houses as contractors.

3. Telecommunications Engineering

Telecommunications engineers are electrical and electronics experts who may specialize in a certain type of technology, such as telephone networks or broadband telecommunications.

Communications engineers work within a number of industries, including:

- internet and computing technologies;
- networking and telecommunications;
- radio.

Telecommunications engineers design and install equipment used for transmitting wired phone, cellular, cable and broadband data. Their day-to-day responsibilities can include working with copper or fiber optic cabling, complex networks and switching systems. Telecommunications engineers may be employed by wired and wireless telecommunications companies, engineering consulting firms or government agencies. Some engineers concentrate on applying technical knowledge, while others focus on managerial activities. Many posts include elements of both managerial and technical responsibilities.

Telecommunications engineers are analytical, creative and methodical problem solvers with excellent concentration, math and team-work skills. As members of manufacturing teams, they are also collaborative professionals and good speakers with interpersonal intelligence and the ability to work well with others.

Wireless telecommunication engineers are electrical engineers that specialize in developing, manufacturing, and testing wireless technologies, such as cell phones, the satellite systems that support them, and wireless computer networks. The field of wireless telecommunication engineering changes rapidly as new

technologies develop. Wireless telecommunication engineers must constantly update their skill sets to stay current.

The Network Cabling Technicians construct the infrastructure of all the telecommunication networks such as those for Wide Area Networks (WAN), Local Area Networks (LAN), and Cable TV (CATV). This work is highly technical and requires detailed specialized knowledge in order to independently design and install networks that meet clients' needs and conforms to recognized industry standards.

4. Nanoengineering

Nanoengineering encompasses the practice of the profession on a nanoscale, which stems from the nanometer unit of measure, equivalent to one billionth of a meter. Within the industry, nanoengineering is synonymous with practices of nanotechnology, whereby it focuses on the engineering component of a given technology rather than the scientific side. Nanotechnology professionals have become prized professionals in the current marketplace for their skills and training dealing with microscopic applications.

From the automobile and energy industry to healthcare and technology firms, companies around the world eagerly seek to attract and develop these professionals. Within these realms, scanning tunneling microscopy (STM) and atomic force microscopy (AFM) are the dominant techniques of the field used to solve problems and originate new technologies. Both techniques pivot on generating microscopic probes to manipulate and track the movement of atoms with the idea of capturing something significant to translate into real world applications such as revolutionary manufacturing materials or new pharmaceutical products.

Professionals in this field often perform duties depending on the industry they work in and/or their educational backgrounds. In biosciences, nanoengineers dedicate their time to developing new medical device products and ways to enhance existing ones. From a construction viewpoint, these experts investigate and evaluate the development of new materials to develop more sustainable and durable building products and materials. Automotive companies employ these engineers to develop more efficient processes within an engine system and materials to build and pad vehicle systems and interiors. Nanotechnology engineers must have strong analytical skills so that they can review data related to their research and the effectiveness of products they create. They also need problem-solving skills to develop strategies to alter designs to improve the performance of their products. Communication skills are important because nanotechnology engineers will need to be able to share their research and the results of their tests with others in their field. Attention to detail is important because they work with very tiny objects.

3. *True, false or no information? Find the sentences in the text that support your point of view:*

1) An undergraduate of Computer Engineering degree typically takes four to five years to complete.

2) Software Engineering is a traditional discipline, becoming more and more important.

3) Telecommunications engineers design and install equipment used for transmitting all kinds of data.

4) Nanotechnology focuses on the scientific component of a given technology rather than the engineering one.

5) Graduate engineers can both build software and integrate software applications into existing projects.

6) Telecommunication Engineers design everything from the Central Processing Unit to primary and secondary memory storage to input and output methods.

7) Software Engineers are responsible for writing the computer code only.

8) Computer Engineering focuses on the actual hardware responsible for performing the task.

9) Wireless telecommunication engineers must constantly update their skills because the fields of wireless telecommunication engineering changes rapidly.

10) Computer Science is a narrow field of study that develops skills in creating software, applications and web pages, etc.

4. *Answer the questions.*

1) How many categories is computer engineering split into nowadays?

2) What problems does computer engineer focus on?

3) What are the duties of a computer engineer?

4) What are software engineers responsible for?

5) How many phases of software development project are mentioned in the text?

6) What are day-to-day responsibilities of telecommunication engineers?

7) Why is it necessary for wireless telecommunication engineers constantly update their skills set?

8) What do nanoengineering and nanotechnology have in common and what are the differences between them?

9) In what industries can nanoengineers work?

10) What are required skills for nanotechnology engineers?

5. *Continue the sentence.*

1) Telecommunications engineers design and install _____.

a) software prototypes to present to clients;

b) equipment used for transmitting different kinds of data;

c) microscopic probes to manipulate and track the movement of atoms.

2) Computer Engineering differs from Software Engineering and Computer Science in that _____.

a) it focuses on the engineering component of a given technology rather than the scientific side;

b) it changes rapidly as new technologies develop;

c) it focuses on designing the components of a computing system.

3) Software Engineers are responsible for _____.

a) developing new medical device products and ways to enhance existing ones;

b) developing, manufacturing, and testing wireless technologies and wireless computer networks;

c) developing software, game design etc.

4) Nanotechnology professionals _____.

a) investigate and evaluate the development of new materials;

b) create and oversee test cases which assure system functionality is complete;

c) specialize in developing cell phones.

6. *Prepare a short summary of the text using the expressions (see Appendix 2 for annotation details).*

Try to speak about professions described in the text, underlining the sentences containing the basic information, e. g. skills, responsibilities, spheres and industries of employment.

Part II. Language

7. *Put in the right word and translate the sentence.*

1) There are some traditional _____ fields such as mechanical, civil, or electrical (engine, engineering, engineer).

2) Telecommunication equipment is used for _____ data (transmit, transmitter, transmitting).

3) In biosciences, nanoengineers are responsible for _____ of new materials (developing, develop, development).

4) Some _____ are actually massive networks of thinking machines (computers, compute, computing).

5) Today's world becomes _____ interconnected (increase, increasingly, increasing).

6) Good math skills are extremely _____ for computer, software and telecommunication engineers (usage, useful, use).

8. *Put the verb in brackets into correct tense.*

1. She (work) as a software engineer. 2. He (design) a new computer system at the moment. 3. Last year he (create) a new test to assure that system functionality is complete. 4. When I entered the laboratory, the engineers (test) a new wireless technology. 5. Professionals in this field already (perform) a medley of duties. 6. Telecommunication engineers (continue) to be in high demand in future. 7. We (specialize) in developing, manufacturing, and testing wireless technologies before a new colleague joined our team.

9. *Rewrite the sentences using the construction* ***"It is … who/that"****. Translate the sentences.*

1. Wireless telecommunication engineers specialize in developing, manufacturing, and testing wireless technologies. 2. Software Engineers are responsible for every phase of a development project. 3. Automotive companies often employ nanoengineers to develop more efficient processes. 4. Computer Engineers design everything from the Central Processing Unit to primary and secondary memory storage. 5. Today, computer engineers are very highly sought after. 6. Software Engineering is becoming more and more important. 7. Computer engineering evolves very quickly. 8. Game design grows in popularity.

10. *Translate into English.*

1. Я творческая личность и поэтому хочу заниматься разработкой компьютерных игр. 2. Специалисты в области телекоммуникаций постоянно востребованы на рынке труда. 3. Инженеры-связисты обычно работают в команде, и поэтому они должны уметь сотрудничать. 4. Раньше были инженеры-схемотехники и инженеры-системотехники. 5. Системные администраторы разрабатывают, поддерживают в рабочем состоянии и администрируют компьютерные сети организаций, а также отвечают за политику безопасности в сети. 6. Специалисты в области компьютерных сетей конструируют и монтируют компьютерные сети, а также разрабатывают аппаратное и программное обеспечение для них. 7. Все специалисты-инженеры в области информационных технологий и связи должны очень хорошо знать математику. 8. Монтеры-кабельщики прокладывают, ремонтируют и поддерживают в рабочем состоянии линии связи. 9. Операторы службы компьютерной поддержки помогают находить и устранять проблемы в работе компьютера. 10. Первые компьютеры были созданы именно любителями.

Part III. Listening, Speaking and Writing

11. *Add the missing letters to the adjectives below. Which ones would you use to describe the job in IT and Telecommunications?*

1) r_w_rd_ng;
2) ch_ll_ng_ng;
3) str_ssf_l;
4) b_r_ng;
5) r_p_t_t_v_;
6) s_t_sf_ _ng;
7) _xc_t_ng;
8) fl_x_bl_;
9) cr_ _t_v_;
10) h_ghl_– p_ _d;
11) c_mp_t_t_v_;
12) pr_st_g_ _ _s;
13) h_ghl_– d_m_nd_d;
14) pr_m_ss_ng.

12. *Which of the following statements are true to you? Ask your group-mate(s) about his/her preferences.*

1) After graduation from the University, I'm going to join a telecom company. I'm willing to improve the way people communicate and share information.

2) I'm interested in different spheres of computer engineering. I hope some internship will help me to figure out what to major in.

3) I am concerned about sustainable and renewable energy sources, so I do hope to contribute into their development.

4) I'm fond of artificial intelligence, robotics, everything about adaptable robots.

5) I'm really good at math, physics, and electronics but it's really difficult to figure out what to major in.

6) I dream of helping people by developing advanced medical equipment.

7) I am keen on space technologies. Perhaps, I'll develop some space stations or satellite equipment.

13. *Role play ''Job Interview''. Act any of three situations: Role A – an applicant, Role B – an interviewer.*

1 Role A You apply for a position of a help desk technician in SPbSUT. You want to get this job as it's convenient for you to study and to work in the same building. You don't have any work experience, but you're good at electronics. You have been taking apart and fixing devices since your childhood. You have very good communicative skills. You're stress-resistant and ready to deal with any problem. You speak fluent English and have basic knowledge in French	**1 Role B** You're the head of the IT department in SPbSUT. You're looking for a new help desk technician as the previous one wasn't responsible enough. You're looking for a person: 1) who is always on duty; 2) who can troubleshoot any technical problem; 3) who can get on well with different people; 4) who speaks English (some employees of the University don't speak Russian). Interview a candidate. Ask him/her about work experience and skills you're interested in, announce your decision about him/her employment
2 Role A You apply for a position of a web designer of a big international company. You've designed lots of websites. All of your projects were pretty creative and successful. You've worked for Kaspersky company and a few small organizations. You're already familiar with HTML and are learning XML. Now you prefer teleworking as you have to study at the University	**2 Role B** You're the head of the HR department of a big international company. You're looking for a part time web designer (teleworking is possible). Candidate responsibility: 1) to maintain and update the website of the company, including English version; 2) to create unique websites for your company VIP clients; 3) must be well-versed in languages like PHP and Java and have the ability to create scripts or web pages. Interview a candidate. Ask him/her about work experience and skills you're interested in announce your decision about him/her employment
3 Role A You apply for a position of a network designer of a multinational organization. You've got the university degree (Engineering) with honors not long ago. You've had some experience in switching and transmission while being a graduate trainee. You're looking for a challenging position with a fast-expanding company in telecommunication, which will appreciate your leadership qualities and strong communication skills. You speak fluent English, German and have basic knowledge in Chinese	**3 Role B** You're the head of the R&D of a multinational organization "Anglo Telecom". Due to company expansion you now need a Network Designer to work on your 21st century development project and be involved in all areas of the project. Requirements for a network designer: 1) to know and work on a wide range of networking technologies; 2) to work effectively in a team; 3) to have a university qualification in Telecommunication Engineering or a related subject; 4) to have an experience of working with different cultures. Interview a candidate. Ask him/her about work experience and skills you're interested in announce your decision about him/her employment

Work in pairs and prepare for some common and killer questions that are often asked during the interview:

1. What are your strengths and weaknesses? 2. Why do you want to work for us? 3. What did you like most in your last job? 4. How do you get on with other people? 5. Do you work best on your own or in a team? 6. How do you manage multitasking? 7. How do you deal with stress?

14. *Write a report about your future major/profession. Make up your own oral presentation according to some hints (see Appendix 3).*

1) Choose one job and explain the reason of your choice. Talk about responsibilities, knowledge and skills. What education should you complete? What job experience is required? Explain why you would (not) like to choose this job in the future? What is needed to be a perfect candidate for this job?

2) Use phrases: *e. g.* to be interested in/keen on/good at/deeply attracted to/fond of ...

3) Describe duties/tasks/responsibilities/spheres of employments/companies and places.

4) Give some details: *e. g.* a set of hard and soft skills/personal characteristics and qualification required for this job …

5) Praise and conclude about this job: promising/creative; challenging/ complicated; prestigious/sophisticated; well/highly paid …

6) Praise and conclude about these specialists/the spheres of employment and career promotion: *e. g.* to be in demand/to be sought after/to be not afraid of/to be popular/to stay current …

Part IV. Business Correspondence: Memo

15. There's a lot of specialized vocabulary that's used in the office. If you work in an office and want to present yourself professionally, it's especially important that you are able to understand and use these terms. **A memorandum (or "memo")** is a short piece of writing designed for communication within an organization. It is a piece of business communication, typically aimed at a specific audience (like members of a company or team). It is typically either a reminder of the importance of some particular thing or a request to take specific action. Examples of reasons to send out a memo could be: "An IT guy sending a reminder that all passwords need to be updated every 60 days or to be at a team meeting Monday at 2 pm to discuss something specific". Formal memorandum template usually includes the following:

To: [Audience] **From:** [Person and/or Department issuing the memo] **Date:** [Date Sent] **Subject:** [Subject of the Memo]
Opening [Get to the point in the opening paragraph. Keep things simple and short. Make it easy and fast to read] ***Summary*** [Provide enough background so all readers understand the history, but again, keep it simple] ***Conclusion*** [End with a call to action] ***CC*** [Send copies to anyone affected by the memo] ***Attachments*** [List any attachments to the memo. Only list items referred to in the body of the memo]

Common types of memos include:

- directive memos, where instructions are given;
- status or progress report memos, where you report on the status or progress of some project or event;
- field or trip report memos, where you document key information about events that occurred in the field or during a trip.

Most memos today take the form of emails.

15.1. *Read and translate the Internal Office Memo.*

To: All Staff From: The Manager Date: May 27, 202_ Subject: Inappropriate use of time on Google Doodle games
Dear coworkers, It has come to my attention that many in the office have been spending time on the Google home page microgames. This memo is a reminder to use your work hours for work. According to a recent article, the estimated daily cost of people collectively playing these games instead of working is over $120 million – which is calculated based on the daily average increased time spent on the Google home page (36 seconds). If these estimates are applied to our 600 office employees, this results in a nearly $700 weekly loss. This is a conservative estimate considering the extensive discussions that occur about beating the office's current high score. The extra cost quickly adds up. Of course, we don't want you to view our organization as a place of drudgery and draconian rules. I encourage a fun and competitive environment, and I recognize that we certainly won't be profitable if you are unhappy or dissatisfied with your jobs. This is just a reminder to be careful with your use of company time. Thank you, The Senior Manager

15.2. *Fill in the gaps to make a general office memo.*

a) Clancy Brytle;
b) 10 April;
c) subject;
d) from;
e) personnel@cam.uk;
f) April 17;
g) dear collegues.

To: R&D Department (1) _____: Clancy Brytle, Personal Director Date: (2) _____ (3) _____ : Conference Participation
(4) _____, I want to inform you that on (5) _____ your department will be audited. Your questions and comments can be sent to (6) _____. Best regards, (7) _____

15.3. *Work with a group-mate to discuss the following.*

1) What is a memo and types of it?
2) What is a purpose of a memo?
3) Is there a standard format for a memo?
4) What are the five sections of a memo?
5) How do you end a memorandum?
6) How long should a memo be?

15.4. *Imagine you work in the Project Planning Department at Bauer AG, Switzerland. You've just received this memo from the General Manager.*

To: Project Planning Dept From: GM Date: Jan. 4 Subject: Aqua Warm BV
I am sure that you have read about the recent explosion at Perfect a Ltd. We have decided not to install any more Aqua Warm central – heating systems until we can be sure that they are absolutely safe. Please write and inform Aqua Warm of this. Their address is Beulingstraat 23, Amsterdam, The Netherlands. Bauer Ag

Write a memo to your company staff about a regular meeting giving the bad news mentioned above.

1) Set a date, time, purpose and brief agenda discussed.

2) Say what you are writing about.

3) Give the bad news.

UNIT 8. COMPUTERS & TECHNOLOGY

1. *Work with a group-mate to discuss the following.*

1) What does the word "computer" mean?

2) When do you think the word "computer" was coined out? What did the term refer to?

3) What does the word "to compute" mean?

4) How many generations of computers are there?

5) Computers have become an essential part of our lives and are used in different areas of our lives. What do we use them for?

6) Think about functions a modern computer can perform.

7) There're lots of abbreviations and acronyms in the computer sphere, e. g. *PC, RAM, ROM, I/O, CPU, SW, HW, ATM, VR, PDA, HMD*, AI etc. Do you know their explanation?

8) What do you look at when buying a computer?

2. *Look at the following international words and guess their meaning and check the pronunciation.*

Design, arithmetic, logical, original, familiar, calculations, computations, image, interaction, virtual reality, identification, contactless, transaction, media, artificial, mathematical, mechanical, mechanism, microprocessor, data

Part I. Text (beginning)

1. *Here are the words and word combinations you have to learn. Rewrite them and find their meaning using online translators (www.lingvolive.com, www.multitran.ru).*

To carry out, to allow, sequence, accessible, indispensable, software and hardware developers, processing, image editing, a huge impact, dispense, goods, built-in, an artificial environment, to perform operations, computer essentials, a central processing unit, peripherals, RAM, ROM, VLSI circuit, QC, to attach to, to extract, to accept, to access, random, permanently, external, internal, a socket, a circuit, a keyboard, instead of.

2. *Read the text to learn about a brief computer history.*

Text 1. Computers from past to present

A computer is basically a complex electronic machine designed to automatically carry out a sequence of arithmetic or logical operations. The word computer comes from a Latin word which means to count and the first use of the word "computer" was recorded in 1613, referring to a person who carried out calculations, or computations, and the word continued with the same meaning until the middle of the 20th century. From the end of the 19th century the word began to take on its more familiar meaning, a machine that carries out computations. In the 19th century the English mathematics professor Charles Babbage designed the Analytical Engine and it was this design that the basic framework of the computers of today are based on.

Generally speaking, computers can be classified into five generations. Each generation gave us either a new and improved computer or an improvement to the existing computer.

First generation is computers developed between 1937–1959. They consisted of large devices like the vacuum tubes. The input method of these computers was a machine language known as the 1GL (the first generation language). The physical methods of using punch cards, paper tape, and magnetic tape were used to enter data into these computers. It is said that this computer weighed 30 tons, and had 18,000 vacuum tubes which was used for processing. Examples of the first generation computers include ENIAC, EDVAC, UNIVAC, IBM-701, and IBM-650. They were large, very unreliable and limited to basic calculations. They would heat up and frequently shut down and could only be used for very basic computations and they had no operating system.

Second generation is computers developed between 1959–1965. This generation of computers used transistors instead of vacuum tubes which were more reliable. This made them far more compact than the first generation computers. The input for these computers was higher level languages like COBOL, FORTRAN etc. In these computers, primary memory was stored on the magnetic cores and magnetic tape and they used magnetic disks as secondary storage devices. Examples of the second generation computers include IBM 1620, IBM 7094, CDC 1604, CDC 3600, UNIVAC 1108. As a result, they worked on AC and therefore were faster than their predecessors.

Third generation is computers developed during the period of 1965–1971 differed from the first and the second generations simply by the fact that a new circuit element like ICs (Integrated Circuits) was used. An integrated circuit is a small device that can contain thousands and thousands of devices like transistors and other circuit elements that make up a computer. With this invention computers

became smaller, more powerful, more reliable and they are able to run many different programs at the same time. The input languages for such computers were COBOL, FORTRAN-II up to FORTRAN-IV, PASCAL, ALGOL-68, BASIC etc. Examples of the third generation computers include IBM-360 series, Honeywell-6000 series, PDP (Personal Data Processor) and IBM-370/168.

Fourth Generation of computers was between 1971–1980. These computers used the Very Large Scale Integrated (VLSI) technology. Therefore they were also known as the microprocessors. Intel was the first company to develop a microprocessor. The first "personal computer" or PC developed by IBM, belonged to this generation. VLSI circuits had almost about 5000 transistors on a very small chip and were capable of performing many high-level tasks and computations. These computers were thus very compact and thereby required a small amount of electricity to run. Examples are STAR 1000, CRAY-X-MP (Super Computer), DEC 10, PDP 11, CRAY-1. This generation of computers had the first "supercomputers" that could perform many calculations accurately. They were also used in networking and also used higher and more complicated languages like C, C+, C++, DBASE etc.

