Учреждение образования

«Брестский государственный технический университет»

Факультет экономический

Кафедра лингвистических дисциплин и межкультурных коммуникаций

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| СОГЛАСОВАНО | СОГЛАСОВАНО |
| Заведующий кафедрой | Декан факультета |
| _____ В.И.Рахуба | _____ О.П.Мешик |
| «26» 11 2024 г. | «10» 12 2024 г. |

**ЭЛЕКТРОННЫЙ**
**УЧЕБНО-МЕТОДИЧЕСКИЙ КОМПЛЕКС**
**по учебной дисциплине**
**ИНОСТРАННЫЙ ЯЗЫК (АНГЛИЙСКИЙ)**

для специальности
6-05-0811-03 Мелиорация и водное хозяйство

Составитель: старший преподаватель, м.п.н. Шпудейко Л.Н.

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рег. № УМК 04125-39

**ПОЯСНИТЕЛЬНАЯ ЗАПИСКА**
**к электронному учебно-методическому комплексу**
**по учебной дисциплине «Иностранный язык (английский)»**
**для специальности**
**6-05-0811-03 Мелиорация и водное хозяйство**

*Актуальность изучения дисциплины*

Статус иностранного языка как общеобразовательной дисциплины, реально востребуемой в практической и интеллектуальной деятельности специалиста, является в современном поликультурном и многоязычном мире особенно значимым. Иностранный язык рассматривается не только в качестве средства межкультурного и профессионального общения, но и средства формирования личности как субъекта национальной и мировой культуры.

*Цель и задачи дисциплины*

Главная *цель* обучения иностранному языку заключается в формировании иноязычной коммуникативной компетенции будущего специалиста, позволяющей использовать иностранный язык как средство межличностного и профессионального общения. Достижение главной цели предполагает комплексную реализацию познавательной, развивающей, воспитательной и практической целей.

В качестве стратегической интегративной компетенции в процессе обучения иностранным языкам выступает коммуникативная компетенция в единстве всех составляющих: языковой, речевой, социокультурной, компенсаторной, учебно-познавательной компетенций.

Основными *задачами* изучения дисциплины являются:

– унификация полученных ранее умений и навыков чтения текстов на расширенном языковом материале;

– формирование умений и навыков чтения и понимания текстов по специальности в ситуациях поиска смысловой информации;

– владение профессиональной лексикой;

– знакомство с историей и культурой страны изучаемого языка.

В результате изучения дисциплины «Иностранный язык» студент должен:

знать:

– особенности системы изучаемого иностранного языка в его фонетическом, лексическом и грамматическом аспектах;

– социокультурные нормы бытового и делового общения в современном поликультурном мире;

– историю и культуру страны изучаемого языка;

– основные формы культурной коммуникации;

уметь:

– вести общение профессионального и социокультурного характера на иностранном языке, сочетая диалогические и монологические формы речи;

– читать литературу на иностранном языке по профилю обучения (изучающее, ознакомительное, просмотровое и поисковое чтение);

– использовать иностранный язык в качестве инструмента профессиональной деятельности: перевод, реферирование и аннотирование профессионально ориентированных и научных текстов, выступление с публичной речью;

– использовать стилистические нормы иностранного языка в соответствии с ситуацией профессиональных и деловых взаимоотношений;

владеть:

– навыками чтения и перевода со словарем иностранной литературы по правилам речевого этикета;

– рациональным и эффективным языковым поведением в ситуациях межкультурной коммуникации.

*Краткое описание электронного учебно-методического комплекса (для кого предназначен, на основании каких документов разработан)*

Электронный учебно-методический комплекс предназначен для студентов специальности 6-05-0811-03 Мелиорация и водное хозяйство.

ЭУМК разработан в соответствии со следующими документами:

1. Требованиями кодекса Республики Беларусь «Об образовании» от 13.01.2011г. № 243-З (с дополнениями и изменениями).