Fifth Generation is the present generation of computers and is the most advanced one. The generation began somewhere around 1981 and is the present generation of computers. In 1980 Microsoft Disk Operating System (MS-Dos) was born and in 1981 IBM introduced the personal computer (PC) for home and office use. Three years later Apple gave us the Macintosh computer with its icon driven interface and the 90s gave us Windows operating system. The methods of input include the modern high-level languages like Python, R, C#, Java etc. These are extremely reliable and employ the ULSI (the Ultra Large Scale Integration technology). These computers are at the frontiers of the modern scientific calculations and are used to develop the Artificial Intelligence or AI components that will have the ability to think for themselves. Examples include: Intel P 4, i3–i10, AMD Athlon, etc.

The Next Generation is QC (Quantum Computer). A recent invention of the XXI century is a machine that performs calculations based on the laws of quantum mechanics, which is the behavior of particles at the sub-atomic level. Quantum computers would be based on the strange principles of quantum mechanics, in which the smallest particles of light and matter can be in different places at the same time. In a quantum computer, one "qubit" – quantum bit – could be both 0 and 1 at the same time. So with three qubits of data, a quantum computer could store all eight combinations of 0 and 1 simultaneously. That means a three-qubit quantum computer could calculate eight times faster than a three-bit digital computer. Quantum computing could eventually revolutionize the way medicines are developed, financial options are priced and climate change is managed, experts say. Now, IBM, Microsoft and Amazon are working

to provide broader access to the technology by implementing quantum computing as a service in the cloud. Others are studying the implications for fields such as machine learning, to uncover new patterns in nature, and in artificial intelligence.

As a result of the various improvements to the development of the computer we have seen the computer being used in all areas of life. It is a very useful tool that will continue to experience new development as time passes. Software and hardware developers create new applications to help users perform many things from word processing and image editing to virtual reality applications.

Now computers have a huge impact on social relations. They have enabled new forms of social interaction, activities and data delivery. In banks, computers store information about the money held by each customer and enable staff to access large databases and to carry out transactions at high speed. They also control ATMs (Automatic Teller Machines), which dispense money to customers by the use of a PIN-protected card (Personal Identification Number). E-commerce has become an essential part of our living activity. Using the online banking service, clients can easily pay checks and transfer money wherever they are. The worldwide payments systems such as PayPal, Visa PayWave, MastercardPayPass, American Express, Google Wallet, Apple Pay, WebMoney, Qiwi and YandexMoney offer customers the service of contactless payments for the goods using smartphones. Smartphones let us make voice calls, send text, email people and download logos, ringtones or games. With a built-in camera you can send pictures and make video calls in face-to-face mode. Smartphones combine a telephone with web access, video, a games console, an MP3 (Media Player 3) player, a PDA (Personal Digital Assistant) and a GPS (Global Positioning System) navigation system, all in one. And HMD (Head-Mounted Display) allows us to enjoy virtual reality, the artificial environment of the latest video games.

To study well, computers help students to perform mathematical operations and improve their mathematical skills; they use application software to write essays, projects and to organize and present information. Teachers can create a virtual learning environment (VLE) for distance education such as Blackboard *(http://www.blackboard.com)*, Moodle *(http://moodle.org)* and The Bonch-Bruevich Saint-Petersburg State University of Telecommunications' E-Learning System *(http://lms.spbgut.ru)*.

3. *Say what you have learnt about the development of the computer industry. Begin your story with the phrases listed below.*

1) In the early times …

2) After that …

3) Now it is widely known that …

4) The new computer caused the sensation because …
5) In order to perform the new computer …

4. *Prepare a short summary of the text using the expressions (see Appendix 2 for annotation details).*

5. *Check your awareness about computers.*

1) In 1937 the first electronic digital computer called ABC was built by:
a) Thomas Arithmometer;
b) Jack Kilby;
c) John V. Atanasoff and Clifford Berry;
d) Alan Turing.
2) In 1943 an electronic computer named the Colossus was built for the:
a) commercial use;
b) industry;
c) individuals;
d) military.
3) The language used in ENIAC:
a) C;
b) C++;
c) 1 GL;
d) Python.
4) Which among these will have VLSI?
a) DEC 10;
b) PDP 11;
c) CRAY-1;
d) All of these.
5) _____ is credited with the invention of the Integrated Circuit or the IC chips.
a) Jack Kilby;
b) Robert Noyce;
c) Werner Jacobi;
d) Geoffrey Drummer.
6) Which of these following generations can you use Java in?
a) second;
b) third;
c) fourth;
d) fifth.
7) The ULSI technology is present in which generation of computers:
a) third;
b) first;

c) fourth;
d) fifth.
8) One of the first quantum computer models in 1981 was proposed by:
a) Jack Kilby;
b) Richard Feynman;
c) David Deutsch;
d) Yuri Manin.

Part II. Language (beginning)

6. *Fill in the blanks with the words: indispensable, variables, important concepts, a computer, evaluate, computer learning.*

1) If you want to memorize basic facts through repetition you can refer to _____.
2) A computer can only _____ whether the answer is right or wrong.
3) _____ can't find out why a student makes mistakes.
4) A computer can't explain _____ so that the student will understand them.
5) As there are too many _____ the computer can't deal with them successfully.
6) The computers are _____ in practicing simple skills.

7. *Fill in the blanks with the words: true physical limit, high technology and high speed, a continuous search, computations, the integrated circuit.*

1) _____ is in the heart of every electronic device we use at present.
2) When speaking about further development of computers we first of all speak about _____.
3) _____ is going on in laboratories to work out more perfect, reliable and high speed electronic circuits.
4) The ordinary computer does the _____ operation by operation.
5) Some researchers think that with the invention of the fifth generation computers we approach what is called _____.

8. *Complete the text using the appropriate tenses (Past Simple, Present Perfect).*

Since computers were first introduced to the public in the early 1980's, technology (change) a great deal. The first computers (be) simple machines designed for basic tasks. They (have, not) much memory and they (be, not) very powerful. Early computers were often quite expensive and customers often (pay) thousands of dollars for machines which actually (do) very little. Most computers (be) separate, individual machines used mostly as expensive typewriters or for playing games.

Times (change). Computers (become) powerful machines with very practical applications. Programmers (create) a large selection of useful programs which do everything from teaching foreign languages to bookkeeping. We are still playing video games, but today's games (become) faster, more exciting interactive adventures. Many computer users (get, also) on the Internet and (begin) communicating with other computer users around the world. We (start) to create international communities online. In short, the simple, individual machines of the past (evolve) into an international World Wide Web of knowledge.

Part III. Listening, Speaking and Writing (beginning)

9. *Explain the meaning of the following words and phrases in English:* a computer, to carry out calculations, HW/SW developers, virtual reality, contactless payments, face-to-face communication, ATM, GPS, HMD, a virtual leaning environment (VLE).

10. *Discuss the famous quotes about computers and technology in pairs. Prove your point of view using the phrases:* ***I agree with that; Yes, that is what I think to; The author (famous person) is right; Yes, but don't you think …?; True, but I think …; I see what the author (famous person) means, but …***

1) Technology is nothing. What's important is that you have a faith in people, that they're basically good and smart, and if you give them tools, they'll do wonderful things with them (*Steve Jobs)*.

2) To turn really interesting ideas and fledgling technologies into a company that can continue to innovate for years, it requires a lot of discipline (*Steve Jobs).*

3) Computers have lots of memory but no imagination (*author unknown).*

4) Man is still the most extraordinary computer of all (*John F. Kennedy).*

5) The Internet is becoming the town square for the global village of tomorrow (*Bill Gates).*

6) I think it's fair to say that personal computers have become the most empowering tool we've ever created. They're tools of communication, they're tools of creativity, and they can be shaped by their user (*Bill Gates).*

11. *Read the text to learn about computer parts and computer systems.*

Part I. Text (continued)

Text 2. Parts of a computer

If you use a desktop computer, you might already know that there isn't any single part called the "computer". A computer is really a system of many parts working together. The physical (mechanical) parts, which you can see and touch, are collectively called hardware. (Software, on the other hand, refers to the instructions, or programs, that tell the hardware what to do.) The following

illustration shows the most common hardware in a desktop computer system. Your system might look a little different, but it probably has most of these parts. A laptop computer has similar parts but combines them into a single, notebook-sized package.

A typical computer consists of two parts: hardware and software. Hardware is any electronic or mechanical part of the computer system that you can see or touch. Software is a set of instructions, called a program, which tells a computer what to do.

Software can be divided into two categories:

1) system software, which includes operating systems, programming software and system utilities;

2) application software, which comprises programs that let you do specific tasks (e. g. graphics, email).

The CPU, main memory and peripherals constitute what is known as *hardware* – the physical parts (Fig. 1).

Fig. 1

The system unit is the core of a computer system (Fig. 2).

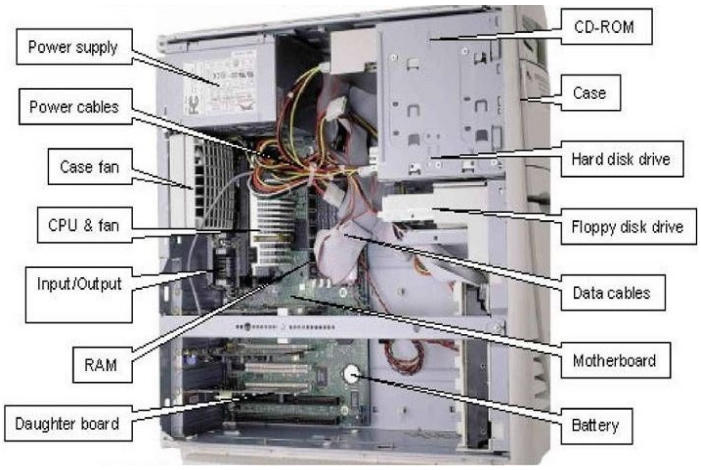


Fig. 2

Usually it's a rectangular box (also called *case/tower/chassis*) placed on or underneath your desk. Inside this box are many electronic components that process information. The most important of these components is the central processing unit (CPU), or microprocessor, which acts as the "brain" of your computer.

So, there are three basic *hardware* sections.

- A central processing unit (CPU), also called a central processor or main processor is a microprocessor chip which processes data and coordinates the activities of all the other units. The control unit, the arithmetic-logic unit and the registers are the basic parts of the CPU. Thus, it performs basic arithmetic, logic, controlling, and input/output (I/O) operations specified by the instructions. All modern CPUs are contained on a single chip. Each CPU chip has a set of pins, through which all its communication with the outside world must take place.
- The main memory holds the instructions and data which are being processed by the CPU. The RAM and the ROM make up the main memory. RAM (random access memory) and ROM (read only memory).
- Peripherals are the physical units attached to the computer. Peripherals are classified into three types: input/output (I/O) and storage devices. Line printers are output devices because they perform only output operations. Terminals and storage devices are input/output devices because they perform both input and output operations. *Input devices* let us enter data and commands (e. g. the keyboard and the mouse). *Output devices* let us extract the results (e. g. the monitor and the printer). *Storage devices* are used to store information permanently (e. g. hard disks and DVD-RW drives, USB drives). Disk drives are used to read and write data on disks. Digital data storage media generally fall into one of five categories: magnetic storage devices (tapes, diskette, floppy disk or FD), optical storage devices (CD, DVD (digital versatile disc) and Blu-ray disc (BD), flash memory devices (USB, also known as a thumb drive, pen drive, flash-drive, memory stick, jump drive), online/cloud storage, and paper storage. Flash memory is generally more efficient and reliable than optical media, being smaller, faster, and possessing much greater storage capacity, as well as being more durable due to a lack of moving parts. A solid state drive uses flash memory to store data and is sometimes used in devices such as netbooks, laptop, and desktop computers instead of a traditional hard disk drive. The advantages of an SSD, MicroSD card over a HDD include a faster read/write speed, noiseless operation, greater reliability, and lower power consumption.

At the back of a computer there are ports *i*nto which we can plug *external devices* (e. g. a scanner, a modem, etc.). They allow communication between the computer and the devices. There are 4 functions of a computer:

1) input – we enter data with input devices;

2) output – we can see the result on the screen or in printed form;

3) storage – we keep data and programs in memory systems where they are available for processing;

4) processing – the data is manipulated according to program instructions.

Thus, a computer system is a collection of components that work together to process data. The purpose of a computer system is to make it as easy as possible for you to use a computer to solve problems. A functioning computer system combines hardware elements with software elements.

System software is an organized set of supplied programs that effectively transform the system hardware components into usable tools. These programs include operations, functions, and routines that make it easier for you to use the hardware to solve problems and produce results.

For example, some system programs store and retrieve data among the various peripheral devices. Others perform difficult or lengthy mathematical calculations. Some programs allow you to create, edit, and process application programs of your own.

System software always includes an operating system, which is the "intelligence" of the computer system. Usually the system software includes one or several language processors.

A *computer system* comprises the following (Fig. 3).

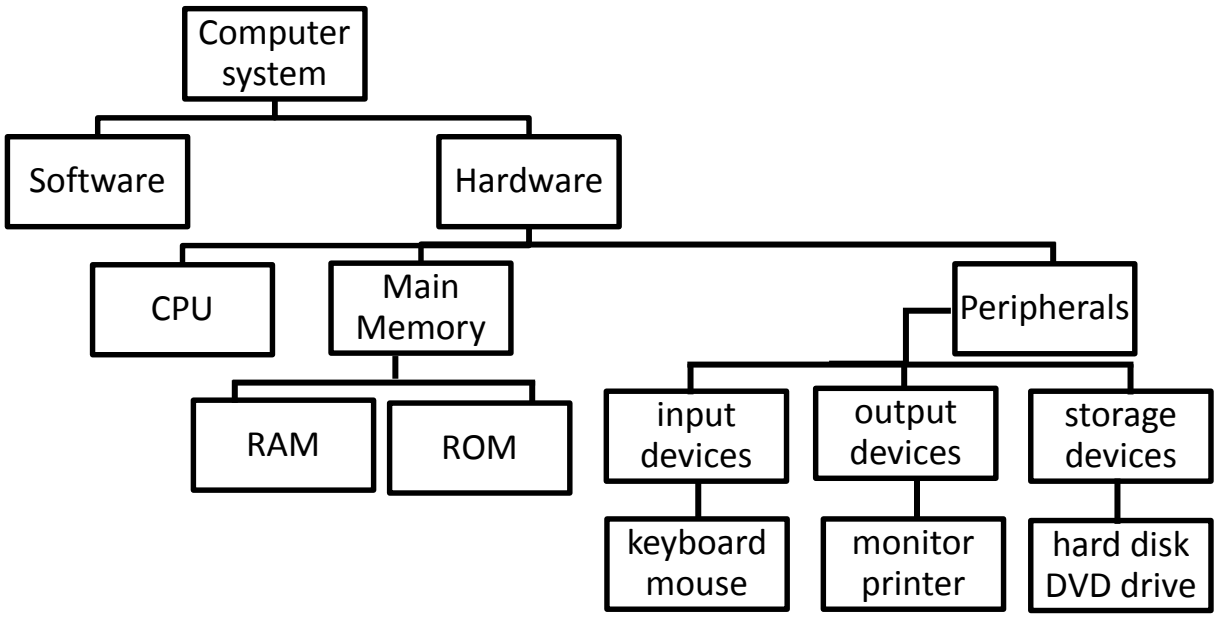


Fig. 3

There are different kinds of computers. Some do only one job over and over again. These are special-purpose computers. But there are some computers that can do many different jobs. They are called general-purpose computers. These are the "big brains" that solve the most difficult problems of science. They answer questions about rockets and planes, bridges and ships – long before these things are even built. Computers help our space program, our business and industry, medicine and education. They are powerful tools which help to change our life and the world around us.

12. *Answer the questions.*

1) What is inside a system unit?
2) What does the acronym CPU stand for?
3) What are the categories/types of computers?
4) What is hardware and what is software?
5) What do the acronyms ROM and RAM stand for?
6) What are storage media?
7) What do the peripherals mean?
8) How many functions of a computer do you know?
9) What is the difference between input and output?
10) What is the difference between data and information?

13. *Prepare a short summary of the text using the expressions (see Appendix 2 for annotation details).*

14. *Match the words on the left with the examples/definitions on the right.*

1. Software	a) the memory available for temporary use on a computer
2. Modem	b) an address where you can find information, e. g. about a company
3. Scanner	c) programs you use on your computer
4. Spreadsheet	d) for example, a computer, a printer, a screen
5. Website	e) it makes it possible for one computer to communicate with another
6. Virus	f) a unit of measurement for storing information
7. Ram	g) you can use it to transfer pictures to your computer
8. Hardware	h) a program that destroys data and damages computers
9. Hard disc	i) a series of linked electronic addresses all round the world
10. Megabyte	j) a program for doing mathematical calculations
11. The Web	k) the place in your computer where information is stored
12. Port	l) a visual symbol used in a menu instead of natural language
13. Icon	m) a very tiny piece of silicon carrying a complex electrical circuit
14. Microchip	n) any socket into which a peripheral device may be connected
15. Modem	o) a device that converts data so that it can travel over the Internet

Part II. Language (continued)

15. *Complete the sentences using the appropriate forms.*

1) One of the functions of the case (to be) to keep electromagnetic emissions inside when you power up the computer.
2) The function of each key (to be) described in the instruction manual.
3) Why it (to be) better to use a mouse pad?
4) Text characters and graphics (to be) displayed on the monitor.
5) Number and size of pixels (to affect) the sharpness of the picture.

6) Screen savers (to help) to reduce wear on the screen.

7) Quite often the hard drive (to be) called drive C.

8) Some programs (to allow) you to create, edit, and process application programs of your own.

16. *Fill in the blanks with:* to format, to reduce eye strain, specialized keys, to plug earphones, resolution, data, to press the Eject button.

1) If you want to listen to a music CD you can _____ into the jack.

2) When you want to operate the drive, you must _____ to open the tray.

3) Hard drives usually contain a lot of _____.

4) Before placing a brand new diskette into the drive you have to _____ it first.

5) To _____ turn the monitor away from the windows and bright lights.

6) _____ depends on the number of pixels.

7) A keyboard has got many _____.

17. *Translate into Russian.*

1) Don't remove the case's cover unless you need to do something inside the unit, and always replace the cover when you are done.

2) With a keyboard, you type instructions and commands for the computer, and information to be processed and stored.

3) You will see the arrow on your screen moving in unison.

4) The pointer moves dragging the element.

5) The image that you see is made up of tiny dots called pixels.

6) Thumb drives provide a way to pass files to and from the hard drive or to and from another computer.

18. *Translate into English.*

1. Для уменьшения нагрузки на глаза пользуйтесь компьютером в комнате с ровным освещением. 2. Корпус с его содержимым называется системным блоком. 3. Именно монитор позволяет вам видеть результат работы, проходящий внутри системного блока. 4. Мышь работает благодаря скольжению по ровной поверхности. 5. Преимущества твердотельного накопителя включают в себя: более высокую скорость чтения и записи, бесшумную работу, большую надежность и более низкое энергопотребление.

Part III. Listening, Speaking and Writing (continued)

19. *Explain the meaning of the following words and phrases in English:* CPU, RAM, ROM, SSD, output, input, storage, processing, hardware and software.

20. *Improve your knowledge about parts of a computer and computer accessories completing multiple choice quizzes, word search puzzles, drag and drop practice quiz, vocabulary matching and spelling* quiz here: *http://www.esolcourses.com/topics/computers.html.*

21. *Read the text to learn about computer systems from mainframes to wearable computers.*

Part I. Text (ending)

Text 3. Types of computer systems

There are three major types of computer classifications: size, functionality and data handling. Classification of computers in relation to size divides computers into four main categories: supercomputers, mainframe computers, minicomputers and microcomputers.

A supercomputer is extremely powerful and is capable of performing hundreds of millions of instructions per second. It can be used for very complex tasks and intense numerical calculations like nuclear simulation, weather forecasting and fluid dynamics. These computers are extremely expensive, and are generally used by educational or scientific institutions, rather than individual users.

A mainframe is a powerful computer which is capable of processing large amounts of data, often enabling many people to use it, and to carry out many tasks, at the same time. A network of smaller computers or terminals is used to access the files and programs on the mainframe. They are used for large-scale computing purposes in banks, big business buildings, universities and government offices.

Minicomputers, also known as mid-range computers, refer to a group of multi-user computers which are always in the middle range of systems on computing spectrum. A smaller computer in a network connected to a mainframe, or other more powerful computer, is often called *a workstation*. A workstation

may, however, also be a relatively powerful computer, usually with good graphics capabilities, that may be either attached to a network or used as a standalone machine. This type of computer can only work when it is connected to a network and is called a dumb terminal.

The microcomputers, sometimes referred to as the personal computers, are the most common types of computers used by people. They include in-car built computers, game consoles and desktop computers. Additionally, under the category of microcomputers, there are smaller computers, including laptops, mobile phones, tablets, programmable calculators, handheld game consoles, notebooks, smartphones and smart books.

A desktop PC has its own processing unit (CPU), monitor and keyboard. It is used as a personal computer in the home or as a workstation for group work. A desktop is not designed to be portable, which means it does not have an independent power supply, and is too big and heavy to be carried easily. Some people use the term "desktop" to refer to the case which sits under the computer screen on a desk, distinguishing it from a tower case (a vertical case), which stands vertically next to the screen or on the floor. The vast majority of modern PCs are tower case.

A laptop (also called a notebook) is a lightweight computer that you can transport easily. It can work as fast as a desktop PC, with similar processors, memory capacity, and disk drives, but it is portable and has a smaller screen. Modern notebooks have a TFT (Thin Film Transistor) screen that produces very sharp images. Instead of a mouse, they have a touchpad built into the keyboard – a sensitive pad that you can touch to move the pointer on the screen. They offer a lot of connectivity options: USB (Universal Serial Bus) ports for connecting peripherals, slots for memory cards, etc. They come with battery packs, which let you use the computer when there are no electrical outlets available.

A netbook is like a laptop, but is smaller and the memory is not so big.

A tablet PC looks like a book, with an LCD (Liquid Crystal Display) screen on which you can write using a special digital pen. You can fold and rotate the screen 180 degrees. Your handwriting can be recognized and converted into editable text. You can also type at the detached keyboard or use voice recognition. It's mobile and versatile.

A handheld computer, usually called a palmtop or *a PDA* (Personal Digital Assistant), is small enough to fit into the user's hand. The term PDA refers to a wide variety of handheld devices, palmtops and pocket PCs. Popular in the 1990s and early 2000s, personal digital assistants (PDAs) were the precursors to smartphones. Most PDAs had a small physical keyboard, and some had an electronically sensitive pad on which handwriting could be received. Original uses for a personal digital assistant included schedule and address book storage and

retrieval and note-entering. However, many types of applications were written for PDAs. In the 2010s, the technology industry recycled the term "personal digital assistant". The term now more commonly refers to software that recognizes a user's voice and uses artificial intelligence to respond to queries. Examples of this type of personal digital assistant include Apple's Siri, Microsoft's Cortana, Amazon's Alexa.

A wearable computer runs on batteries and is worn on the user's body, e. g. on a belt, backpack or vest; it is designed for mobile or hands-free operation. Some devices are equipped with a wireless modem, a small keyboard and a screen; others are voice-activated and can access email or voice mail. *Embedded computers* are found inside other machines such as fridges, cars and ticket machines. They receive input data from the host machine and use this to send output data back to the machine. An example of this might be an embedded computer in a car that constantly checks tire pressure and tells the driver when the pressure is below the safety limit. Embedded computers are probably the smallest type of the computers. Different-sized computers offer different services. A computer can be as big as an entire room or as small as a microcontroller found in mobiles and embedded systems.

22. *Answer the questions.*

1) How many computer systems do you know?
2) What is a mainframe?
3) What is a laptop?
4) What is the difference between wearable computers and smartphones?
5) What is the most convenient device (gadget) on the move?
6) What are the examples of an embedded computer?

23. *Here are the words and word combinations you have to learn:*

a mainframe, to be capable of, multi-tasking, capabilities, standalone, a dumb terminal, a power supply, a tower case, a desktop PC, a battery pack, a laptop, a palmtop, a tablet PC, handheld, to convert, detached parts, voice recognition, feature, a wearable computer, to be equipped with, embedded, a host, a hub, to install, firewall, a recycle bin, to delete, to reboot, to remove, to insert, a pop-up menu, extremely, complex, a purpose, majority, liquid, versatile, to recognize, an item, via, pressure.

24. *Prepare a short summary of the text using the expressions (see Appendix 2 for annotation details).*

25. *Match the terms with their definitions.*

1) a mainframe	a) a hand-held computer which can be used as a telephone, a web explorer and a personal organizer
2) a desktop computer	b) a typical computer found in many businesses and popular for home use
3) a laptop	c) a large computer used for intensive data processing and often linked to many terminals
4) a tablet	d) a small computer that fits into items of clothing
5) PDA	e) a portable computer that can be closed up like a briefcase, but it can be as powerful as a desktop PC
6) a wearable computer	f) a full-function PC, though it only weighs about 1.2 kg – you can go to a meeting and write your notes on it, like a paper notepad; its screen mode can be changed from portrait to landscape

Part II. Language (ending)

26. *Rewrite the following active sentences into passive voice.*

1. We use different Internet browsers. 2. My boss wrote an e-mail of confirmation. 3. Someone uses my computer. 4. In case of doubts you must contact the Internet Service Provider. 5. You can download new updates from the Internet. 6. In order to install this plug in you must disable the antivirus. 7. Before installation you should plug the power cord. 8. You must enable the "Automatic Detection" option.

27. *Make the sentences in Active and Passive Voices using the words below as follows:*

- *I often use my desktop computer to store information.*
- *A desktop is often used to store information.*

Always	laptop	to	store information
Often/frequently	desktop		type/write letters
Usually	PDA		send e-mails
Sometimes normally	tablet		surf the Internet
Hardly ever	mainframe		download files/applications, etc.
Seldom			design
Rarely			listen to music
Never			retouch photos

28. *Write the sentences in Present Perfect.*

1. I (fix) the computer. 2. Jimmy (buy) the most expensive audio card. 3. I (run) scandisk. 4. Sue and Walter (format) their laptops. 5. He (defragment) my local hard drive. 6. John and I (create) a new user account for you. 7. I (remove) the Recycle Bin icon from the desktop. 8. When I (click) OK, a pop-up menu (appear).

29. *Summarize your knowledge on the System of Tenses. Translate the sentences into Russian paying attention to Tenses.*

1) Everybody seems to be having problems with computers these days.

2) In 1822 Charles Babbage created the first mechanical calculator.

3) After school Gates went on studying at Harvard University.

4) The National Physical Laboratory is now conducting experiments aimed to recognize human speech.

5) Instructions will tell the hardware what to do and will tell the user what it has done.

6) By 1880 manufacturing technology had improved to the point that new machines could be produced.

7) In some years IBM publication department will be fulfilling 100 % translation demands via machines.

8) For many years, universities and colleges have been looking for ways of offering courses to students living far from classes.

9) By the beginning of the network age Microsoft Corporation had been selling software for individual PCs.

30. *Put the verbs in the brackets into the correct forms.*

1) Programming already (to become) a very important branch of national economy. For example, some experts (to work) now on a computer program for agriculture.

2) In the 1980s the production of microcomputers (to double), the production of microprocessors increased five times. This year we (to do) our best to meet requirements of the day.

3) Our primary task (to be) to advance our technology and increase the manufacture of computers. We certainly (to solve) this problem.

4) The Elbrus 2 (to become) the next in the line of supercomputers. The engineers (to work) for three years before it was placed at the disposal of scientists.

5) The first computers (to fill) a large room with their electronics. Air-conditioning was poor at that time and computers (to get) so hot during their work that the operators (to have) to dress in T-shirts and tennis shoes.

31. *Use Complex Subject:*

1. (Известно, что) A supercomputer is extremely powerful and capable of performing hundreds of millions of instructions per second. 2. (Ожидается, что) Handhelds access the Internet via Wi-Fi or Bluetooth technology. 3. (Сообщают, что) Banks, big companies and universities use mainframes for large-scale computing purposes. 4. (Говорят, что) Laptops offer a lot of connectivity options. 5. (Известно, что) A netbook is like a laptop, but is smaller and the memory is not so big. 6. (Ожидается, что) Handwriting is recognized and converted into editable text.

Part III. Listening, Speaking and Writing (ending)

32. *Explain the meaning of the following words and phrases in English:* a mainframe, a workstation, standalone, portable, a desktop PC, a laptop, a netbook, a tablet PC, a handheld, a wearable computer, an embedded computer, a host, a hub, a firewall, startup, a pop-up menu, to reboot.

33. *Read six pieces of news extracted from a computer journal and match them with the headings.*

Computer News	Article Headings
1. Researchers have designed, built and tested a handgun that will fire only when its component circuitry and software recognize the grip of an authorized shooter	a) Computer Scientists Develop New Kid-friendly Programming Language
2. Computer engineers at Northwestern University and NEC Laboratories America, Inc. have developed technology that doubles the usable memory on cell phones and other embedded systems without any changes to hardware or applications	b) Online Game Helps People Recognize Internet Scams
3. Computer scientists have found a way to make computer programming visual. Instead of using numbers, letters, and punctuation like other programming languages, Alice uses three dimensional figures placed in a storyline. Users select from a gallery of characters and backgrounds, and then select the character's movements through a pull downmenu	c) Computer Engineers Develop Clothes that Sense and Interpret Movements
4. As cell phones, PDAs, and other wireless devices become more sophisticated, hackers are starting to spread viruses that can infect them. Software engineers have developed an application that allows a PC to scan the memory of a mobile device and eliminate malicious software	d) Computerized Pistol Engineered to Recognize the Grip of its Owner
5. New "electronic textiles" could help monitor the activities of patients with chronic illnesses. Computer engineers have developed pants with sensors embedded in the fabric that measure speed, rotation and flexing, and send wireless signals to a computer. Researchers plan to integrate computers into shirts	e) Software Engineers Allow PCs to Scan Mobile Devices for Viruses
6. Carnegie Mellon University computer scientists have developed an interactive, online game featuring a little fish named Phil that can teach people how to better recognize and avoid email "phishing" and other Internet scams. Play the game at: http://cups.cs.cmu.edu/antiphishing_phil/	f) Cell Phone Memory Doubled Through Software Alone

A. Match the news extract number with the uses of the inventions listed below.

Applications of the different inventions	Extract №
This invention will be used to detect and delete viruses from mobile devices	
This invention will be used to fight the illegal use of arms	
This invention will be used for people with chronic illnesses.	
This invention will be used to increase the memory of mobile devices	
This invention will be used to prevent Internet frauds	
This invention will be used for computer programming	

B. Make questions about the words in bold.

1. Computer scientists have found **a way to make computer programming visual.** 2. **Software engineers** have developed an application that allows a PC to scan the memory of a mobile device. 3. Computer engineers have developed **pants with sensors embedded in the fabric**. 4. Researchers plan **to integrate computers into shirts, hats and gloves**. 5. Alice uses **three dimensional figures placed in a storyline**. 6. Hackers are starting to spread **viruses that can infect them**.

C. Find the words and phrases in the text that mean:

1) proved (extract 1) _____;
2) shoot (1) _____;
3) invented and built (2) _____;
4) propagate or circulate (4) _____;
5) permit (4) _____;
6) observe or supervise (5) _____
7) estimate or determine (5) _____;
8) evade, keep away from (6) _____.

34. *Improve your knowledge about computers here:*
https://www.engvid.com/technology-vocabulary/#quiz,
http://blocs.xtec.cat/itenglish/,
http://www.esolcourses.com/topics/computers.html.

35. *Write a report about the most modern types of computers, or a technology you would like to invent, or a computer service you would like to provide. Describe it and explain what it will be used for (see Appendix 2).*

Part IV. Business types of documents

36. Technical writing includes a wide range of **documents**. They include instructions, reviews, reports, newsletters, presentations, web pages, brochures, proposals, letters, fliers, graphics, memos, press releases, handbooks, specifications, installation guides, and agendas etc.

36.1. *Write and remember the types of written business communication to the correct definition.*

1. Agenda	a) it tells people (usually people inside the company) about the life of the organization
2. Annual report	b) a report of a meeting
3. Contract	c) a letter sent at the same time to number of customers or possible customers, for example about a new product or service
4. Directory	d) a paper which you fill in when you want to buy something from a company
5. Fax	e) an internal message, usually from one person to a group of people
6. In-house magazine	f) a list of things to discuss at a meeting
7. Invoice	g) it tells people (usually people outside the company) about the life of the organization
8. Mailshot	h) it gives information about the company's products
9. Memo	i) it tells you how much products cost
10. Minutes	j) a book with lists of telephone numbers or other information
11. Newsletter	k) the paper which tells you how much you must pay when you buy something from a company
12. Order form	l) a document which tells you about the company's performance over the year, including the accounts for the year
13. Price list	m) a legal agreement between two parties
14. Sales brochure	n) a message sent by facsimile machine
15. Sales report	o) it tells you how a piece of equipment works
16. User manual	p) it contains figures on how much money people have spent on the company's products in, for example, a month

36.2. *Match the documents extracts with the correct terms.*

a) You can use toolbars for quick access to commonly used commands and tools. When you first start the software, the Standard and Formatting toolbars are displayed just below the menu bar and the Drawing toolbar is displayed vertically on the left side of the window ...	1) agenda
b) Dear Ms Jackson, With reference to your recent call, please note that the goods you wish to order are currently out of stock ...	2) order form
c) To: All employees in H section From: HR Subject: restrooms facilities for H section staff Date: 28 July It has recently come to my notice that a number of employees in H section ...	3) minutes
d) *Power enterprises uk celebrates its move to frisbee house* Power Enterprises UK has just celebrated its move to new premises at Frisbee House, a beautiful listed building at the heart of the historic centre of Bristol and just a few minutes' walk from ...	4) mail shot

Окончание таблицы

e) 1–3 ... 4. It was agreed that departmental running costs must be cut by 10 %. Senior manager will present his proposal at the next meeting. 5. Martha's presentation ceremony will be on 9 November. Everyone will attend. 6. The next departmental meeting will be on ...	5) invoice
f) "… All prices are inclusive of VAT, postage and packing. If you wish to pay by Visa or American Express card, please complete the form at the bottom of the page. If you are not entirely satisfied with your goods, we shall be happy to ..."	6) annual report
g) "… This has been quite a good year for Flin&Co. Although the general economic situation was very difficult, sales increased by 7.3 % and net income by 12.7 % At the same time, we reduced our workforce by almost 15 % and continued to increase the range of products ..."	7) sales report
h) 1. Minutes of the last meeting and matters arising. 2. The new device launch. 3. Problems in H section ...	8) newsletter
i) "… Figures for the Western region are generally good although the seasonal fall in sales of the XJ31 is stronger than usual and a major effort will be needed to bring sales up to target by the end of the quarter. Both Central and Northern have done well across the whole range despite ..."	9) memo
j) 115 units of XJ45 at $23.50 per unit $2,702.50 Less 15 % discount $405.37 Plus VAT at 17.5 % $402.00 Plus postage and packing $360.05 Total $3,059.18 *Payment within 30 days of issue*	10) letter
k) Dear Ms Bazallie, Have you ever dreamed of owning your very own holiday home in an exotic location? I am writing to tell you that thanks to Zangief Timeshare Inc., these dreams could become a reality!	11) contract
l) 6.1. The SUPPLIER is entitled to modify the material ordered before delivery, provided such modifications do not affect the prices, delivery dates, quality performances or mechanical characteristics. 2) 6.2. In all other cases, the purchaser's prior written permission is required to perform changes to the material ...	12) user's guide

UNIT 9. CONVERGENCE & MOBILITY IN TELECOMS AND IT

1. *Work with a group-mate to discuss the following.*

1) A modern smart phone is a combination of many different devices. What devices does it replace?

2) Have you ever heard of a notion "convergence"?

3) Here are the definitions of the term “convergence”. Which one is the most appropriate to your mind?

A. Technological convergence is the tendency for different technological systems to evolve toward performing similar tasks.

B. Convergence refers to previously separate technologies such as voice (and telephony features), data (and productivity applications) and video that now share resources and interact with each other.

C. Digital convergence is defined more specifically as the coming together of telecommunications, computing and broadcasting into a single digital bit-stream.

Part I. Text

1. *Here are the words and word combinations you have to learn. Rewrite them and find their meaning using online translators (www.lingvolive.com, www.multitran.ru).*

Apply, arise, artificial intelligence, connection, converge, convergence, convergent, deliver, distinct, emerge, emergence, explore, fixed and mobile operators, historical roots, inspire, joined product, market, multi-level, multiple, permit, rise, service, single, singularity, surround, trace back.

2. *Read the text and translate the text.*

Text 1. Telecommunications convergence

Communication networks were designed to carry different types of information independently. Radio was designed for audio, and televisions were designed for video. Convergence of telecommunication technology permits the manipulation of all forms of information, voice, data, and video.

The rise of digital communication in the late 20th century has made it possible for media organizations (or individuals) to deliver text, audio, and video material over the same wired, wireless, or fiber-optic connections. At the same time, it inspired some media organizations to explore multimedia delivery of information. Today, we are surrounded by a multi-level convergent media world where all modes of communication and information are continually reforming, changing the way we create, consume, learn and interact with each other. Specifically, this involves the converging of previously distinct media such as telephony and data communications into common interfaces on single devices, such as smart phones that can make phone calls and search the web.

The historical roots of convergence can be traced back to the emergence of mobile telephony and the Internet, when fixed and mobile telephony began to be offered by operators as joined products.

The basis of computer networks is also included in this topic: many different operating systems are able to communicate via different protocols. This could be the first step to artificial intelligence networks on the Internet eventually leading to a powerful superintelligence via a technological singularity.

Convergence services, such as VoIP, IPTV, Mobile TV, Smart TV etc., replace the old technologies and are a threat to the current service providers. IP-based convergence is inevitable and will result in new service and new demand in the market.

Voice over IP (**VoIP**) is a methodology and group of technologies for the delivery of voice communications and multimedia sessions over Internet Protocol (IP) networks, such as the Internet.

Internet Protocol television (**IPTV**) is a system through which television services are delivered using the Internet protocol suite over a packet-switched network such as a LAN or the Internet, instead of being delivered through traditional terrestrial, satellite signal, and cable television formats.

Video on demand (**VOD**) or audio and video on demand (AVOD) are systems which allow users to select and watch/listen to video or audio content when they choose to, rather than having to watch at a specific broadcast time. IPTV technology is often used to bring video on demand to televisions and personal computers.

Fixed–mobile convergence (**FMC**) is a change in telecommunications that removes differences between fixed and mobile networks. FMC is a transition point in the telecommunications industry that will finally remove the distinctions between fixed and mobile networks by creating seamless services using a combination of fixed broadband and local access wireless technologies to meet their needs in homes, offices, other buildings and on the go.

Mobile to mobile convergence (**MMC**) is a term to describe a technology used in modern computing and telephony. This technology uses dual mode (cellular network and Wi-Fi) phones with a special software client and an application server to connect voice calls and business applications via a VoWLAN and/or through a cellular service.

3. *True, false or no information? Find the sentences in the text that support your point of view.*

1) Convergence is historically connected with the marketing activities of telephone companies.

2) The once-separate worlds of media, entertainment and communications have converged.

3) From the very beginning fixed and mobile telephony were offered by operators as joined products.

4) MMC removes differences between fixed and mobile networks.

5) To effectively exploit the new opportunities in the market of telecommunications, service providers must examine current business models.

6) IPTV technology is used for VOD.

7) Telecommunications convergence or network convergence are terms describing fixed phones networks.

4. *Answer the questions.*

1) How did old media and networks carry information?

2) When did the term convergence emerge?

3) What role did telephone operators play in the emergence of convergent services?

4) How can text, audio, and video material be delivered nowadays?

5) Is a smart phone an example of convergence? Why?

6) What can be considered as the first step to artificial intelligence networks?

5. *Continue the sentence.*

1) Digital convergence refers to ___.

a) the way we create, consume, learn and interact with each other;

b) emerging telecommunications technologies and network architecture;

c) previously separate technologies that now interact with each other.

2) Technological convergence is ___.

a) the first step to artificial intelligence networks;

b) the tendency for different technological systems to evolve toward performing similar tasks;

c) television and radio broadcasting network.

3) Voice over IP can be described as ___.

a) a technology using dual mode (cellular network and Wi-Fi) phones;

b) a group of technologies for the delivery of voice communications and multimedia sessions over Internet Protocol (IP) networks;

c) a system through which television services are delivered.

6. *Make a plan of the text. Retell the text according to the plan.*

7. *Prepare a short summary of the text using the expressions (see Appendix 2 for annotation details).*

8. *Discuss the theme "*What is a mobile device?"

A mobile device is basically any handheld computer. It is designed to be extremely portable, often fitting in the palm of your hand or in your pocket. Some mobile devices are more powerful, and they allow you to do many of the same things you can do with a desktop or laptop computer.

9. *Look at the list of devices. Which of them are mobile and which are not? Explain your choice using ex. 8.*

Desktop computer, TV-set, smartphone, camera Canon, e-reader, router, tablet computer, laptop computer, monitor, smart watch.

10. *Write/tell what you can do on the move. Share your own ideas.*

On the move I can do many things. For example, I can … on the move using …

(Make/answer phone calls, send and receive e-mails, listen to music, read books, check public transportation schedule, search Web, take photos, buy something, watch videos).