2. Положением об учебно-методическом комплексе на уровне высшего образования, утвержденным постановлением Министерства образования Республики Беларусь №167 от 26.07.2011 г. «Об утверждении положений об учебно-методических комплексах по уровням основного образования».

3. Учебной программой учреждения высшего образования по дисциплине «Иностранный язык (английский)», утвержденной 29.06.2023, регистрационный номер № УД-23-1-048/уч.

*Цели ЭУМК*

Основной целью ЭУМК является повышение исходного уровня владения иностранным языком и формирование у обучающихся иноязычных компетенций, позволяющих им решать социально-коммуникативные задачи в сфере электронной коммерции, формирование навыков говорения, чтения и письма, развитие грамматических навыков.

Содержание и объем ЭУМК полностью соответствуют образовательным стандартам высшего образования специальности 6-05-0811-03 Мелиорация и водное хозяйство, а также учебно-программной документации образовательных программ высшего образования. Материал представлен на требуемом методическом уровне и адаптирован к современным образовательным технологиям.

УМК разработан в электронном виде.

*Структура учебно-методического комплекса по дисциплине «Иностранный язык (английский)»:*

***Теоретический раздел ЭУМК представлен*** методическими рекомендациями по изучению дисциплины и отдельных ее тем, а также по организации управляемой самостоятельной работы студентов.

***Практический раздел ЭУМК содержит*** методические материалы к практическим занятиям, аутентичные тесты и материалы по изучаемым темам;

***Раздел контроля знаний ЭУМК содержит*** перечень самостоятельного изучения студентами, вопросы к зачету, образцы тестов;

***Вспомогательный раздел ЭУМК включает*** учебную программу по дисциплине «Иностранный язык».

Краткий паспорт дисциплины
для дневной формы получения высшего образования

| | Мелиорация и водное хозяйство | |
|---|---|---|
| | семестр | семестр |
| | 1 | 2 |
| Практические (семинарские) занятия (часов) | 68 | 68 |
| Зачет (+/-) | + | – |
| Экзамен (+/-) | – | + |

## ПЕРЕЧЕНЬ МАТЕРИАЛОВ В УЧЕБНО-МЕТОДИЧЕСКОМ КОМПЛЕКСЕ

**Электронный учебно-методический комплекс содержит:**

# 1. ТЕОРЕТИЧЕСКИЙ РАЗДЕЛ

## 1.1. МЕТОДИЧЕСКИЕ РЕКОМЕНДАЦИИ ПО ИЗУЧЕНИЮ ДИСЦИПЛИНЫ

Целью практического курса «Иностранный язык» является формирование и развитие профессиональной коммуникативной компетенции, позволяющей осуществлять коммуникативную деятельность на иностранном языке в профессиональной сфере общения и развитие лингвистической компетенции, включающей в себя знание и владение стандартными лексическими средствами и грамматическими структурами, присущими языку сферы профессионального общения в области экономики.

Учебный план дисциплины «Иностранный язык» предусматривает практические занятия в аудитории (под руководством преподавателя) и вне учебной аудитории (самостоятельную работу студентов с последующим контролем преподавателя) на протяжении 2 семестров на 1 курсе.

В своей концепции учебный курс опирается на разработанные Советом Европы «Общеевропейские компетенции владения иностранным языком».

Данный курс предусматривает наличие навыков элементарного владения иностранным языком на Предпороговом уровне А2. Наряду со стартовым тестированием, могут быть использованы методы самооценки для определения начального уровня языковой компетенции. С этой целью рекомендуется ответить на следующие вопросы:

Анкета для определения соответствия уровню А2

Я понимаю на слух отдельные фразы и наиболее употребительные слов в высказываниях?

Я понимаю на слух основную информацию о себе и своей семье, о покупках, о месте проживания, о работе?

Я понимаю на слух общее содержание простых, четко произнесенных и небольших по объему сообщений и объявлений?