11. *Read the text to learn some more information about mobile devices. Here are the words and word combinations you have to learn:*

allotment, backlit, boot up, cell service, consume, convenience, data plan, durable, e-paper display, e-reader, eye strain, feature, fit, free update, handheld computer, LCD, mobile OS, monthly fee, mouse pointer, palm, portable, purchase, refresh rate, smartphone, solid-state drive, tablet computer, touchpad, touch-sensitive, versatile, virtual keyboard, washed out.

Text 2. Mobile Devices

Tablet computers

Like laptops, tablet computers are designed to be portable. However, they provide a different computing experience. The most obvious difference is that tablet computers don't have keyboards or touchpads. Instead, the entire screen is touch-sensitive, allowing you to type on a virtual keyboard and use your finger as a mouse pointer.

Tablet computers are mostly designed for consuming media, and they are optimized for tasks like web browsing, watching videos, reading e-books, and playing games. For many people, a "regular" computer like a desktop or laptop is still needed in order to use some programs. However, the convenience of a tablet computer means it may be ideal as a second computer. Below are some of the main features you can expect with a tablet computer:

Mobile OS: different types of tablets use different operating systems. Examples include Android and iOS. You'll usually be able to download free updates to your OS as they become available.

Solid-state drives: tablet computers usually use solid-state drives, which allow the computer to boot up and open programs more quickly. They are also more durable than hard disk drives.

Wi-Fi and 3G/4G: because they are optimized for Internet use, tablet computers have built-in Wi-Fi. For a monthly fee, you can also purchase a 3G or 4G data plan, allowing you to access the Internet from almost anywhere.

Bluetooth: in order to save space, tablet computers have very few ports. If you want to use an external keyboard or other peripherals, they will often use a wireless Bluetooth connection.

E-book readers

E-book readers (also called e-readers) are similar to tablet computers, except they are mainly designed for reading **e-books** (digital, downloadable books). Examples include the Amazon Kindle and Barnes & Noble Nook.

E-book readers have either an e-paper display or an LCD.

E-paper: short for electronic paper, this type of display can usually only display in black and white. It is designed to look a lot like an actual page in a book. Unlike an LCD, it is not backlit, so the text stays readable even outdoors in full sun. Many people consider e-paper to be more pleasant to read because it causes less eye strain. However, it generally can't be used for videos or other applications because the refresh rate is too low.

LCD: this is the same type of screen found on tablet computers and laptops. It's more versatile than e-paper, but it's often more difficult to view in bright sunlight, as the image becomes washed out. Since an LCD screen can display colors, this type of e-reader is better for viewing magazines or books with photos. Many LCD e-readers (such as the Nook Color) are basically tablet computers, as they can perform many different tasks in addition to displaying e-books.

You don't need an e-reader to read an e-book. E-books can usually be read on tablet computers, smartphones, laptops, and desktops.

Smartphones

A smartphone is a powerful mobile phone that is designed to run a variety of applications in addition to providing phone service. Smartphones are basically small tablet computers, and they can be used for web browsing, watching videos, reading e-books, playing games, and more.

Smartphones use touch screens and operating systems similar to those used by tablet computers. Many of them use a virtual keyboard, but others have a physical keyboard, which allows the entire screen to be used for display purposes.

Internet access is an important feature of smartphones. Generally, you will need to purchase a 3G or 4G data plan in addition to normal cell service. Smartphones can also connect to Wi-Fi when it is available; this allows you to use the Internet without using up your monthly data allotment.

A personal digital assistant (PDA) is a mobile device that is used for managing phone numbers, addresses, calendars, and other information. Before smartphones existed, a PDA was usually a separate device. Today, smartphones combine the functionality of a PDA and a mobile phone.

12. *True, false or no information? Find the sentences in the text that support your point of view.*

1) All e-book readers can have only an LCD display.

2) Smartphones and small tablet computers are basically different devices.

3) Tablet computers differ from laptops because they normally don't have keyboards or touchpads.

4) A GPS navigator is nowadays a part of any smartphone.

5) If you have a computer, you can read an e-book.

6) With solid-state drives, tablet computers work quicker and longer.

7) LCDs are used in a wide range of applications including computer monitors, televisions, instrument panels, aircraft cockpit displays, and signage.

8) Tablet computers are optimized for producing texts.

13. *Answer the questions.*

1) What portable electronic devices are mentioned in the text?

2) Which of them are described?

3) How do tablet computers differ from laptops?

4) What tasks are tablet computers optimized for?

5) What features do tablet computers possess?

6) What feature is necessary to use external devices with a tablet computer?

7) What examples of e-books do you know?

8) Which display would you prefer: an e-paper one or an LCD? Why?

9) What devices are combined in a smartphone?

14. *Continue the sentence.*

1) Many LCD e-readers _____.

a) combine the functionality of a PDA and a mobile phone;

b) can perform many different tasks in addition to displaying e-books;

c) often use a wireless Bluetooth connection.

2) An e-paper display _____.

a) was usually a separate device;

b) is still needed in order to use some programs;

c) is designed to look a lot like an actual page in a book.

3) The entire screen of a tablet computer allows you _____.

a) to read books even outdoors in full sun;

b) to use your finger as a mouse pointer;

c) to purchase a 3G or 4G data plan in addition to normal cell service.

4) An LCD screen reader _____.

a) is better for viewing magazines;

b) causes less eye strain;

c) is used for managing phone numbers, addresses, calendars, and other information.

5) Tablet computers have _____.

a) an external keyboard or other peripherals;

b) an e-paper display;

c) built-in Wi-Fi.

15. *Make a plan of the text and prepare a short summary of the text using the expressions (see Appendix 2 for annotation details).*

Part II. Language

16. *Use the correct form of the word.*

1) The tendency for different technological systems to perform similar tasks is called _____ (converge, convergent, convergence).

2) Video on demand is an example of _____ services (converge, convergent, convergence).

3) Distinct media such as telephony and data communications _____ into common interfaces on single devices (converge, convergent, convergence).

4) VoIP is a very popular _____ offered by many companies (service, serviced).

5) Our fixed phone line is _____ by Dom.ru (service, serviced).

17. *Match the words to their meanings.*

1. Surround	a) give somebody the desire, confidence or enthusiasm to do smth well
2. Singularity	b) be all around something
3. Emergence	c) the state, fact etc. of being singular
4. Trace back	d) become known
5. Permit	e) the appearance of new things

18. *Match the terms to their definitions.*

1. Artificial intelligence	a) multiple things created by a single production process at the same time
2. Media	b) an area of study concerned with making computers copy human behavior
3. Convergence	c) the main means of mass communication, such as broadcasting, the Internet etc.
4. Singularity	d) a point at which a function takes an infinite value
5. Joint products	e) the tendency for different technological systems to evolve toward performing similar tasks

19. *Find English equivalents.*

Выполнять схожие задачи, основные особенности, сети были разработаны для, предлагать продукты, продавать продукты, доставить информацию, первый шаг к искусственному интеллекту, обрабатывать информацию, цифровое информационное пространство, распределять ресурсы.

20. *Translate into English.*

1. Термин *"конвергенция"* означает объединение двух или нескольких технологий в одном устройстве. 2. Искусственный интеллект – это технология создания интеллектуальных машин, копирующих поведение человека. 3. Слияние технологий связано с появлением мобильной телефонии и Интернета. 4. Это устройство можно рассматривать в качестве примера слияния технологий. 5. Люди создают продукты и потребляют их.

21. *Give synonyms.*

To design a device, to manipulate data, to permit, to connect, to carry information, to perform, the tendency, to involve, nowadays, current business models, a task, be able, to define.

22. *Match the words (1–7) with the definitions (a–g). Translate.*

1. Bluetooth	a) a power source in cell phones
2. Voice activation	b) a short, written message sent to or from a cell phone
3. Lithium-ion battery	c) a cell phone feature that alerts of incoming calls during another call
4. 4G network	d) a feature that calls a number by speaking instead of by dialing
5. Text message	e) a feature that lets you leave or listen to an electronic message
6. Call waiting	f) a wireless network that connects a phone with other devices
7. Voicemail	g) a wireless network that sends and receives data

23. *Find English equivalents.*

Посылать электронную почту, проверять расписание, сенсорный экран, потреблять энергию, преимущество планшета, множество приложений, такие программы все еще нужны, обновить информацию, экономить пространство, вместо набора номеров, чтобы улучшить качество, важная особенность прибора, проводная связь, оставить сообщение.

24.*Translate into English.*

1. Моя электронная книга очень современная. 2. Эта особенность позволяет мне скачивать различные программы. 3. Нам требуются как настольные, так и переносные компьютеры. 4. Переносные компьютеры

не имеют клавиатуры. 5. Преимущество планшета – в его размерах. 6. У нас есть возможность скачать бесплатные обновления. 7. Как правило, планшетный компьютер имеет встроенный Wi-Fi. 8. Мобильные устройства могут выполнять различные задачи.

25. *Give synonyms.*

To allow, cell phone, extremely, feature, to fit, to purchase, entire, rate, type, usually, quickly, portable devises, convenient, to update.

26. *Underline complex object. Translate the sentences into Russian.*

1. Tell the secretary what you would like her to do. 2. Seeing the professor enter the room the students rose to greet her. 3. We can expect computer and internet to occupy a central place in distant education. 4. We knew him to be very clever, so we are not surprised that he won in the competition of programmers. 5. The manufacturers would like the time fixed for delivery to run from the 20th January. 6. I want this IT-engineer to help me in repairing my computer.

27. *Translate into English. Use complex object.*

1. Я хочу, чтобы мой смартфон имел последнюю версию ОС. 2. Разработчики полагают, что данный объем памяти устройства позволит устанавливать самые современные приложения. 3. Мой друг знает, что жидкокристаллический монитор не позволяет использовать электронную книгу при ярком свете. 4. Мы ожидаем, что новая модель смартфона будет очень тонкой.

28. *Form comparative or superlative degree depending on the sense of the sentence. Translate into Russian.*

1. Transistor computers consumed far (little) power, produced far (little) heat, and were much (small) compared to the first generation. 2. The (obvious) difference is that tablet computers don't have keyboards or touchpads. 3. LCDs are used in a (wide) range of devices than e-paper displays. 4. A tablet computer is usually (large) than a smartphone. 5. 4G network is (fast) compared with the 3G network. 6. For me, the e-paper screen is (convenient) than the LCD. 7. Minicomputers were much (small), and (cheap) than first and second generations of computers. 8. Smart watch is the (modern) wearable computer.

Part III. Listening, Speaking and Writing

29. *What device is mentioned in Text 1 as an example of convergence? Tell about this device using the text and ex. 2.*

For example: A smart phone is an example of convergence because …

30. *Read and learn the dialogue.*

Device manufacturer (D) and interviewer (I)

I – What are you doing these days?

D – To be honest, I don't know what to do these days.

I – What did you do in the past?

D – We used to make cameras and went digital.

I – What happened?

D – Then everybody wanted cameras on cellphones.

I – What did you decide to do then?

D – We started making those devices.

I – Were they popular among our population?

D – At first. But people always want to upgrade and get the latest models or new gadgets.

I – Are you going to adapt to your customers' needs?

D – We have to, if we want to remain in business. But it is not easy. I went to a technology fair last week and they were demonstrating this jacket and hat that was your phone.

I – Amazing!

D – Yeah, there are so many disruptive technologies, I don't know what is going to happen.

I – Can you make a guess?

D – Maybe we'll have to get into clothing.

31. *Using the dialogue above, make up your own dialogue between a TV broadcaster and an interviewer. Use the following text to help you.*

TV broadcaster

A lot of broadcasters like us are having a hard time. The problem is that there are lots more channels these days and people also get them through different media. I can download the latest films from the phone company. My children don't even watch TV. They watch video online and their friends send them clips on their mobiles. But we have to survive on our advertising revenue and at the moment that's falling. Things are really not easy, and I'm sure there are some broadcasters that will go out of business.

32. *Discuss the following.*

1) How does a **tablet computer** differ from a **laptop**? What are some of the advantages and disadvantages of a tablet computer?

2) If you're thinking about buying an **e-reader**, think about what kinds of things you like to read. Do you mostly read **books** or **magazines**? What kind of screen do you think would be better?

3) What do you think about smart watches? Are they necessary and convenient? Prove your point of view.

4) Do you think that convergence and mobility are connected? Prove your opinion in writing.

5) Convergence services you use.

UNIT 10. NETWORKING

1. *Work with a group-mate to discuss the following.*

1) How many networks are there in the world? Can you name some?

2) Can you explain the abbreviations like LAN, WLAN, WAN, MAN, PAN, HAN, CAN, BAN, SAN, VPN?

3) Computer networks are very often used nowadays, aren't they? Do you know why?

Part I. Text

1. *Read the text and speak about the aims of computer networks.*

Although many individual computers users may have standalone machines (machines which are not connected to other computers), in institutional settings it is very common for two or more computers to be linked in a network. Computer network is a group of computers connected with each other through wires, optical fibers or optical links so that various devices can interact with each other through a network. In the case of computer network technology, there are several types of networks that vary from simple to complex level.

The aim of the computer network

1. Resource sharing. Resource sharing is the sharing of resources such as programs, printers, and data among the users on the network without the requirement of the physical location of the resource and user.

2. Server-Client model. Computer networking is used in the server-client model. A server is a central computer used to store the information and maintained by the system administrator. Clients are the machines used to access the information stored in the server remotely.

3. Communication medium. Computer network behaves as a communication medium among the users. For example, a company contains more than one computer has an email system which the employees use for daily communication.

4. E-commerce. Computer network is also important in businesses. We can do the business over the Internet. For example, amazon.com is doing their business over the Internet, i. e., they are doing their business over the Internet.

2. *There are many types of computer networks.*

A. *Find out what the abbreviations below mean. Use the List of Abbreviations (see Appendix 4).*

LAN, WLAN, WAN, MAN, PAN, HAN, CAN, BAN, SAN, VPN.

B. *Match the type of network with its description.*

LAN	is a network that moves with a person, for example, a mobile network
SAN	is a network that extends over a large geographical area such as states or countries
BAN	is a network that covers a larger geographic area by interconnecting a different LAN to form a larger network
MAN	is a service that allows you to connect to the Internet via an encrypted tunnel to ensure your online privacy and protect your sensitive data
WAN	is used for connecting the computer devices of personal use, such as the laptop, mobile phones, media player and play stations
PAN	is used for connecting two or more personal computers through a communication medium such as twisted pair, coaxial cable, etc. such as hubs, network adapters, and ethernet cables
VPN	is a specialized, high-speed network that provides block-level network access to storage

3. *Read the text about the concept of Global Network Infrastructure.*

A global network is any communication network which spans the entire Earth, and global span of the electrical telegraphy network was achieved in 1899. The telephony network was the second to achieve global status, in the 1950s. More recently, interconnected IP networks (principally the Internet, with estimated 2.5 billion users worldwide in 2014), and the GSM mobile communication network (with over 6 billion worldwide users in 2014) form the largest global networks of all.

Setting up global networks requires immense, costly and lengthy efforts lasting for decades. Elaborate interconnections, switching and routing devices, laying out physical carriers of information, such as land and submarine cables and earth stations must be set in operation. In addition, international communication protocols, legislation and agreements are involved.

4. *Answer the questions.*

1) How many global networks exist nowadays?
2) Which of the established networks is nearly out of use, and why?
3) Which of the global networks is the most used one?
4) What steps are necessary to set up a global network?
5) Why does it take decades to set up a global network?

5. *What specialists are involved in establishing a global network? Tell in brief about their tasks. Use the following forms.*

To set up a global network … are needed. Their task is …

… are involved in establishing a global network. They are responsible for …

6. *Here are the words and word combinations you have to learn. Rewrite them and find their meaning using online translators (www.lingvolive.com, www.multitran.ru).*

Adhere, address space, circuit-switched telephone network, core network, implement, implementation, intermediate node, land cables, link, message switching, microwave transmission link, node, packet switching, private branch exchange (PBX), public switched telephone network (PSTN), public telephone operators (PTO), terminal node, span, submarine cables, switch, switching and routing devices, telephone exchange, transmission link, virtual network operator (VNO).

7. *Read and translate the text.*

Telecommunications network structure

A telecommunications network is a collection of terminal nodes, links and any intermediate nodes which are connected so as to enable telecommunication between the terminals. The transmission links connect the nodes together. The nodes use circuit switching, message switching or packet switching to pass the signal through the correct links and nodes to reach the correct destination terminal.

Each terminal in the network usually has a unique address, so messages or connections can be routed to the correct recipients. The collection of addresses in the network is called the address space.

Examples of telecommunications networks are:

– computer networks;
– the telephone network;
– the global Telex network.

A **telephone network** is a telecommunications network used for telephone calls between two or more parties. There are a number of different types of telephone network.

- A landline network where the telephones must be directly wired into a single telephone exchange. This is known as the public switched telephone network or PSTN.
- A private network where a closed group of telephones are connected primarily to each other and use a gateway to reach the outside world. This is usually used inside companies and call centers and is called a private branch exchange (PBX).

- A wireless network where the telephones are mobile and can move around anywhere within the coverage area.

Public telephone operators (PTOs) own and build networks of the first two types and provide services to the public under license from the national government. Virtual Network Operators (VNOs) lease capacity wholesale from the PTOs and sell on telephony service to the public directly.

The **public switched telephone network** (**PSTN**) is the aggregate of the world's circuit-switched telephone networks that are operated by national, regional, or local telephony operators, providing infrastructure and services for public telecommunication. The PSTN consists of telephone lines, fiber optic cables, microwave transmission links, cellular networks, communications satellites, and undersea telephone cables, all interconnected by switching centers, thus allowing any telephone in the world to communicate with any other. Originally a network of fixed-line analog telephone systems, the PSTN is now almost entirely digital in its core network and includes mobile and other networks, as well as fixed telephones.

The technical operation of the PSTN adheres to the standards created by the ITU-T. These standards allow different networks in different countries to interconnect seamlessly. The E.163 and E.164 standards provide a single global address space for telephone numbers. The combination of the interconnected networks and the single numbering plan make it possible for any phone in the world to dial any other phone.

A **cellular network** or **mobile network** is a radio network distributed over land areas called cells, each served by at least one fixed-location transceiver, known as a cell site or base station. In a cellular network, each cell characteristically uses a different set of radio frequencies from all their immediate neighboring cells to avoid any interference. When joined together these cells provide radio coverage over a wide geographic area. This enables a large number of portable transceivers (e. g., mobile phones) to communicate with each other and with fixed transceivers and telephones anywhere in the network, via base stations, even if some of the transceivers are moving through more than one cell during transmission. Although originally intended for cell phones, with the development of smartphones, cellular telephone networks routinely carry data in addition to telephone conversations.

A **wireless network** is any type of computer network that uses wireless data connections for connecting network nodes. Wireless networking is a method by which homes, telecommunications networks and enterprise (business) installations avoid the costly process of introducing cables into a building, or as a connection between various equipment locations. Wireless telecommunications networks are generally implemented and administered using radio communication. This implementation takes place at the physical level (layer) of the OSI

model network structure. Examples of wireless networks include cell phone networks, Wi-Fi local networks and terrestrial microwave networks.

Global System for Mobile Communications (GSM) network is divided into three major systems: the switching system, the base station system, and the operation and support system. The cell phone connects to the base system station which then connects to the operation and support station; it then connects to the switching station where the call is transferred to where it needs to go. GSM is the most common standard and is used for a majority of cell phones.

8. *True, false or no information? Find the sentences in the text that support your point of view.*

1) Telecommunications network nodes are connected via transmission links.

2) A public switched telephone network or PSTN is a radio network distributed over land areas.

3) A cellular network consists of telephone lines, fiber optic cables and undersea telephone cables.

4) The first global network was established using electrical telegraphy.

5) The GSM mobile communication network is used by over 6 billion people worldwide.

6) In a mobile network a large number of portable phones communicate with each other via base stations.

7) The PSTN includes now different networks.

9. *Answer the questions.*

1) What nodes does a telecommunication network consist of?

2) What switching do these nodes use?

3) What examples of telecommunications networks do you know?

4) How many types of telephone networks are mentioned in the text?

5) Who owns and builds landline network sand wireless networks?

6) How many systems is the GSM network divided in?

7) What standards allow different networks in different countries to interconnect?

8) What is a PBX?

9) What is the difference between PTOs and VNOs?

10. *Continue the sentence.*

1) A private network is _____.

a) a radio network distributed over land areas called cells;

b) usually used inside companies and call centers;

c) operated by national, regional, or local telephony operators.

2) Each terminal in the network has _____.

a) examples of telecommunications networks;

b) a different set of radio frequencies from all their immediate neighboring cells to avoid any interference;

c) a unique address, so messages or connections can be routed to the correct recipients.

3) GSM is the most common _____.

a) standard used for a majority of cell phones;

b) type of computer network that uses wireless data connections;

c) combination of the interconnected networks and the single numbering plan.

4) Wireless networking is a method _____.

a) to avoid any interference;

b) to avoid the costly process of introducing cables into a building;

c) to communicate with each other moving through more than one cell during transmission.

11. *Prepare a short summary of the text using the expressions (see Appendix 2 for annotation details).*

Part II. Language

12. *Match the words (1–6) with the definitions (A–F). Translate.*

1. LAN	**A.** Public Switched Telephone Network. A country's telephone network.
2. PBX	**B.** Private Branch Exchange. A telephone system bought and used by a company in their office.
3. Wi-Fi	**C.** A network which covers a small physical area, for example one building.
4. GPS	**D.** A system which uses radio signals to allow a broadband connection to the Internet.
5. PSTN	**E.** A system which allows receiver to identify its position anywhere on earth.
6. GSM	**F.** A worldwide standard for mobile phones making phones from one operator compatible with a different operator in another country.

13. *Find English equivalents.*

Физические носители информации, требовать огромных усилий, установить глобальную сеть, достигнуть терминала, внутри зоны охвата, различный набор частот, использовать беспроводные информационные соединения, большинство сотовых телефонов, избегать помех, наземные телефонные сети, сложные телекоммуникационные узлы связи, общаться через базовые станции.

14. *Translate into English. Use the construction "infinitive as attribute".*

Глобальная сеть, которую нужно установить; носители информации, которые будут использоваться; подводные кабели, которые следует изготовить; узел терминала, который будет заменен; помехи, которые необходимо устранить; уровень помех, который нужно достигнуть; беспроводные телефонные соединения, которые требуется обновить; качество сотовых телефонов, которое будет улучшаться; радио частоты, подлежащие изменению; зоны охвата, которые будут увеличены.

15. *Translate into English.*

1. Два дня тому назад мы посетили фирму, которая устанавливает наземные телекоммуникационные сети. 2. Существуют различные виды телекоммуникационных сетей. 3. Нам показали оптоволоконные кабели, которые доходят до помещений клиентов. 4. Что касается меня, я предпочитаю использовать беспроводные сотовые телефоны. 5. Зона охвата этих устройств достаточно велика. 6. Кроме того, качество связи постоянно улучшается. 7. С моей точки зрения, самое лучшее качество предоставляет спутниковая связь. 8. Использование этого вида связи позволяет нам избежать помех. 9. В общем и целом следует внедрять все доступные телекоммуникационные технологии. 10. Мы должны также учитывать стоимость устройств, которые будут использоваться в области телекоммуникаций.

16. *Give synonyms:* to span, collection, a set of laws, to establish, interference, storage, via, bugs, field of developing, to consist of, to exist, the costly process, to realize, to use, to join.

17. *Choose the correct voice. Translate.*

1. Currently information technology (is impacting/is impacted) all walks of life all over the world. 2. Computerized databases are extensively (using/used) to store all sorts of confidential data of political, social, economic or personal nature to support human activities and bringing various benefits to the society. 3. However, the rapid development of information technology globally also (has led/has been leading) to the growth of new forms of national and transnational crimes. 4. These crimes (having/have) no boundaries and may (affect/affecting) any country across the globe. 5. The new boundaries, which (manifest/are manifested) in the monitor screen, passwords etc. have (created/been created) new personalities, groups, organizations, and other new forms of social, economic, and political groupings in the cyber world of bits.

Part III. Listening, Speaking and Writing

18. *Compare different kinds of networks. Use the following phrases.*

Contrast (сопоставление)	Comparison (сравнение)
• However • Although/even though • Though • But • Despite/in spite of (несмотря на) • While • Whereas • On the one hand ... • On the other hand …	• Similarly • Likewise • Unlike Y, … (В отличие от ..., …) • On the contrary • Vice versa • X is better than Y • The best device is X • Also • Just as/Just like • Similar to/Same as • Not only ... but also ...

19. *Learn the following dialogue between a trainee and an employer.*

– Hi, how can I help you?

– I have just been accepted to the company as a trainee. But I have some questions to ask about networks.

– Fire away!

– Can you explain what the difference between wireless and cellular networks is?

– Sure. A wireless network uses wireless data connections for connecting network nodes whereas a cellular network uses radio frequencies from neighboring cells.

– Oh I see. How is a wireless network managed?

– Radio communication helps it to be implemented and administered.

– I see. Can you give examples of a wireless network please?

– Of course. It includes cell phone networks, WiFi local networks or terrestrial microwave networks.

– What about a mobile network? I did not quite understand what it is.

– Well, There are several interconnected cells that provide radio coverage over a wide geographic area. Base stations serve each cell. These base stations and cells help mobile phones transmit data and telephone conversations between each other and to fixed transceivers and telephones anywhere in the network.

– So if I am moving between cells when talking to a friend in Germany, a certain base station in a certain cell picks up a signal and makes our call possible. Right?

– Exactly!

– Thanks a lot for your help.

– You are welcome!

20. *Work in pairs.*

- Student A. Explain to your partner how telecommunication between terminals operates with the help of the text provided.

Student B. Listen to Student A and then explain how the switched telephone network (PSTN) operates with the help of the text provided.

- Group/Pair A: list all the advantages of networks.

Group/Pair B: list all the disadvantages of networks.

Then consider how the disadvantages can be minimized.

21. *Read about 5G wireless networks and discuss:*

a) their features;

b) advantages and disadvantages/novel 5G technologies.

With most phones running 3G and some on 4G, Techworld examines the next generation wireless system, 5G. 5G simply stands for fifth generation and refers to the next and newest mobile wireless standard based on the IEEE 802.11ac standard of broadband technology, although a formal standard for 5G is yet to be set. 5G connections must be based on user experience, system performance, enhanced services, business models and management & operations.

And according to the Groupe Speciale Mobile Association to qualify for a 5G a connection should meet most of these eight criteria:

- one to 10 Gbps connections to end points in the field;
- one millisecond end-to-end round trip delay;
- 1000x bandwidth per unit area;
- 10 to 100x number of connected devices;
- (perception of) 99.999 percent availability;
- (perception of) 100 percent coverage;
- 90 percent reduction in network energy usage;
- up to ten-year battery life for low power, machine-type devices.

Hubert Da Costa, Vice President, EMEA at Cradlepoint said: “5G Wi-Fi connections are set to be about three times faster than 4G, starting with 450Mbps in single-stream, 900 Mbps (dual-stream) and 1.3G bps (three-stream). So, whilst we are already starting to see a huge growth in IoT and smart devices, 5G’s speed and capacity will enable an even more rapid arrival of this connected future”.

5G will be significantly faster than 4G, allowing for higher productivity across all capable devices with a theoretical download speed of 10,000 Mbps. Plus, with greater bandwidth comes faster download speeds and the ability to run more complex mobile internet apps. However, 5G will cost more to implement and while the newest mobile phones will probably have it integrated, other handsets could be deemed out of date. A reliable, wireless internet

connection can depend on the number of devices connected to one channel. With the addition of 5G to the wireless spectrum, this could put us at risk of overcrowding the frequency range.

Notable advancements in 5G technologies have come from Nokia, Qualcomm, Samsung, Ericsson and BT, with growing numbers of companies forming 5G partnerships and pledging money to continue to research into 5G and its application. Qualcomm and Samsung have focused their 5G efforts on hardware, with Qualcomm creating a 5G modem and Samsung producing a 5G enabled home router. Both Nokia and Ericsson have created 5G platforms aimed at mobile carriers rather than consumers. Ericsson created the first 5G platform earlier this year that claims to provide the first 5G radio system. Ericsson began 5G testing in 2015.

Part IV. Business Letter: Structure & Layout

22. The business letter's precise **structure** is crucial to its look and readability. Usually, a business letter consists of the following parts: ***opening, salutation, body, closing, signature, enclosures*** *(if any)*. There are some differences between the business letter layout in American English and British English.

Opening. Include your mailing address, the full date (for example, July 30, 2017), and the recipient's name, company, and address. Skip one line between your address, the date, and your recipient's information. Don't add your address if you're using letterhead that already contains it.

Salutation. Address the recipient using "Dear," along with their title and last name, such as "Dear Mr. Collins" or "Dear Director Smith". If you don't know the recipient's gender, use their full name, such as "Dear Taylor Dean". Finally, be sure to add a colon to the end of the salutation.

Body. In the first paragraph, introduce yourself and the main point of your letter. Following paragraphs should go into the details of your main point, while your final paragraph should restate the letter's purpose and provide a call to action, if necessary.

Closing. Recommended formal closings include "Sincerely" or "Yours truly". For a more personal closing, consider using "Cordially" or "Best regards". Regardless of what you choose, add a comma to the end of it.

Signature. Skip four lines after the closing and type your name. Skip another line and type your job title and company name. If you're submitting a hard copy, sign your name in the empty space using blue or black ink.

Enclosures. If you're including documents with this letter, list them here.

Another important part of the structure is the layout, which determines how the text is formatted. The most common layout for a business letter is known as **block format**, which keeps all text left-justified and single spaced, except for

double spaces between the paragraphs. This layout keeps the letter looking clean and easy to read.

The UK format is similar to US full block format, with these key differences for UK letters:

1. The return address is ***right-aligned***.
2. The date is written as "**15th May 2008**", not "May 15, 2008".
3. ***A comma***, not a colon, follows the recipients' name.
4. The subject (if included) is ***centered***.

22.1. *Analyze the following examples. Pay attention to the differences in the business letter layout.*

Example 1 (***AmE***):

Date
July 20, 20xx

Sender's Address
GP & Associates
2053 SW Channing Avenue, Suite 400
Denver, CO 80016

Mailing/Recipient's Address
Ms Tia Turfingeon
ACTION ITEMS
3400 Onesite Parkway
Denver, CO 80016

Salutation
Dear Ms. Turfingeon,

Body
I understand from our mutual acquaintance, Chad Johnson, that you are looking to retain an accountant to assist you in the sale of your business. I would welcome the opportunity to show you how GP & Associates was able to help Chad successfully sell his business earlier this year.

<…>

Call to action
To set up an appointment to discuss your specific needs, please contact me at 303-449-0037. I know how busy you are, so I will give you a call on Tuesday to follow up if I haven't heard from you.

Closing
Best Regards
Signature Block
Greg Parker

Enclosures
CC:

Example 2 (***BrE***):

Return (Sender's) Address
Full Name & Title
Job Title
Full Address
Post/Zip Code

Date: Day/Month/Year
email@email.co.uk
Telephone Number

Recipients (Mailing) Address
Full Name & Title
Company
Full Address

Salutation
Dear [insert name or Sir/Madam],

Body
I understand from our mutual acquaintance, Chad Johnson, that you are looking to retain an accountant to assist you in the sale of your business. I would welcome the opportunity to show you how GP & Associates was able to help Chad successfully sell his business earlier this year.
<…>
Call to action
To set up an appointment to discuss your specific needs, please contact me at 303-449-0037. I know how busy you are, so I will give you a call on Tuesday to follow up if I haven't heard from you.

Closing
Your sincerely,

Signature
[Your Name]

22.2. *Give the name of each business letter part.*

1) Dear Sir/Madam,
2) October 1st 2020
3) ABC FINANCE GROUP
4) 194 028
5) *Harald Olsen*
6) Yours truly,
7) According to the protocol, dated 04.12.19, we have prepared the Contract Documents for signing be the presidents of our companies.
8) (from) Ms Jenny Hudson ACTION ITEMS 3400 Onesite Parkway Denver, CO 80016
9) (to) FARMERS FRUIT PRODUCT 010 Mortimer street London W1 UK

22.3. *Place the following business letter parts in the correct order. Find & read first the body text to find the addresser/addressee.*

1) This is to inform you that our company is one of the best producers of fruit preserves in England. Please refer to the enclosed price-list, and let us know your requirements on the form attached. FARMERS look forward to hearing from you soon.
2) Tom Wilson, Sales Manager
3) 10th November, 2018
4) Roberts Import Company
   Av. Rio Branco 198
   Grupo 506
   Rio de Janeiro
   Brazil
5) Dear Sirs,
6) Yours faithfully,
7) FARMERS FRUIT PRODUCT
   010 Mortimer Street
   London W1
   UK

22.4. *Place the text above on paper. Mind the correct layout.*

UNIT 11. MEDIA

1. *Work with a group-mate to discuss the following.*

1) Is the term media connected with the ways people communicate in society?

2) Do you like multimedia presentations? Can you make them?

3) How has the mass media changed over the last 20 years?

Part I. Text

1. *"Media" (the plural of medium) is a very broad term covering different areas and having different meanings. Match the terms below with their explanations.*

1) Communication media:	a) media with hyperlinks;
2) Broadcast media:	b) mass media focused on communicating news;
3)Digital media:	c) communications that incorporate multiple forms of information content and processing;
4) Electronic media:	d) all means of mass information and communication;
5) Multimedia:	e) electronic media used to store, transmit, and receive digitized information;
6) News media:	f) communications delivered over mass electronic communication networks;
7) Hypermedia:	g) tools used to store and deliver information or data;
8) Mass media:	h) communications delivered via electronic or electromechanical energy.

2. *Give the definitions of different media forms using the following patterns.*

"Hypermedia" is a term used to describe …

Media with hyperlinks are called …

3. *Read and translate the text. Find the meanings of new words in the dictionary.*

From the History of Media

In the last century, a revolution in telecommunications has greatly altered communication by providing new media for long distance communication. The first transatlantic two-way radio broadcast occurred in 1906 and led to common communication via analogue and digital media.

Analog telecommunications include some radio systems, historical telephony systems, and historical TV broadcast.

Digital telecommunications allow for computer-mediated communication, telegraphy and computer networks.

Modern communication media now allow for intense long-distance exchanges between larger numbers of people (many-to-many communication via e-mail or Internet forums). On the other hand, many traditional broadcast media and mass media favor one-to-many communication (television, radio, cinema, or social nets).

Broadcasting is the distribution of audio and/or video content to a dispersed audience via any electronic mass communications medium, but typically one using the electromagnetic spectrum (radio waves), in a one-to-many model. Broadcasting began with AM radio broadcasting which sprang up spontaneously around 1920. Before this, all forms of electronic communication, radio, telephone, and telegraph, were "one-to-one", with the message intended for a single recipient.

Historically, there have been several methods used for broadcasting audio and/or video to the general public.

Telephone broadcasting (1881–1932) was the earliest form of electronic broadcasting, data services offered by stock telegraph companies from 1867 not counting. Telephone broadcasting began with the advent of "Theatre Phone" systems, which were telephone-based distribution systems allowing subscribers to listen to live opera and theatre performances over telephone lines in 1881. Telephone broadcasting also grew to include telephone newspaper services for news and entertainment programming which were introduced in the 1890s, primarily located in large European cities. These telephone-based subscription services were the first examples of electrical/electronic broadcasting and offered a wide variety of programming.

Radio broadcasting was experimentally used from 1906, commercially from 1920. Audio signals are sent through the air as radio waves from a transmitter, picked up by an antenna and sent to a receiver. Radio stations can be linked in radio networks to broadcast common radio programs, either in broadcast syndication, simulcast or sub channels.

Television broadcasting (telecast) was experimentally delivered from 1925, commercially from the 1930s, an extension of radio including video signals.

Cable radio, also called "cable FM", (from 1928) and cable television (from 1932) both used coaxial cable, originally serving principally as transmission media for programming produced at either radio or television stations, but later expanding into a broad universe of cable-originated channels.

Direct-broadcast satellite (DBS) exists from circa 1974, and satellite radio from circa 1990. They are meant for direct-to-home broadcast programming (as opposed to studio network uplinks and downlinks), provide a mix of traditional radio or television broadcast programming, or both, with dedicated satellite radio programming. Satellite television is very popular nowadays.

Webcasting of video/television (from circa 1993) and audio/radio (from circa 1994) streams offers a mix of traditional radio and television station broadcast programming with dedicated internet radio.

4. *True, false or no information? Find the sentences in the text that support your point of view.*

1) Digital telecommunications include some radio systems, historical telephony systems, and historical TV broadcast.

2) Cable radio and cable television both used coaxial cable.

3) Broadcasting began with FM radio broadcasting.

4) Satellite radio exists from 1990.

5) Electronic media used to store, transmit, and receive digitized information are called digital media.

6) Marconi and Popov both contributed to radio broadcasting.

7) TV and radio are examples of one-to-many communication.

5. *Answer the questions.*

1) What is the difference between analog and digital communication?

2) How is communication via e-mail or Internet forums called in the text?

3) What kind of communication is usual for traditional media?

4) What is the earliest form of electronic broadcasting?

5) In what way could subscribers listen to live opera and theatre performances in 1881?

6) What is the process of radio broadcasting?

7) What were cable radio and television originally used for?

8) What devices are used for direct-to-home broadcast programming?

6. *Give a summary of the text "From the History of Media" using the expressions (see Appendix 2 for annotation details).*

Part II. Language

7. *Match the terms with their definitions.*

1) broadcasting	a) the transmission and reception of electromagnetic waves of radio frequency, especially those carrying sound messages
2) transmitting	b) a system for converting visual images (with sound) into electrical signals, transmitting them by radio or other means, and displaying them electronically on a screen
3) radio	c) the working or use of telephones
4) television	d) the action or practice of broadcasting an event on the Internet
5) telephony	e) the act of transmitting speech, music, visual images, etc., as by radio or television
6) webcasting	f) sending a signal by wire, radio, or television waves

8. *Find the English equivalents.*

Распределять видеоконтент, быть самой первой формой радиовещания, передавать с помощью передатчика, принимать с помощью приемника, предлагать большое разнообразие программ, наслаждаться развлекательными программами, использовать электронные средства массовой информации, предпочитать телевизионное вещание, удалить ненужную информацию, выделять полезную информацию, связывать в радиосети, включить видеосигналы, существовать с 1990-х годов, заменить кабельным телевидением, установить оптоволоконную связь, починить телефонную линию, увеличить число каналов, предоставлять смесь традиционных радиовещательных программ.

9. *Translate into English.*

1. Существуют различные мнения о термине “Media”. 2. Изобретение радио в значительной степени изменило нашу жизнь. 3. Именно А. С. Попов изобрел радиопередатчик. 4. Первой формой электронного вещания была телефония. 5. Появление телевидения повлияло на наш стиль жизни. 6. Аналоговое вещание заменяется цифровым. 7. Подписчики могут слушать вживую оперу и театральные постановки. 8. Развлекательные программы начали передаваться с девяностых годов XIX столетия. 9. Качество средств массовой информации постоянно улучшается. 10. Некоторые люди не могут представить себе жизнь без спутникового телевидения. 11. Интернет особенно популярен среди молодежи. 12. К сожалению, студенты не уделяют особого внимания таким средствам массовой информации, как газеты и радиовещание.

10. *Give synonyms.*

To incorporate, to deliver, to describe, to begin, to alter, to remove, to occur.

11. *Replace the infinitives in brackets by the correct form of a Participle.*

1. (to impress) by programmer’s work, the client extended her contract for a year. 2. (to be unemployed), Dave had time to consider what job he really wanted. 3. (to sink) deeper and deeper into details the student could not accomplish his course work. 4. (to paint) in dark colors, the room needed some bright lights. 5. (to be) a System Security Administrator for 14 years, Barbara knew how to keep the firm’s computer system safe.

12. *Make up your own sentences with these words:*

prepare – preparation – preparing – having been prepared – while preparing;
explain – explanation – explained – explaining – being explained;
reduce – reduction – reducing – being reduced – reduced.

13. *Open the brackets, putting the words into the correct form. Translate.*

1. This article (to be) about different types of media. 2. This paper (to deal with) new media for long distance communication. 3. The main idea of this paper is (to tell) us about the history of media. 4. The author (to give) us different definitions of different media forms. 5. The paper (to point out) that historically, there have been several methods used for broadcasting electronic media audio and/or video to the general public. 6. (There be) some parts in this text. 7. I (to believe) the most interesting part is the second one. 8. First of all I would like (to underline), the fiber optic connection is of great interest today. 9. Much attention (to give) to the Radio and Television broadcasting. 10. In the text there are statements that I (to disagree with). 11. I can (to give) arguments for or against the statement: "Satellite television is very popular nowadays". 12. The paper (to claim) that Radio broadcasting was experimentally used from 1906. 13. The paper also (to cover) such points as Telephone broadcasting and cable Radio. 14. The advantage of this kind of media will (to be discussed) later. 15. In conclusion I want to say that this article (to be of interest) for students. 16. I will try (to use) this knowledge in my future job. 17. Summing up, I would like (to emphasize) that these devices are (to use) in our university. 18. To all this must (to add) that this knowledge is very useful for me. 19. As for me, I can say this article (to be) very interesting. 20. In my opinion/to my mind/from my point of view I (to get) a lot of information from this paper.