Я могу прочитать и понять короткие простые тексты?

Я могу найти конкретную информацию в простых текстах повседневного общения: в рекламах, проспектах, меню, расписаниях?

Я могу прочитать простые письма личного характера?

Я умею общаться в простых типичных ситуациях, требующих непосредственного обмена информацией?

Я умею поддержать предельно краткий разговор на бытовые темы?

Я могу, используя простые фразы и предложения, рассказать о своей семье и других людях, условиях жизни, учебе, настоящей или прежней работе?

Я умею писать простые короткие записки и сообщения?

Я умею писать несложные письма личного характера (например, выразить кому-либо свою благодарность за что-либо)?

Исходя из целей и задач обучения, формулируются конечные требования к уровню знаний и умений по отдельным видам речевой деятельности и языковым аспектам на 1 курсе (1, 2 семестр).

Основной целью курса является достижение Порогового уровня самостоя-

тельного владения иностранным языком B1 и закрепление на данном уровне. Курс направлен на практическое овладение навыками аудирования, понимание письменного текста, диалогической и монологической речи, а также продуктивное овладение грамматическим материалом в рамках изучаемых лексических тем.

Требования к итоговым умениям и навыкам на уровне B1:

| | | |
|---|---|---|
| Понимание | Аудирование | Понимание основных положений четко произнесенных высказываний в пределах литературной нормы на базе изученных тем. Понимание общего содержания адаптированных радио- и телепрограмм о текущих событиях, а также передач, связанных с личными или профессиональными интересами. |
| | Чтение | Понимание текстов, построенных на частотном языковом материале повседневного и профессионального общения. Понимание описаний событий, чувств, намерений в письмах личного характера. |
| Говорение | Диалог | Умение общаться в большинстве ситуаций, возникающих во время пребывания в стране изучаемого языка. Участие (без предварительной подготовки) в диалогах на базе изученных тем. |
| | Монолог | Умение строить простые связные высказывания о личных впечатлениях, событиях, мечтах, надеждах и желаниях. Умение кратко обосновать и объяснить свои взгляды и намерения, рассказать историю или изложить сюжет книги или фильма и выразить к этому свое отношение. |
| Письмо | Письмо | Умение писать простые связные тексты на изученные темы, письма личного характера. |

С целью формирования навыков аудирования на иностранном языке согласно вышепреведенной шкале уровней для самооценки, опубликованной в официальной брошюре Совета Европы, рекомендуется выполнить следующие упражнения:

Прослушайте текст, постарайтесь понять его содержание, разделите на смысловые части и дайте заголовок к каждой части.

Прослушайте текст, составьте план.

Прослушайте начало текста, дайте свой вариант того, как могут развиваться события в тексте дальше и т. д.

Прослушайте предложение и определите значение нового слова по контексту (словообразовательным элементам, на основе знания одного из значений, по этимологии, звукоподражательным элементам).

Установите на слух тождество в парах слов.

Прослушайте предложения и постарайтесь понять их смысл, не обращая внимания на определения, выраженные незнакомыми словами.

Прослушайте омонимы в предложениях и определите их значения.

Прослушайте синонимы в предложениях и определите их значения.

Прослушайте исходные предложения и различные варианты их лексико-грамматического перефразирования, определите выраженную в них мысль.

Прослушайте ряд предложений и обратите внимание на то, что они отличают-

ся друг от друга только одним новым словом в одной u той же позиции. Установите смысл этих предложений.

В списке слов отметьте те, которые вы услышали в предложениях. Назовите их вслух.

В списке русских слов отметьте очередность воспринятых на слух иноязычных эквивалентов.

Прослушайте омонимы и найдите в списке соответствующие им слова на родном языке.

Прослушайте предложения на иностранном языке, укажите лексические ошибки, допущенные в процессе их перевода на русский язык. (Текст русских предложений прилагается).

Прослушайте предложения, произнесенные в быстром темпе, и запишите их. Затем проверьте правильность своих записей при более медленном чтении предложений диктором.