14. *Translate into English.*

1. В этой статье рассматриваются вопросы телевещания. 2. Публикация состоит из нескольких разделов. 3. Первая часть – введение. 4. Автор рассказывает нам об истории вопроса. 5. С моей точки зрения, основные разделы публикации – второй и третий. 6. Во второй части исследователь объясняет нам, как функционирует радиовещание. 7. Он упоминает основные характеристики некоторых телевизионных передатчиков. 8. В третьем параграфе ученый описывает преимущества и недостатки телевещания. 9. Автор рассказывает нам о преимуществах телевещания по сравнению с радиовещанием. 10. Он полагает, что телевещание играет огромную роль в нашей жизни. 11. Я разделяю это мнение. 12. Телевидение используется во многих областях человеческой жизни. 13. Исследователь дает нам примеры использования телевещания. 14. Я хотел бы добавить, что телевещание используется и в нашем университете. 15. Я хотел бы подчеркнуть, что в настоящее время мы наблюдаем тенденцию слияния телевидения и Интернета. 16. Следует добавить, что телевидение и Интернет помогают нам в учебе. 17. Вот почему я стараюсь использовать Интернет для подготовки домашних заданий. 18. В следующих абзацах исследователь уделяет особое внимание качеству и стоимости телевизионного оборудования. 19. Он указывает на то, что это оборудование становится все дешевле. 20. Кроме

того, качество оборудования улучшается, и оно становится очень надежным. 21. В заключение я хочу сказать, что эта статья содержит много новой информации. 22. В целом я хочу сказать, что эта статья достаточно скучная. 23. Я получил много полезной информации. 24. Что касается меня, я постараюсь использовать эти знания в моей будущей работе. 25. Спасибо за Ваше внимание.

Part III. Listening, Speaking and Writing

15. *Make up a dialogue. Use the language for comparing/contrasting (повторение).*

Student A: Explain to your partner different types of media.

Student B: Ask some questions about different types of media.

Contrast (сопоставление)	Comparison (сравнение)
• However • Although/even though • Though • But • Despite/in spite of (несмотря на) • While • Whereas • On the one hand ... • On the other hand …	• Similarly • Likewise • Unlike Y, … (В отличие от ..., …) • On the contrary • Vice versa • X is better than Y • The best device is X • Also • Just as/Just like • Similar to/Same as • Not only ... but also ...

16. *Read and translate the following dialogue between a consumer and a company representative. Then answer the questions.*

– Oh, good morning. I've got a problem with my MP3 player, could you help?

– Certainly, we're experiencing a recall on some models. Which one do you have?

– I have the N. 5250.

– OK, tell me about the problem you're having.

– Well, at first, the sound quality started getting worse. Then, it completely froze. I tried restarting it but that didn't work.

– Sounds like a problem caused by AAC* files. Don't worry; we have a driver to fix that.

– Great! How do I get it?

– Just download it from our website and upload it to your player.

– Thanks a lot, you've been very helpful.

* AAC is a file format that is a higher quality than MP3s.

17. *Choose the correct answer to the question.*

1) What are the speakers mostly talking about?

A. Why AAC files are causing problems.

B. Where a consumer can buy a driver.

C. How to solve a consumer's problem.

D. Which model a consumer owns.

2) How did the customer try to fix the MP3 player?

A. Install a new driver.

B. Restart the player.

C. Upload a new playlist.

D. Remove the AAC files.

18. *Make up a dialogue between a consumer and a company representative. Make use of the dialogue above. Use the language given below.*

I've got a problem with my …

Which model do you have?

Tell me about the problem you're having.

Student A: You are a company representative. Talk to Student B about a recall on a model and problems.

Student B: You are calling to get help with your smart watch. Ask Student A questions.

19. *Imagine you are at the Media Conference. Answer the questions about the History of Media. Make up a dialogue between a journalist and an IT Specialist.*

1) When did new media for long distance communication appear?

2) What is the difference between analogue and digital communications?

3) What is the difference between modern communication media and traditional mass media?

4) What method of broadcasting media was the first to appear?

5) What is broadcasting?

6) How did all forms of electronic communication look like before 1920?

7) When did telephone broadcasting begin?

8) What were "Theatre Phone" systems?

9) What is DBS?

10) What does webcasting of video/ television and audio/radio streams offer to consumers?

11) What is DBS used for?

12) How does radio broadcasting work?

13) What is cable FM?

14) What cable is involved in cable TV?

15) When and where did telephone newspaper services and entertainment programming?

16) Give examples of electrical/electronic broadcasting.

20. *Retell the text "History of Media".*

Part IV. Business letter: types

21. *Read & translate the texts below.*

There exist very many types of business letters. Some of them are listed below.

Sales letters

Typical sales letters start off with a very strong statement to capture the interest of the reader. Since the purpose is to get the reader to do something, these letters include strong calls to action, detail the benefit to the reader of taking the action and include information to help the reader to act, such as including a telephone number or website link.

Order letters

Order letters are sent by consumers or businesses to a manufacturer, retailer or wholesaler to order goods or services. These letters must contain specific information such as model number, name of the product, the quantity desired and expected price. Payment is sometimes included with the letter.

Complaint letters

The words and tone you choose to use in a letter complaining to a business may be the deciding factor on whether your complaint is satisfied. Be direct but tactful and always use a professional tone if you want the company to listen to you.

Adjustment letters

An adjustment letter is normally sent in response to a claim or complaint. If the adjustment is in the customer's favor, begin the letter with that news. If not, keep your tone factual and let the customer know that you understand the complaint.

Inquiry letters

Inquiry letters ask a question or elicit information from the recipient. When composing this type of letter, keep it clear and succinct and list exactly what information you need. Be sure to include your contact information so that it is easy for the reader to respond.

Follow-up letters

Follow-up letters are usually sent after some type of initial communication. This could be a sales department thanking a customer for an order, a businessman reviewing the outcome of a meeting or a job seeker inquiring about the status of his application. In many cases, these letters are a combination thank-you note and sales letter.

Letters of recommendation

Prospective employers often ask job applicants for letters of recommendation before they hire them. This type of letter is usually from a previous employer or professor, and it describes the sender's relationship with and opinion of the job seeker.

Acknowledgment letters

Acknowledgment letters act as simple receipts. Businesses send them to let others know that they have received a prior communication, but action may or may not have taken place.

Cover letters

Cover letters usually accompany a package, report or other merchandise. They are used to describe what is enclosed, why it is being sent and what the recipient should do with it, if there is any action that needs to be taken. These types of letters are generally very short and succinct.

Letters of resignation

When an employee plans to leave his job, a letter of resignation is usually sent to his immediate manager giving him notice and letting him know when the last day of employment will be. In many cases, the employee also will detail his reason for leaving the company.

22. *True or false? Find the sentences in the text that support your point of view.*

1) A letter of resignation is usually sent by the job seeker.

2) Inquiry letters are usually sent after some type of initial communication.

3) A cover letter is used to describe the enclosure.

4) Letters of recommendation help prospective employers form opinions about job applicants before hiring them.

5) Sales letters include strong calls to action by publishing a company's telephone number or website link.

6) Order letters are normally sent in response to a claim or complaint.

23. *Read the examples of business letters and identify their types:*

1) *Dear Mr. Mancini,*

We would like to purchase twenty-two (22) PWB/printed wiring boards (Model #43423).

We would like you to charge this purchase to the preexisting account that we have with you, business account #543234.

We hope to receive this order no later than Friday, November 11th, 2020. Attached to this letter please find our preferred shipping method and receiving address.

Please confirm that you received this order by calling us at 232-231-4563 anytime during business hours, Monday to Friday.

Thank you for your cooperation.

2) *Dear Mr. O'Leary,*

Please accept this letter as notice that I will be resigning from my job here at Acme Corp. two weeks from today's date.

Thank you for the support and the opportunities you have provided me over the course of the last six years. You and our team have created a climate that makes it a pleasure to come to work each morning, and I will miss you all.

If I can do anything to help with your transition in finding and training my replacement, please let me know.

Sincerely,

Kathy Leonard.

3) *Dear Mr. Norris,*

Want the latest on cellular phones and accessories?

At Floyd Mobile World, you're sure to be updated on what's new, what's hot and what's cool in the world of cellular phones!

We are proud to introduce to you our WiFi + 4G phones with different styles, colors, and sizes, all at $100 or less!

These are such incredible offers that bring you great value for your money. Whatever your style, whatever your needs, you can find it at Floyd Mobile World. All Floyd phones come with a rate plan that fits you, mobile accessories, warranty, and more exciting features. You can choose from these offers: Floyd Smartphone – has a 12 mp camera, Wi-Fi, 4G, Ms. office applications, GPS tracker, photocell, voice command, downloadable games along with other essential and characteristic features.

Hurry and take advantage of these great deals only at Floyd Mobile World. Offer ends on July 1, 2020.

For orders and reservations, just visit our website at www.floydmobileworld.com and enter our secure ordering page.

Sincerely,

Signature

[Your name]

4) *Dear Ms. Connor,*

Thank you for taking the time to review my resume. I have recently graduated from University College, and I am currently looking for a position in the Huntington area.

I am interested in an entry-level role with ABCD Company's Accounting department, hoping to leverage my knowledge of corporate accounting and GAAP best practices to contribute to your operations. I have heard that ABCD is a wonderful company to work for, and I hope that I can be considered for the team.

If you have questions regarding my credentials and qualifications, please feel free to call or email me at namelastname@gmail.com.

Again, thank you for reviewing my resume. I look forward to hearing from you in the near future.

Sincerely,

Signature

[Your name]

A. *Sales letter.*

B. *Letter of resignation.*

C. *Order letter.*

D. *Inquiry letter.*

24. *Find the correct translation.*

1) Cover letter	a) коммерческое, рекламное письмо
2) Inquiry letter	b) разрешающее письмо
3) Sales letter	c) письменный заказ
4) Follow-up letter	d) рекламация
5) Complaint letter	e) письмо-запрос
6) Letter of resignation	f) письмо-поправка
7) Order letter	g) заявление об увольнении
8) Adjustment letter	h) письмо-напоминание
9) Acknowledgment letter	i) сопроводительное письмо

25. *Read and define the types of business letters.*

1	**2**
Education: Park High School Experience: Twenty years in US army Physical Fitness Instructor. Left army three years ago. Has taken courses in management and computing. Over the last two years has run a fitness centre in Lower Manhattan very successfully. Skills: Speaks Spanish fluently. Is a successful disc jockey in a downtown club.	Dear Akram, Thank you for your fax. I was sorry to hear that you've had some problems with the WR 458. We do all we can to make sure that our products leave our factory in perfect condition, but unfortunately sometimes a bad one does slip through. If you can arrange for it to be returned to me, I'll let you have a replacement by return. Hoping that you are keeping well, Regards Tony Anthony Hopkins.
a) letter of application; **b) memo;** **c) CV;** **d) letter of complaint**	**a) contract;** **b) memo;** **c) CV;** **d) letter of apology**

3	4
In the winter issue of Multimedia News we read that your company sells language laboratories. Our school needs a new language laboratory and we are looking for the best equipment. Could you please send us information on your laboratories and include a price list and ordering information. Thank you for your assistance. I look forward to hearing from you.	Dear Sir or Madam, In the April 4, 2006 Boston Daily News I read about your new camera the XL-Lite. Since I am a photographer with Bay State Magazine, it is important that I know about new cameras. Would you please send me information on the camera? I would like to know when the camera will be available and how much it will cost. Thank you for your attention.
a) letter of enquiry/request; **b) CV;** **c) contract;** **d) letter of complaint**	**a) CV;** **b) letter of enquiry/request;** **c) memo;** **d) letter of complaint**
5	**6**
I am writing in connection with the above invoice for an MX3 Facsimile machine. We received this machine yesterday. Unfortunately, the power cable is missing. We would be grateful if you could send us one as soon as possible.	Responsible for training and mentoring system technicians and system designs. Also responsible for ensuring that delegated tasks are done accurately, on-time, billed within budget, and performed within the scope of the contract. Must also oversee that safety standards are adhered to.
a) letter of complaint; **b) CV;** **c) letter of apology;** **d) contract**	**a) letter of inquiry;** **b) contract;** **c) job advertisement;** **d) memo**
7	**8**
Tony Spencer keeps parking his car in front of the main door. I have told him before that this place is reserved for the Managing Director. Can you tell him again?	I have enclosed my resume, and I would like to schedule an interview. I will call you early next week. I look forward to meeting you.
a) contract; **b) CV;** **c) memo;** **d) letter of application**	**a) letter of application;** **b) memo;** **c) CV;** **d) letter of complaint**

9	10
I was very sorry to hear about your problems with the new medical equipment. I have investigated the complaint and I regret to tell you that the problem is the result of faulty operation. I enclose a copy of the inspector's report with this letter. If you require us to repair the machine, please contact me at the number above.	Newell Ltd., hereinafter referred to as the Sellers on the one hand and Messrs. RusImport, hereinafter referred to as the Buyers, on the other hand, have concluded this Contract, whereby the Sellers sold and the Buyers bought on the terms and conditions stated herein, subject to the Standard Conditions of Sale attached to this Contract and forming an integral part thereof 25 SECURITY DEVICES.
a) contract; **b) letter of apology;** **c) CV;** **d) letter of application**	**a) contract;** **b) memo;** **c) CV;** **d) letter of enquiry/request**

26. *Write a sales letter to persuade your group mates to buy a new app/gadget.*

27. *Write an order letter to purchase an app/a gadget.*

28. *Your new gadget doesn't function properly. Find a template and write a complaint letter.*

UNIT 12. COMPUTER SECURITY, MALWARE & ANTIVIRUS DETECTION

1. *Work with a group-mate to discuss the following.*

1) Is cyber space secure now? Is cyber security an essential issue?
2) Have you ever been a victim of a cybercrime?
3) Will it be more or less secure in the future? Why?
4) Is it easy to steal sensitive information?
5) What is the difference between white hat and black hat hackers?

Part I. Text

1. *Here are the words and word combinations you have to learn. Rewrite them and find their meaning using online translator (www.lingvolive.com, www.multitran.ru):*

protection, computer security, security measure, advanced security technique, valuable or sensitive equipment, threat, theft of data, fraud, invasion of privacy, means of protecting, irresponsible behavior, to assign an individual password, to encrypt, a singular encryption key, to decipher, proliferation, to diminish a threat, a refinement.

2. *Read and compare the terms "information security" and "computer/ cyber security". Which term is broader?*

Information being an asset to all individuals and businesses, information security is designed to protect information from those with malicious intentions. Information you are trying to keep safe is your "data", and this refers to any form of data, whether it is electronic or on paper. Computer security is the protection of information in its electronic form: computing systems and the data that they store or access.

3. *Confidentiality, integrity and availability are sometimes referred to as the CIA Triad of information security. Match the components of CIA Triad of information security with their examples (2 for each component).*

Components

1. ***Confidentiality*** is referred to as protecting information from being disclosed to unauthorized parties. **2.** ***Integrity*** can be defined as protecting information from being changed by unauthorized parties. **3.** ***Availability*** is the availability of information to authorized parties only when requested.

Examples

A. When submitted to a website, your personal data should not be altered in any way during data transmission, or by the website company. **B.** You should be able to access and check your personal data kept on a website at any time. **C.** When submitted to a website, your personal data should only be used or accessed exclusively by designated staff in that company for the agreed purposes. No one else should be allowed to use your data for illegal purposes, or view the data out of curiosity. **D.** Clients should be able to access any of their data kept by the company when they request it. **E.** Sensitive information, such as sales figures or client data, should only be accessed by authorized persons such as senior management and the sales team, and not other operations or departments. **F.** Important documents or figures should not be changed or altered by unauthorized persons without prior notice.

4. *Read and translate the text.*

Text 1. Computer security

The protection of information and computer systems from harm, theft, and unauthorized use is referred to as computer security. Computer hardware is typically protected by the same means used to protect other valuable or sensitive equipment, namely, serial numbers, doors and locks, and alarms. The protection of information and system access, on the other hand, is achieved through other tactics, some of them being quite complex.

The security precautions related to computer information and access address four major threats: (1) theft of data, such as that of military secrets from government computers; (2) vandalism, including the destruction of data by a computer virus; (3) fraud, such as employees at a bank channeling funds into their own accounts; and (4) invasion of privacy, such as the illegal accessing of protected personal financial or medical data from a large database.

The most basic means of protecting a computer system against theft, vandalism, invasion of privacy, and other irresponsible behaviors is to electronically track and record the access to and activities of the various users of a computer system. This is commonly done by assigning an individual password to each person who has access to a system. The computer system itself can then automatically track the use of these passwords, recording such data as which files were accessed under particular passwords and so on. Another security measure is to store a system's data on a separate device, or medium, such as magnetic tape or disks, that is normally inaccessible through the computer system. Finally, data is often encrypted so that it can be deciphered only by holders of a singular encryption key.

Computer security has become increasingly important since the late 1960s, when modems (devices that allow computers to communicate over telephone lines) were introduced. The proliferation of personal computers in the 1980s compounded the problem because they enabled hackers (irresponsible computer files) to illegally access major computer systems from the privacy of their homes. The development of advanced security techniques continues to diminish such threats, though concurrent refinements in the methods of computer crime pose ongoing hazards[1].

5. *True, false or no information? Find the sentences in the text that support your point of view.*

1) The destruction of data by a computer virus is called vandalism.

2) Sensitive information, such as sales figures or client data, should only be accessed by authorized persons.

3) Viruses can be used to harm host computers and networks.

4) Computer security has become increasingly important since the late 1960s with the proliferation of personal computers.

5) Serial numbers, doors and locks are typically used to protect computer hardware.

6) Fraud is the illegal accessing of protected personal financial or medical data from a large database.

7) An individual password is used as the most basic means of protecting a computer system.

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[1] Computer-security [Электронный ресурс], – URL: https://www.britannica.com/technology/computer-security (дата обращения: 20.08.2020).

6. *Ask questions about means of computer security using the following patterns.*

A. I would like to know, if/whether …

B. Can you tell me what/which/when/why …?

C. Does anybody know what/which/when/why …?

D. Are you sure that …?

E. Do you agree that …?

7. *Prepare a short summary of the text "Computer security" using the expressions (see Appendix 2 for annotation details).*

8. *Malware is a broad term that refers to a variety of malicious programs. What types of such programs do you know? What harm can malware do to your computer?*

9. *Here are more words to be learned:*

to compromise computer functions, to steal data, to bypass access controls, to cause harm to, remote access, worm, adware, spyware, Trojan horse, bot, bug, ransomware, rootkit, cross-site scripting vulnerability, to consume bandwidth, to overload web servers, payload, to distinguish, ability to self-replicate, to deliver advertisements, a revenue generating tool, to come bundled with, to spy on user activity, to collect keystrokes, data harvesting, to disguise, DDoS attack, flaw, to hold a computer system captive, to restrict, to hide, suspicious

10. *Read the text and speak about the types of malware.*

Text 2. What is Malware?

Malware is short for malicious software, meaning software that can be used to compromise computer functions, steal data, bypass access controls, or otherwise cause harm to the host computer. The text will define several of the most common types of malware: viruses, worms, adware, spyware, Trojan horses, bots, bugs, ransomware and rootkits.

Computer Virus

A virus is a form of malware that is capable of copying itself and spreading to other computers. Viruses often spread to other computers by attaching themselves to various programs and executing code when a user launches one of those infected programs. Viruses can also spread through script files, documents, and cross-site scripting vulnerabilities in web apps. Viruses can be used to steal information, harm host computers and networks, create botnets, steal money, render advertisements, and more.

Worm

Computer worms are among the most common types of malware. They spread over computer networks by exploiting operating system vulnerabilities. Worms typically cause harm to their host networks by consuming bandwidth and overloading web servers. Computer worms can also contain "payloads" that damage host computers. Payloads are pieces of code written to perform actions on affected computers beyond simply spreading the worm. Payloads are commonly designed to steal data, delete files, or create botnets. Computer worms can be classified as a type of computer virus, but there are several characteristics that distinguish computer worms from regular viruses. A major difference is that computer worms have the ability to self-replicate and spread independently while viruses rely on human activity to spread (running a program, opening a file, etc). Worms often spread by sending mass emails with infected attachments to users' contacts.

Adware

Adware (short for advertising-supported software) is a type of malware that automatically delivers advertisements. Common examples of adware include pop-up ads on websites and advertisements that are displayed by software. Software and applications usually offer "free" versions that come bundled with adware. Most adware is sponsored or authored by advertisers and serves as a revenue generating tool. While some adware is solely designed to deliver advertisements, it is not uncommon for adware to come bundled with spyware that is capable of tracking user activity and stealing information. Due to the added capabilities of spyware, adware/spyware bundles are significantly more dangerous than adware on its own.

Spyware

Spyware is a type of malware that functions by spying on user activity without their knowledge. These spying capabilities can include activity monitoring, collecting keystrokes, data harvesting (account information, logins, financial data), and more. Spyware often has additional capabilities as well, ranging from modifying security settings of software or browsers to interfering with network connections. Spyware spreads by exploiting software vulnerabilities, bundling itself with legitimate software, or in Trojans.

Trojan horse

A Trojan horse, commonly known as a "Trojan", is a type of malware that disguises itself as a normal file or program to trick users into downloading and installing malware. A Trojan can give a malicious party remote access to an infected computer. Once an attacker has access to an infected computer, it is possible for the attacker to steal data (logins, financial data, electronic money),

install more malware, modify files, monitor user activity (screen watching, keylogging, etc.), use the computer in botnets, and anonymize internet activity by the attacker.

Bot

Bots are software programs created to automatically perform specific operations. While some bots are created for relatively harmless purposes (video gaming, internet auctions, online contests, etc.), it is becoming increasingly common to see bots being used maliciously. Bots can be used in botnets (collections of computers to be controlled by third parties) for DDoS attacks, as spam bots that render advertisements on websites, as web spiders that scrape server data, and for distributing malware disguised as popular search items on download sites. Websites can guard against bots with CAPTCHA tests that verify users as human.

Bug

In the context of software, a bug is a flaw producing an undesired outcome. These flaws are usually the result of human error and typically exist in the source code or compilers of a program. Minor bugs only slightly affect a program's behavior and as a result can go for long periods of time before being discovered. More significant bugs can cause crashing or freezing. Security bugs are the most severe type of bugs and can allow attackers to bypass user authentication, override access privileges, or steal data. Bugs can be prevented with developer education, quality control, and code analysis tools.

Ransomware

Ransomware is a form of malware that essentially holds a computer system captive while demanding a ransom. The malware restricts user access to the computer either by encrypting files on the hard drive or locking down the system and displaying messages that are intended to force the user to pay the malware creator to remove the restrictions and regain access to their computer. Ransomware typically spreads like a normal computer worm ending up on a computer via a downloaded file or through some other vulnerability in a network service.

Rootkit

A rootkit is a type of malicious software designed to remotely access or control a computer without being detected by users or security programs. Once a rootkit has been installed it is possible for the malicious party behind the rootkit to remotely execute files, access/steal information, modify system configurations, alter software (especially any security software that could detect the rootkit), install concealed malware, or control the computer as part of a botnet. Rootkit prevention, detection, and removal can be difficult due to their stealthy operation. Because a rootkit continually hides its presence, typical security products are not effective in detecting and removing rootkits. As a result, rootkit detection relies on manual methods such as monitoring computer behavior for

irregular activity, signature scanning, and storage dump analysis. Organizations and users can protect themselves from rootkits by regularly patching vulnerabilities in software, applications, and operating systems, updating virus definitions, avoiding suspicious downloads, and performing static analysis scans.

Malware Symptoms

While the types of malware differ greatly in how they spread and infect computers, they all can produce similar symptoms. Computers that are infected with malware can exhibit any of the following symptoms:

- increased CPU usage;
- slow computer or web browser speeds;
- problems connecting to networks;
- freezing or crashing;
- modified or deleted files;
- appearance of strange files, programs, or desktop icons;
- programs running, turning off, or reconfiguring themselves (malware will often reconfigure or turn off antivirus and firewall programs);
- strange computer behavior;
- emails/messages being sent automatically and without user's knowledge (a friend receives a strange email from you that you did not send).

11. *True, false or no information? Find the sentences in the text that support your point of view.*

1) Adware/spyware bundles are significantly less dangerous than adware on its own.

2) Minor bugs are difficult to discover.

3) Ransomware is intended to force the user to pay the malware creator to remove the restrictions and regain access to their computer.

4) DDoS attacks overwhelm servers with requests until they are forced offline.

5) Computer viruses have the ability to self-replicate and spread independently while worms rely on human activity to spread.

6) Originally, bots aren't harmful because they are created for video gaming, internet auctions, online translation etc.

7) Spyware is capable of stealing sensitive information.

8) Appearance of strange files and programs means that the computer is infected.

12. *Ask questions about the types of malware using the following patterns.*

A. I would like to know, if /whether …

B. Can you tell me what/which/how/why …?

C. Does anybody know what/which/how/why …?

D. Are you sure that …?
E. Do you agree that …?

13. *Give a summary of the text "What is Malware?" using the expressions (see Appendix 2 for annotation details).*

14*. Read the text to learn about computer and network protection:*

Text 3. Anti-virus Software and Firewalls

Anti-virus software

Anti-virus software is a program or set of programs (software utility) that are designed to prevent, search for, detect, and remove software viruses, and other malicious software like worms, trojans, adware, and more.

These tools are critical for users to have installed and up-to-date because a computer without anti-virus software installed will be infected within minutes of connecting to the Internet. The bombardment is constant, with anti-virus companies update their detection tools constantly to deal with the more than 60,000 new pieces of malware created daily.

There are several different companies that build and offer anti-virus software and what each offers can vary but all perform some basic functions:

- scan specific files or directories for any malware or known malicious patterns;
- allow you to schedule scans to automatically run for you;
- allow you to initiate a scan of a specific file or of your computer, or of a CD or flash drive at any time;
- remove any malicious code detected – sometimes you will be notified of an infection and asked if you want to clean the file, other programs will automatically do this behind the scenes;
- show you the "health" of your computer.

Most anti-virus programs include an auto-update feature that permits the program to download profiles against new viruses, enabling the system to check for new threats. Antivirus programs are essential utilities for any computer but the choice of which one is very important. One AV program might find a certain virus or worm while another cannot, or vice-versa.

Anti-virus software searches the hard drive and external media attached to a computer for any potential viruses or worms. Broadly speaking, there are two main approaches to virus detection.

- Dictionary Approach. The anti-virus software checks a file and automatically refers to a dictionary of known viruses. If there is a match, the file is deleted, quarantined or repaired.

- Suspicious Behavior Approach. The anti-virus software monitors the behavior of all programs and flags any suspicious behavior. For example, a program might be flagged if it tries to change settings to the operating system or write to a certain directory.

There are several methods which antivirus engine can use to identify malware:

Sandbox detection

Sandbox detection is a particular behavioral-based detection technique that, instead of detecting the behavioral fingerprint at run time, executes the programs in a virtual environment, logging what actions the program performs. Depending on the actions logged, the antivirus engine can determine if the program is malicious or not. If not, then, the program is executed in the real environment.

Data mining

Data mining techniques are one of the latest approaches applied in malware detection. Data mining and machine learning algorithms are used to try to classify the behavior of a file (as either malicious or benign) given a series of file features that are extracted from the file itself.

Signature-based detection

Traditional antivirus software relies heavily upon signatures to identify malware. Substantially, when a malware arrives in the hands of an antivirus firm, it is analyzed by malware researchers or by dynamic analysis systems. Then, once it is determined to be a malware, a proper signature of the file is extracted and added to the signatures database of the antivirus software.

Although the signature-based approach can effectively contain malware outbreaks, malware authors have tried to stay a step ahead of such software by writing “oligomorphic”, “polymorphic” and, more recently, “metamorphic” viruses, which encrypt parts of themselves or otherwise modify themselves as a method of disguise, so as to not match virus signatures in the dictionary.

Heuristics

Many viruses start as a single infection and through either mutation or refinements by other attackers can grow into dozens of slightly different strains, called variants. Generic detection refers to the detection and removal of multiple threats using a single virus definition. For example, the Vundo Trojan has several family members, depending on the antivirus vendor’s classification. Symantec classifies members of the Vundo family into two distinct categories, *Trojan.Vundo* and *Trojan.Vundo.B*.

While it may be advantageous to identify a specific virus, it can be quicker to detect a virus family through a generic signature or through an inexact match to an existing signature. Virus researchers find common areas that all viruses in

a family share uniquely and can thus create a single generic signature. A detection that uses this method is said to be “heuristic detection”.

Firewall

A firewall is a system that provides network security by filtering incoming and outgoing network traffic based on a set of user-defined rules. In general, the purpose of a firewall is to reduce or eliminate the occurrence of unwanted network communications while allowing all legitimate communication to flow freely. In most server infrastructures, firewalls provide an essential layer of security that, combined with other measures, prevent attackers from accessing your servers in malicious ways.

There are three basic types of network firewalls: packet filtering (stateless), stateful, and application layer.

Packet filtering, or stateless, firewalls work by inspecting individual packets in isolation. As such, they are unaware of connection state and can only allow or deny packets based on individual packet headers.

Stateful firewalls are able to determine the connection state of packets, which makes them much more flexible than stateless firewalls. They work by collecting related packets until the connection state can be determined before any firewall rules are applied to the traffic.

Application firewalls go one step further by analyzing the data being transmitted, which allows network traffic to be matched against firewall rules that are specific to individual services or applications. These are also known as proxy-based firewalls.

In addition to firewall software, which is available on all modern operating systems, firewall functionality can also be provided by hardware devices, such as routers or firewall appliances.

15. *True, false or no information? Find the sentences in the text that support your point of view.*

1) Anti-virus software is a program that provides network security by filtering incoming and outgoing network traffic.

2) Anti-virus software offered by different companies performs five basic functions.

3) One of the latest approaches in malware detection is known to be data mining technique.

4) A good antivirus suite is an excellent first line of defense for your PC.

5) Sandbox detection is a particular dictionary-based detection technique.

6) Firewalls prevent attackers from accessing servers in malicious ways.

7) Organizations can protect themselves from rootkits by updating virus definitions, avoiding suspicious downloads, and performing static analysis scans.

16. *Ask questions about types of firewalls and virus detection methods. Use the following patterns.*

A. I would like to know, if /whether …

B. Can you tell me what/which/how/why …?

C. Does anybody know what/which/how/why …?

D. Are you sure that …?

E. Do you agree that …?

17. *Give a summary of the text Anti-virus Software and Firewalls (see Appendix 2 for annotation details).*

Part II. Language

18. Match the terms to their definitions.

1) ransomware	a) software utility designed to prevent, search for, detect, and remove malicious software
2) sandbox detection	b) software program created to automatically perform specific operations
3) computer security	c) a form of malware that essentially holds a computer system captive while demanding a ransom
4) anti-virus software	d) the protection of information in its electronic form
5) bot	e) a behavioral-based detection technique executing the programs in a virtual environment

19. *Match the malware types with their definitions:*

a) rootkit; b) spyware; c) adware; d) virus; e) worm; f) bug; g) Trojan.

1) A type of malware that disguises itself as a normal file or program to trick users into downloading and installing malware.

2) A type of malware that automatically delivers advertisements.

3) A type of malware causing harm to their host networks by consuming bandwidth, overloading web servers and containing “payloads”.

4) A type of malicious software designed to remotely access or control a computer.

5) A program error causing crashing or freezing.

6) A form of malware capable of copying itself and spreading to other computers.

7) A type of malware spying on users activity without their knowledge.

20. *Put in the linking words (conjunctions) both ... and, either ... or, neither ... nor, not only ... but also.*

1. ____ viruses ____ worms are designed to steal data, delete files or create botnets. 2. To detect malware ____ dictionary approach ____ suspicious behavior approach is used. 3. Anti-virus programs are critical for users to have

installed because they ____ search for and detect malware ____ remove it. 4. ____ management ____ other departments can access these files if they are not authorized. 5. AVG Antivirus Free ____ is quite configurable ____ is very simple to use. 6. You can ____ install additional anti-malware software ____ replace your existing security software with a whole new suite designed to protect against all kinds of malware. 7. This antivirus set ____ scans your computer fast ____ has the best phishing protection.

21. *Compare the antivirus sets using the constructions "as ... as" and "not so ... as":*

1) Bit Defender Antivirus quietly gets on with the job of identifying and eliminating anything that poses a risk to your safety and security. AVG Antivirus Free is vocal with its notifications (silent).

2) AVG Antivirus Free scans your computer rather slowly. Avast Antivirus doesn't slow your computer (fast).

3) With AVG Antivirus Free you can use your mobile to scan your PC remotely. Both Bit Defender Antivirus and Avast Antivirus don't possess such option (clever).

22. *Make sentences using Complex Subject and Complex Object Constructions.*

Pattern: A firewall is a system that provides network security by filtering incoming and outgoing network traffic (know).

- *A firewall is known to be* a system that provides network security by filtering incoming and outgoing network traffic.
- CS specialists know *a firewall to be* a system that provides network security by filtering incoming and outgoing network traffic.

1. Traditional antivirus software relies heavily upon signatures to identify malware (report). 2. Ransomware typically spreads like a normal computer worm (know). 3. Computer security has become increasingly important since the late 1960s (say). 4. Data mining and machine learning algorithms help classify the behavior of a file (expect). 5. Assigning an individual password protects a computer system (suppose).

23. *Translate into English.*

1. Компьютерная безопасность – это защита компьютерных систем и хранящихся в них данных. 2. Вредоносное программное обеспечение используется для того, чтобы нанести вред компьютерной системе и повредить или украсть информацию. 3. Имеются признаки, которые позволяют определить, заражен ли компьютер вредоносными программами. 4. Компьютерные черви обычно наносят вред сетям, перегружая серверы. 5. Особенно опасны ошибки в системе безопасности компьютера. 6. Необходимо

постоянно обновлять антивирусное программное обеспечение, так как компьютерная система заражается в течение нескольких минут работы в сети. 7. Руткит – это набор компьютерных утилит или специальный модуль ядра, устанавливаемый взломщиком сразу после получения прав суперпользователя. 8. Программа-вымогатель блокирует доступ к компьютерной системе, требуя затем выкуп для восстановления исходного состояния. 9. В настоящее время песочницы используют для запуска непроверенного кода из неизвестных источников, а также для обнаружения и анализа вредоносных программ. 10. Сигнатурный анализ выявляет характерные черты каждого вируса, а эвристический анализ основан на предположении, что новый вирус похож на уже известный.

Part III. Listening, Speaking and Writing

24. *Find the definitions of the computer crimes listed below.*

Computer crime, cyber terrorism, cyberbullying or cyberstalking, creating Malware, denial of Service attack, espionage, fraud, harvesting, identity theft, intellectual property theft, phishing, salami slicing, scam, spamming, spoofing, unauthorized access, wiretapping.

25. *Prepare a presentation about any computer crime from the list above. Speak about the protection measures (see Appendix 3).*

26. *Discuss how different malware types can be dangerous for ordinary users/businesses/banks.*

27. *Discuss security recommendations from the IBM report given below.*

Preparing for and Responding to Ransomware

With the financial returns on ransomware growing north of a $1 billion for cybercriminals, IBM anticipates it and other extortion schemes will continue to grow. Both businesses and consumers can take some steps to help defend themselves from ransomware. IBM X-Force experts recommend the following tips to protect yourself and your business.

Be Vigilant. If an email looks too good to be true, it probably is. Be cautious when opening attachments and clicking links.

Backup Your Data. Plan and maintain regular backup routines. Ensure that backups are secure, and not constantly connected or mapped to the live network. Test your backups regularly to verify their integrity and usability in case of emergency.

Disable Macros. Document macros have been a common infection vector for ransomware in 2016. Macros from email and documents should be disabled by default to avoid infection.

Patch and Purge. Maintain regular software updates for all devices, including operating systems and apps. Update any software you use often and delete applications you rarely access.

28. *Read experts predictions about future of cybersecurity. Discuss in pairs which prediction is the most feasible one. Are there any statements that you disagree with?*

1) The proliferation of IoT and digitization into our day to day life, everyone and everything will become a potential target (like watches, mobile devices, television, kitchen appliances, etc.) in the coming future.

2) Ransomware will remain a major and rapidly growing threat. Attacks will get more personal as cyber extortionists will devise new ways to target victims.

3) The automotive industry will face vehicle cyber attacks. The various electrical components in a vehicle are connected by means of an internal network and if hackers gain access to a peripheral electronic control unit, they could take complete control of safety critical components such as engines or brakes.

4) AI, machine learning along with big data will work in sync to form a powerful technology stack to help businesses identify and reduce bottlenecks in their cyber security plans to battle ever-evolving attacks in digital world.

5) The consultancy Frost and Sullivan estimates, worldwide by 2020, there will be 1.5 million more security jobs than skilled people to fill them. So, cybersecurity is likely to decrease.

29. *Discuss in a small group which cybercrimes are the gravest (the most serious ones), offer an appropriate punishment and ways to prevent this crime. Present your ideas to the class.*

Crime	Punishment	Ways to prevent it

30. *Statistics. Ask one of the following questions to all the members of your group. Present the results of your poll.*

1) Find out how many people in a group have been victims of cyber criminals? Which crimes?

2) Find out how many people in a group have ever committed a cybercrime? Which crimes?

3) Find out how many people in a group suppose that cyber security problem will get worse? Why?

4) Find out how many people in a group suppose that cyber security problem will be solved in the coming future? How?

5) Find out how many people in a group is going to work in cyber security? Which sphere?

6) Find out how many people in a group want to legalize cyber piracy? Why?

7) Find out how many people in a group are concerned about their data security and update their antivirus regularly? How often?

8) Find out how many people in a group think that governments have the right to censor materials on the Internet?

31. *Surf the Internet to find out the information about the latest cybercrimes. Get prepared with a short story about this crime (7–10 sentences). Describe: when the crime was committed, who committed it, what the punishment was.*

Unit 13. NEW HORIZONS IN IT & TELECOMMUNICATIONS

1. *Read about tech innovations expected in the nearest future.*

To predict future isn't an easy task, but every year many lists containing technological innovations are published. Some of them dealing with IT and communications are listed below.

1) Reality Technologies: Augmented Reality.

2) Internet of Things.

3) Big Data.

4) Artificial Intelligence.

5) Quantum Computer.

2. *Explain which of the technological innovations you find the most interesting one?*

3. *Look through the texts 1–5 and find short descriptions/definitions of every technology listed above.*

4. *Find the meanings of unknown words in the dictionary. Use the online dictionaries www.multitran.ru or www.context.reverso.net.*

Part I. Text

5. *Read and translate the text.*

Text 1. Reality Technologies: Augmented Reality

Augmented Reality can be described as an enhanced version of reality where live direct or indirect views of physical real-world environments are augmented with superimposed computer-generated images over a user's view of

the real-world, thus enhancing one's current perception of reality. The origin of the word *augmented* is *augment*, which means *to add or enhance something*. In the case of Augmented Reality (also called AR), graphics, sounds, and touch feedback are added into our natural world to create an enhanced user experience.

Unlike virtual reality, which requires you to inhabit an entirely virtual environment, augmented reality uses your existing natural environment and simply overlays virtual information on top of it. As both virtual and real worlds harmoniously coexist, users of augmented reality experience a new and improved natural world where virtual information is used as a tool to provide assistance in everyday activities.

Applications of augmented reality can be as simple as a text-notification or as complicated as an instruction on how to perform a life-threatening surgical procedure. They can highlight certain features, enhance understandings, and provide accessible and timely data. Cell phones apps and business applications by companies using augmented reality are a few of the many applications driving augmented reality application development.

Augmented realities can be displayed on a wide variety of displays, from screens and monitors, to handheld devices or glasses. Google Glass and other head-up displays (HUD) put augmented reality directly onto your face, usually in the form of glasses. Handheld devices employ small displays that fit in users hands, including smartphones and tablets. As reality technologies continue to advance, augmented reality devices will gradually require less hardware and start being applied to things like contact lenses and virtual retinal displays.

Sensors and cameras are known to be key components to Augmented Reality devices. Sensors are usually on the outside of the augmented reality device, and gather a user's real world interactions and communicate them to be processed and interpreted. Cameras are also located on the outside of the device, and visually scan to collect data about the surrounding area.

Augmented reality devices are basically mini-supercomputers packed into tiny wearable devices. These devices require significant computer processing power and utilize many of the same components that our smartphones do. These components include a CPU, a GPU, flash memory, RAM, Bluetooth/WiFi microchip, GPS microchip, and more. Advanced augmented reality devices, such as the Microsoft Hololens utilize an accelerometer (to measure the speed in which your head is moving), a gyroscope (to measure the tilt and orientation of your head), and a magnetometer (to function as a compass and figure out which direction your head is pointing) to provide for truly immersive experience.

Reality applications are practically limitless in terms of applicability and have the ability to play a vital role in all aspects of life. These reality technologies will change the way we consume information and entertainment, communicate, express and share creativity, and conduct business. Cases where

this revolutionary technology is currently being applied to include aviation for flight training and pilot assistance, business to increase workplace productivity, communication, design, education, surgery, entertainment, gaming, and more.

6. *Read and translate the text.*

Text 2. Internet of Things

Internet of Things (IoT) is defined as the interconnection via the Internet of computing devices embedded in everyday objects, enabling them to send and receive data. The Internet of Things refers to the ever-growing network of physical objects that feature an IP address for Internet connectivity, and the communication that occurs between these objects and other Internet-enabled devices and systems.

The Internet of Things is a difficult concept to define precisely. In fact, there are many different groups that have defined the term, although its initial use has been attributed to Kevin Ashton, an expert on digital innovation. Each definition shares the idea that the first version of the Internet was about data created by people, while the next version is about data created by things. In 1999, Ashton said it best in this quote from an article in the RFID Journal: "If we had computers that knew everything there was to know about things – using data they gathered without any help from us – we would be able to track and count everything, and greatly reduce waste, loss and cost. We would know when things needed replacing, repairing or recalling, and whether they were fresh or past their best".