Прослушайте предложения, произнесенные диктором в быстром темпе, и переведите их на родной язык. При повторном (таком же быстром или более медленном) прослушивании исправьте ошибки в переводе.

Отметьте в списке синонимы или антонимы слов, которые вы услышали в произнесенных диктором предложениях.

С целью формирования навыков диалогической речи на иностранном языке рекомендуется выполнить следующие упражнения:

Подготовьте набор ключевых слов и словосочетаний, уместных в большинстве типичных ситуаций, которые могут быть при поездке в страну изучаемого языка.

Составьте на основе этого материала свои реплики разных типов (побуждения, реагирования) и организуйте их в микродиалоги, реализующие различные языковые намерения.

Составьте диалог по одной теме, но для разных ситуаций общения.

Составьте тематический диалог из микродиалогов с добавлением необходимых объединяющих реплик.

Подберите картинки/фотографии к интересующей вас ситуации общения и составьте к ним микродиалоги.

Составьте диалог по прочитанному тексту.

Подумайте, с какими сложностями вы можете столкнуться в различных ситуациях, которые могут быть при поездке в страну изучаемого языка, и составьте микродиалоги, позволяющие их решить.

С целью формирования навыков монологического высказывания на иностранном языке рекомендуется выполнить следующие упражнения:

Подготовьте или воспользуйтесь готовыми списками выражений отношения (нравиться, разочарование, предпочтение, волнения и т.п.), интереса.

Определите ряд событий в тексте или фильме, которые оказались для вас эмоционально значимыми. Выразите свое отношение к ним, используя соответствующие фразы-клише.

Практикуйте использование этих фраз, до тех пор, пока подбор соответствующего слова для выражения ваших эмоций не перестанет вызывать затруднения.

Подготовьте список союзов и выражений, объясняющих вашу точку зрения.

Подготовьте простые предложения, выражающие ваш интерес к некоторому

явлению и простые предложения, объясняющие этот интерес. Объедините их в одно сложное предложение.

С целью формирования навыков чтения на иностранном языке рекомендуется выполнить следующие упражнения:

Прочтите текст, разделите его на смысловые части, подберите названия к каждой из них.

Повторно прочтите текст и перечислите вопросы, освещаемые в нем.

Соедините простые предложения с помощью подчинительных союзов.

Определите и изучите новые грамматические явления в тексте.

Прочтите предложения и найдите в них многозначные слова. Укажите новые для вас значения этих слов.

Переведите авторскую прямую речь в косвенную.

Составьте предложения из самостоятельно выбранных ключевых фраз.

С целью формирования навыков письма на иностранном языке рекомендуется выполнить следующие упражнения:

Подготовьте набор ключевых слов и словосочетаний, уместных в большинстве типичных писем личного характера.

Подготовьте список союзов и выражений, объясняющих вашу точку зрения.

Подготовьте простые предложения, выражающие ваш интерес к некоторому явлению и простые предложения, объясняющие этот интерес. Объедините их в одно сложное предложение.

Составьте план простого письма-благодарности, запроса.

Подберите фразы для формального и неформального начала и завершения письма.

## 1.2. МЕТОДИЧЕСКИЕ РЕКОМЕНДАЦИИ ПО ОРГАНИЗАЦИИ САМОСТОЯТЕЛЬНОЙ РАБОТЫ СТУДЕНТОВ

Студент в процессе обучения должен не только освоить учебную программу, но и приобрести навыки самостоятельной работы, которая способствует развитию ответственности и организованности, творческого подхода к решению проблем учебного и профессионального уровня, поскольку студент должен уметь планировать и выполнять свою работу.

Самостоятельная работа студентов является одной из основных форм аудиторной и внеаудиторной работы при реализации учебных планов и программ. Самостоятельная работа определяется как индивидуальная или коллективная учебная деятельность, осуществляемая без непосредственного участия педагога, но по его заданиям и под его контролем.