Although the concept wasn't named until 1999, the Internet of Things has been in development for decades. The first Internet appliance, for example, was a Coke machine at Carnegie Melon University in the early 1980s. The programmers could connect to the machine over the Internet, check the status of the machine and determine whether or not there would be a cold drink awaiting them, should they decide to make the trip down to the machine.

The Internet of Things extends Internet connectivity beyond traditional devices like desktop and laptop computers, smartphones and tablets to a diverse range of devices and everyday things that utilize embedded technology to communicate and interact with the external environment, all via the Internet. Examples of objects that can fall into the scope of Internet of Things include connected security systems, thermostats, cars, electronic appliances and lights in household and commercial environments, alarm clocks, speaker systems, vending machines and more. As far as the reach of the Internet of Things, there are more than 12 billion devices that can currently connect to the

Internet, and researchers at IDC estimate that by 2020 there will be 26 times more connected things than people.

IoT is a computing concept that describes a future where everyday physical objects will be connected to the Internet and be able to identify themselves to other devices. The term is closely identified with RFID as the method of communication, although it also may include other sensor technologies, wireless technologies or QR codes. The IoT is significant because an object that can represent itself digitally becomes something greater than the object by itself. No longer does the object relate just to you, but is now connected to surrounding objects and database data. When many objects act in unison, they are known as having "ambient intelligence". Most of us think about being connected in terms of computers, tablets and smartphones. IoT describes a world where just about anything can be connected and communicate in an intelligent fashion. In other words, with the Internet of Things, the physical world is becoming one big information system.

Internet of Things (IoT) is a scenario in which objects, animals or people are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. IoT has evolved from the convergence of wireless technologies, micro-electromechanical systems (MEMS) and the Internet. A thing, in the Internet of Things, can be a person with a heart monitor implant, a farm animal with a biochip transponder, an automobile that has built-in sensors to alert the driver when tire pressure is low or any other natural or man-made object that can be assigned an IP address and provided with the ability to transfer data over a network. So far, the Internet of Things has been most closely associated with machine-to-machine (M2M) communication in manufacturing and power, oil and gas utilities. Products built with M2M communication capabilities are often referred to as being *smart.*

The Internet of Things has long been talked about amongst tech insiders as the next big innovation in home technology. In recent years, IoT has begun carve a niche for itself in everyday life with the growing adoption of systems like Google's Home and Amazon's Alexa. These devices will continue to integrate more aspects of the home into one harmonious system by utilizing the internet, allowing a user to control anything from the air conditioning to their security via voice command and a small personal assistant. Apple has announced its plans to roll out the HomePod this year and Samsung is reportedly working on their Bixby technology in order to compete with the success of the Google and Amazon systems. You can expect that one of these devices will be simplifying life in your home and the homes around you by 2020.

7. Read and translate the text.

Text 3. Big Data History and Current Considerations

While the term "big data" is relatively new, the act of gathering and storing large amounts of information for eventual analysis is ages old. The concept gained momentum in the early 2000s when industry analyst Doug Laney articulated the now-mainstream definition of big data as the three Vs – Volume, Velocity, Variety.

Volume. Organizations collect data from a variety of sources, including business transactions, social media and information from sensor or machine-to-machine data. In the past, storing it would've been a problem – but new technologies (such as Hadoop) have eased the burden.

Velocity. Data streams in at an unprecedented speed and must be dealt with in a timely manner. RFID tags, sensors and smart metering are driving the need to deal with torrents of data in near-real time.

Variety. Data comes in all types of formats – from structured, numeric data in traditional databases to unstructured text documents, email, video, audio, stock ticker data and financial transactions.

The amount of data being created and stored on a global level is almost inconceivable, and it just keeps growing. That means there's even more potential to glean key insights from business information – yet only a small percentage of data is actually analyzed. What does that mean for businesses? How can they make better use of the raw information that flows into their organizations every day?

The importance of big data doesn't revolve around how much data you have, but what you do with it. You can take data from any source and analyze it to find answers that enable cost reductions, time reductions, new product development and optimized offerings, and smart decision making. When you combine big data with high-powered analytics, you can accomplish business-related tasks such as:

- determining root causes of failures, issues and defects in near-real time;
- generating coupons at the point of sale based on the customer's buying habits;
- recalculating entire risk portfolios in minutes;
- detecting fraudulent behavior before it affects your organization.

Big data affects organizations across practically every industry.

Banking

With large amounts of information streaming in from countless sources, banks are faced with finding new and innovative ways to manage big data. While it's important to understand customers and boost their satisfaction, it's

equally important to minimize risk and fraud while maintaining regulatory compliance. Big data brings big insights, but it also requires financial institutions to stay one step ahead of the game with advanced analytics.

Education

Educators armed with data-driven insight can make a significant impact on school systems, students and curriculums. By analyzing big data, they can identify at-risk students, make sure students are making adequate progress, and can implement a better system for evaluation and support of teachers and principals.

Government

When government agencies are able to harness and apply analytics to their big data, they gain significant ground when it comes to managing utilities, running agencies, dealing with traffic congestion or preventing crime. But while there are many advantages to big data, governments must also address issues of transparency and privacy.

Health Care

Patient records. Treatment plans. Prescription information. When it comes to health care, everything needs to be done quickly, accurately – and, in some cases, with enough transparency to satisfy stringent industry regulations. When big data is managed effectively, health care providers can uncover hidden insights that improve patient care.

Manufacturing

Armed with insight that big data can provide, manufacturers can boost quality and output while minimizing waste – processes that are key in today's highly competitive market. More and more manufacturers are working in an analytics-based culture, which means they can solve problems faster and make more agile business decisions.

Retail

Customer relationship building is critical to the retail industry – and the best way to manage that is to manage big data. Retailers need to know the best way to market to customers, the most effective way to handle transactions, and the most strategic way to bring back lapsed business. Big data remains at the heart of all those things.

8. *Read and translate the text.*

Text 4. What is Artificial intelligence?

Artificial intelligence (AI) is wide-ranging branch of computer science concerned with building smart machines capable of performing tasks that typically require human intelligence. AI is an interdisciplinary science with

multiple approaches, but advancements in machine learning and deep learning are creating a paradigm shift in virtually every sector of the tech industry.

Less than a decade after breaking the Nazi encryption machine Enigma and helping the Allied Forces win World War II, mathematician Alan Turing changed history a second time with a simple question: "Can machines think?" Turing's paper "Computing Machinery and Intelligence" (1950), and it's subsequent Turing Test, established the fundamental goal and vision of artificial intelligence.

The expansive goal of artificial intelligence has given rise to many questions and debates. So much so, that no singular definition of the field is universally accepted.

In their groundbreaking textbook "Artificial intelligence: a Modern Approach" authors Stuart Russell and Peter Norvig approach the question by unifying their work around the theme of intelligent agents in machines. With this in mind, AI is "the study of agents that receive percepts from the environment and perform actions". Norvig and Russell go on to explore four different approaches that have historically defined the field of AI:

1) thinking humanly;
2) thinking rationally;
3) acting humanly;
4) acting rationally.

The first two ideas concern thought processes and reasoning, while the others deal with behavior. Norvig and Russell focus particularly on rational agents that act to achieve the best outcome, noting "all the skills needed for the Turing Test also allow an agent to act rationally".

While addressing a crowd at the Japan AI Experience in 2017, DataRobot CEO Jeremy Achin began his speech by offering the following definition of how AI is used today: "AI is a computer system able to perform tasks that ordinarily require human intelligence... Many of these artificial intelligence systems are powered by machine learning, some of them are powered by deep learning and some of them are powered by very boring things like rules".

There exist the following AI examples:
smart assistants (like Siri and Alexa);
manufacturing and drone robots;
optimized, personalized healthcare treatment recommendations;
conversational bots for marketing and customer service;
robo-advisors for stock trading;
spam filters on email;
social media monitoring tools for dangerous content or false news;
song or TV show recommendations from Spotify and Netflix;
self-driving cars;
neural networks.

9. *Read and translate the text.*

Text 5. Quantum computers

Quantum computers are incredibly powerful machines that take a new approach to processing information. Built on the principles of quantum mechanics, they exploit complex and fascinating laws of nature that are always there, but usually remain hidden from view. By harnessing such natural behavior, quantum computing can run new types of algorithms to process information more holistically. They may one day lead to revolutionary breakthroughs in materials and drug discovery, the optimization of complex manmade systems, and artificial intelligence. Quantum computers are expected to open doors that we once thought would remain locked indefinitely.

Classical computers encode information in bits. Each bit can take the value of 1 or 0. These 1s and 0s act as on/off switches that ultimately drive computer functions. Quantum computers are based on qubits, which operate according to two key principles of quantum physics: superposition and entanglement. Superposition means that each qubit can represent both a 1 and a 0 at the same time. Entanglement means that qubits in a superposition can be correlated with each other; that is, the state of one (whether it is a 1 or a 0) can depend on the state of another. Using these two principles, qubits can act as more sophisticated switches, enabling quantum computers to function in ways that allow them to solve difficult problems that are intractable using today's computers.

Quantum systems may untangle the complexity of molecular and chemical interactions leading to the discovery of new medicines and materials. They may enable ultra-efficient logistics and supply chains, such as optimizing fleet operations for deliveries during the holiday season. They may help us find new ways to model financial data and isolate key global risk factors to make better investments. And they may make facets of artificial intelligence such as machine learning much more powerful.

Areas that may be revolutionized by quantum computing.

Medicine & Materials

Untangling the complexity of molecular and chemical interactions leading to the discovery of new medicines and materials.

Supply Chain & Logistics

Finding the best solutions for ultra-efficient logistics and global supply chains, such as optimizing fleet operations for deliveries during the holiday season.

Financial Services

Finding new ways to model financial data and isolating key global risk factors to make better investments.

Artificial Intelligence

Making facets of artificial intelligence such as machine learning much more powerful when data sets are very large, such as in searching images or video.

10. *Prepare short summaries of two from the texts above (see Appendix 2 for annotation details).*

11. *Use the texts above to prepare oral presentations about new developments in IT& Telecoms (see Appendix 3).*

Application form

International Student Exchange Program
Study Abroad Office
Towson University
Psychology Building, Rm. #408
Towson, MD 21252
T. 410-704-2451
F. 410-704-4703

International Student Exchange Application Form

TOWSON UNIVERSITY

Office Use Only

A. Exchange Information

Length of Exchange: ☐ One Semester ☐ Two Semesters

Beginning Date: ☐ Fall Year _____ ☐ Spring Year _____

KANSAI GAIDAI STUDENTS ONLY: Will you be attending the TU English Language Center for your first semester at TU?
☐ Yes ☐ No

B. Personal Data (please enter your name exactly as it appears on your passport

Date of Birth (MM/DD/YYYY): _____ Gender: ☐ Male ☐ Female

First Name/Given Name: _____

Middle Name: _____

Last Name/Family Name: _____

Any Previous Names: _____

Street Name & Number: _____

City, State/Province: _____

Country & Postal Code: _____

Home Telephone Number: _____

E-mail Address: _____

City and Country of Birth: _____

Country of Citizenship: _____

Country of Permanent Residence: _____

Is English Your Native Language? ☐ Yes ☐ No

If no,what is your native language? _____

C. Academic Information

Current Major/Area of Study: _____

Current Minor/Concentration: _____

Class standing: ☐ Undergraduate ☐ Graduate

Appendix 2

Making a text summary

Основная схема устного пересказа любого текста/статьи

1. The title of the text/article	The text/article is headlined … The headline/title of the text/article I have read is …
2. The main idea of the text/article	The main idea of the text/article is … The text/article is about …/The text/article is devoted to … The text/article deals (is concerned) with … The text/article touches upon the issue of … The purpose of the text/article is to give the reader some information on … The aim of the text/article is to provide the reader with some material on …
3. The contents of the text/article. Some facts, names, figures	The text is divided into … logical parts. The first/second/third logical part deals with the problems/statements/points of/contains information about/gives the definition of … The author starts by telling (the reader) that … The author (of the text/article) writes (***reports, states, stresses, thinks, notes, considers, believes, analyses, points out, says, describes***) that …/***draws reader's attention to***... Much attention is given to … According to the text/article … The text/article goes on to say that … It is reported (***shown, stressed***) that … It is spoken in detail about … From what the author says it becomes clear that … The fact that … is stressed. The text/article gives a detailed analysis of … Further the author reports (***writes, states, stresses, thinks, notes, considers, believes, analyses, points out, says, describes***) that … /***draws reader's attention to*** ... In conclusion the author writes (***reports, states, stresses, thinks, notes, considers, believes, analyses, points out, says, describes***) that …/***draws reader's attention to*** ... The author comes to the conclusion that … The following conclusions are drawn: …
4. Your opinion	I found the text/article (rather) interesting (important, useful) ***as/because*** … ***I think/In my opinion/To my mind*** the text/article is (rather) interesting (important, informative, instructive, useful, relevant) ***as/because*** … I found the text/article too hard to understand/rather boring ***as/because*** … What I found most interesting/ boring/shocking/amusing/irritating/baffling/ incredible, etc. about this text/article is ...

Appendix 3

Making an oral report

Основная схема устного рассказа по теме

1. The beginning (приветствие; представление себя, темы)	I would like to talk about …
2. Ordering the main points (план рассказа)	Firstly ... secondly ... thirdly ... lastly ... First of all ... then ... next ... after that ... finally ...
3. Introducing the subject	I'd like to start by ... Let's begin by ... First of all, I'll ... Starting with ... I'll begin by ...
4. Starting another subject	Now we'll move on to ... Let me turn now to ... Next ... Turning to ... I'd like now to discuss ... Let's look now at ...
5. Summarizing and concluding	In conclusion, ... Right, let's sum up … I'd like now to recap ... Let's summarize briefly what we've looked at ...
6. Express pros and cons/your own point of view on the problem discussed	To my mind, … In my opinion, … From my point of view …

Tips for oral presentation

Introduction

- Give background (relevant and surprising facts).
- State purpose of presentation:

  In my presentation I'll be proposing …
  In my presentation today I'm going to explain …
  This morning I would like to review …
  The subject (topic) of this presentation is …

- Outline development:

  I'll be developing three main points. First, I'll give you … Second, … Lastly, …
  My presentation will be in two main parts. In the first part I'll … And then I'll …
  Firstly, I'd like to … Secondly, we can … And I'll finish with …

Development

- Develop the 1 point:

  I'd like to start with an overview of the …
  Let's start with an overview of …
  I'll begin by analyzing the …
  Let me start with some facts about …

- Develop the 2 point:

  So that's the general picture for … and now let's look at …
  That completes my overview of … so now I'd like to move on to …
  If I could now turn to …
  My next point is …
  Now, turning to …
  Now, what about …?
  Let me now move on to …

Conclusion

- Summarize the key points:

  So, to summarize (sum up) …
  At this stage I'd like to go over (run through) …
  So, as we've seen in this presentation today …
  As I've explained …

- Conclude:

  We suggest, propose, recommend …

- Invite questions and thank the audience:

  I'd happy to answer any questions.
  If you have any questions, I'd be pleased to answer them.
  I would welcome any comments (suggestions).
  Thank you for your attention.

Handling questions

- Clarify the question:

  So, what you're asking is …
  If I understand the question correctly, you would like to know …
  When you say … do you mean …?
  I'm sorry I didn't hear. Which slide was it?
  Sorry, could you repeat that?

- Evade difficult or hostile questions:

  Yes, I quite see your point… However, I know you'll appreciate …
  Yes, it's something we've thought about a lot. But …
  I know it's difficult to accept the decision, but the evidence is there …
  I'm afraid I'm not the right person to answer that.
  X is a much better person to answer that.
  Could we leave that till later?

List of Abbreviations

AI	Artificial Intelligence
ASDL	Asymmetric Digital Subscriber Line
ATM	Automatic Teller Machine
BAN	Body Area Network
CAN	Campus Area Network
CCTV	Closed-Circuit TV
CD	Compact Disk
CPU	Central Processing Unit
DAB	Digital Audio Broadcasting
DAW	Digital Audio Workstation
DNA	Delivery Network Accelerator
DSL	Digital Subscriber Line
DTP	Desktop Publishing
DV	Digital Video (camera)
DVD	Digital Video Disk
E-commerce	Electronic Commerce
FTP	File Transfer Protocol
GPRS	General Packet Radio Service
GPU	Graphics Processing Unit
GPS	Global Positioning System
GSM	Global System for Mobile communication
HAN	Home Area Network
HD	High Definition
HMD	Head-Mounted Display
HTML	Hyper Text Markup Language
ICT	Information Communication Technology
ID	Identification
IRC	Internet Relay Chat
ISP	Internet Service Provider
IT	Information Technology
Jpeg	Joint Photographic Experts Group
LAN	Local Area Network
LBS	Location-Based Services
LCD	Liquid Crystal Display
LED	Light Emitting Diode (TV)
LMS	Learning Management System
LTE	Long Term Evolution
MAN	Metropolitan Area Network
MP3	Media Player 3 (player)
MPEG	Moving Picture Experts Group

MPLS	Multi-Protocol Label Switching
MSP	Managed Service Provider
OS	Operating System
OSI	Open System Interconnection model
OSS	Open Source Software
PA	Personal Assistant
PABX	Private Branch Exchange
PAN	Personal Area Network
PBX	Private Branch Exchange
PC	Personal Computer
PDA	Personal Digital Assistant
PIN	Personal Identification Number
Ping	Packet Internet Groper (test)
POP	Points of Presence
PSTN	Public Switched Telephone Network
PTT	Public Telephone and Telegraph
RAM	Random Access Memory
ROM	Read only Memory
RW	Read-Write
RFID	Radio Frequency Identification
SaaS	Software as s Service
SAN	Storage area Network
SIM-card	Subscriber Identification Module
SME	Small & Medium Size Enterprises
SMS	Short Message Service
TCP/IP	Transmission Control Protocol/Internet Protocol
TFT	Thin Film Transistor (screen)
TV	Television
VLE	Virtual Leaning Environment
VoIP	Voice over IP
VPN	Virtual Private Network
VR	Virtual Reality
VRML	Virtual Reality Modeling Language
UMTS	Universal Mobile Telecom System
UPS	Uninterruptable Power Supply
URL	Uniform Resource Locator
USB	Universal Serial Bus
WAN	Wide Area Network
WAP	Wireless Application Protocol
Wi-Fi	Wireless Fidelity
Wi-Max	Worldwide Interoperability for Microwave Access
WLAN	Wireless Local Area Network
WWW	World Wide Web

СПИСОК ЛИТЕРАТУРЫ

1. Английский язык в области компьютерной техники и технологий. Professional English for Computing : учеб. пособие / Л. В. Квасова [и др.]. – 3-е изд., стер. – Москва : КНОРУС, 2014. – 176 с.

2. *Евдокимова, Н. В.* Английский язык для IT-специалистов: продвинутый уровень / Н. В. Евдокимова. – Ростов-на-Дону : Феникс, 2014. – 334 с.

3. Компьютерная техника. Computer Engineering : учеб. пособие / М. Г. Бондарев [и др.] ; под общей редакцией Г. А. Краснощековой. – 4-е изд., стер. – Москва : Флинта : Наука, 2016. – 288 с.

4. Микроэлектроника: настоящее и будущее. Microelectronics: present and future : учеб. пособие по английскому языку для технических вузов / М. А. Бух, Л. П. Зайцева. – 3-е изд., испр. и доп. – Москва : Высшая школа, 2008. – 262 с.

5. *Радовель, В. А.* Английский язык в сфере информационных технологий. English in the field of Information Technology : учебно-практическое пособие / В. А. Радовель. – Москва : КНОРУС, 2017. – 232 с.

6. *Слепович, В. С.* Деловой английский. Business communication : учеб. пособие / В. С. Слепович. – Минск : ТетраСистемс, 2002. – 256 с.

7. Computer-security [Электронный ресурс]. – URL: https://www.britannica.com/technology/computer-security (дата обращения: 20.08.2020).

8. *Esteras, S. R.* Professional English in Use : for Computers and the Internet / S. R. Esteras, E. M. Fabre. – Cambridge : Cambridge University Press, 2007. – 118 с.

9. *Gourlay, L.* English for IT and the Internet / L. Gourlay, P. Hullock. – Thomson, 2006. – 128 с.

10. *McCarthy, T. R.* English for Telecoms and Information Technology / T. R. McCarthy, M. Duckworth. – Oxford University Press, 2007. – 95 с.

11. *Murphy, R.* English Grammar in Use : book for intermediate students of English / R. Murhy. – 4th edition. – Cambridge : Cambridge University Press, 2012. – 380 с.

12. *Murphy, R.* Essential Grammar in Use : book for elementary students of English / R. Murhy. – 4th edition. – Cambridge : Cambridge University Press, 2015. – 320 с.

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