При определении содержания самостоятельной работы студентов учитывается уровень самостоятельности абитуриентов и требования к уровню самостоятельности выпускников для того, чтобы за период обучения искомый уровень был достигнут.

Для организации самостоятельной работы необходимы следующие условия:

– готовность студентов к самостоятельному труду;

– наличие и доступность необходимого учебно-методического и справочного материала;

– консультационная помощь.

Формы самостоятельной работы студентов определяются при разработке рабочих программ учебных дисциплин содержанием учебной дисциплины, учитывая степень подготовленности студентов.

Видами заданий для внеаудиторной самостоятельной работы являются:

Для овладения знаниями:

– чтение текста (учебника, дополнительной литературы), составление плана текста, графическое изображение структуры текста, конспектирование текста, выписки из текста, работа со словарями и справочниками, ознакомление с нормативными документами, учебно-исследовательская работа, использование аудио- и видеозаписей, компьютерной техники и Интернета и др.

Для закрепления и систематизации знаний:

– работа с конспектом лекции, обработка текста, повторная работа над учебным материалом (учебника, дополнительной литературы, аудио и видеозаписей, составление плана, составление таблиц для систематизации учебною материала, ответ на контрольные вопросы, заполнение рабочей тетради, аналитическая обработка текста (аннотирование, рецензирование, реферирование, конспект-анализ и др), подготовка мультимедиа сообщений/докладов к выступлению на семинаре (конференции), подготовка реферата, составление библиографии, тематических кроссвордов, тестирование и др.

Для формирования навыков и развития умений:

– решение задач и упражнений по образцу, решение вариативных задач, решение ситуационных (профессиональных) задач, подготовка к деловым играм, проектирование и моделирование разных видов и компонентов профессиональной деятельности, рефлексивный анализ профессиональных умений с использованием аудио- и видеотехники и др.

Таким образом, самостоятельная работа всегда завершается какими-либо результатами. Это выполненные задания, упражнения, решенные задачи, написанные сочинения, заполненные таблицы, построенные графики, подготовленные ответы на вопросы.

Цели и задачи.

Целью самостоятельной работы студентов является овладение фундаментальными знаниями, профессиональными умениями и навыками деятельности по профилю, опытом творческой, исследовательской деятельности. Данный учебно-методический материал ориентирован на достижение главной цели: повышение результативности самостоятельной работы студентов, развитие способности к самостоятельному получению знаний, освоению коммуникативных компетенций по учебной дисциплине «Иностранный язык».

В ходе выполнения самостоятельной работы студент научится активно, целенаправленно приобретать новые знания и развивать коммуникативные умения без прямого участия в этом процессе преподавателей; самостоятельно анализировать современные учебно-методические материалы; закреплять пройденный материал посредством анализа, сравнения, обсуждения и описания реалий согласно тематике.

Указанная цель требует реализации ряда задач, таких как:

приобретение конкретных знаний, формирование навыков и развитие речевых умений по иностранному языку, в соответствии с темами, заявленными в учебной программе дисциплины;

систематизация и закрепление полученных теоретических знаний и практических умений обучающихся;

развитие познавательных способностей и активности студентов: творческой инициативы, самостоятельности, ответственности и организованности;

формирование самостоятельности мышления, способностей к саморазвитию,

самосовершенствование и самореализация;

развитие исследовательских умений;

реализация универсальных учебных действий с использованием информационно-коммуникационных технологий.

Информация, полученная в результате самостоятельного изучения обозначенного материала, будет необходима для написания реферата, сочинения, подготовки презентации, более продуктивной работы на практических занятиях, а также успешного прохождения всех этапов контроля знаний. Помимо анализа библиографического списка литературы, поощряется самостоятельное нахождение и изучение дополнительной литературы и электронных источников.

При этом целями и задачами самостоятельной аудиторной работы по дисциплине «Иностранный язык» являются:

методическая помощь студентам при изучении дисциплины «Иностранный язык» по темам, выносимым на самостоятельное изучение;

активизация употребления профессиональной лексики в речи студентов, связанной с конкретными специальностями;

обучение логичному и последовательному изложению своих мыслей в соответствии с предложенной ситуацией, максимально приближенной к реальной жизни, и в пределах освоенного лексико-грамматического материала;

применение сформированных навыков при работе с аутентичными материалами;

развитие творческих способностей студентов, активизация мыслительной деятельности, повышение положительной мотивации к изучению иностранного языка;

отработка навыков работы со специальными тематическими словарями, с научными справочными пособиями, а также навыков реферирования;

оказание методической помощи при написании рефератов, сочинений.

Цели и задачи внеаудиторной самостоятельной работы студентов:

закрепление, углубление, расширение и систематизация знаний, полученных во время занятий;

самостоятельность овладения новым учебным материалом;

формирование навыков самостоятельного умственного труда;

овладение различными формами самоконтроля;

развитие самостоятельности мышления;

развитие коммуникативных умений в сфере профессионального общения;

воспитание способности к самоорганизации, творчеству.

Самостоятельная работа может осуществляться индивидуально или группами студентов в зависимости от цели, объема, конкретной тематики самостоятельной работы, уровня сложности, степени развития умений студентов.

Контроль результатов внеаудиторной самостоятельной работы студентов может осуществляться в пределах времени, отведенного на обязательные учебные за-

нятия по дисциплине и внеаудиторную самостоятельную работу студентов по дисциплине. Используется устная, письменная и смешанная формы контроля.

По дисциплине «Иностранный язык» практикуются следующие виды и формы самостоятельной работы студентов:

подготовка к практическим занятиям;

подготовка к контрольным работам, зачетам и экзаменам;

отработка изучаемого материала по печатным и электронным источникам;

выполнение контрольных, самостоятельных работ;

тестирование в учебных компьютерных классах по материалам, разработанным преподавателем;

индивидуальные исследовательские задания (подготовка кратких сообщений, докладов, рефератов и др.);

подготовка к участию в научно-практических конференциях;

подготовка и оформление мультимедийных презентаций в соответствии с учебными разделами и темами, а также слайдового оформления и видеосопровождения докладов;

написание сочинений;

самостоятельное составление заданий (кроссвордов, викторин, контрольных упражнений) по изучаемой теме;

работа над выполнением наглядных пособий (схем, таблиц, коллажей и др.);

проектная работа (подготовка деловой игры; портфолио).

Рекомендации по выполнению самостоятельной работы:

Изучение теоретического материала.

Изучение тематических текстов на иностранном языке, лексических и грамматических комментариев к ним, а также указанной в библиографии литературы и интернет-ресурсов с целью расширения знаний по той или иной теме необходимо осуществлять с учетом следующих пунктов:

прежде чем приступить к работе, требуется четко определить цели задания, что поможет осуществить самоконтроль в конце работы;

ход работы проводить «пошагово» и не приступать к следующему пункту, не пройдя предыдущий;

при работе с литературными источниками выделять главное, обращая особое внимание на классический иностранный язык;

в конце работы проверить достигнута ли цель и сколько времени потребовалось для её достижения.

В зависимости от цели просмотрового чтения и степени полноты извлечения информации выделяют четыре подвида просмотрового чтения:

1. Конспективное – для выделения основных мыслей. Оно заключается в восприятии только наиболее значимых смысловых единиц текста, составляющих логико-фактологическую цепочку.

2. Реферативное – для выделения основных мыслей. При этом читающего интересует только самое основное в содержании материала, все подробности опускаются как несущественные для понимания главного.

3. Обзорное – для определения существа сообщаемого. Оно направлено на выделение главной мысли текста, причем задачи сводятся в основном к ее обнаруже-

нию на основе структурно-смысловой организации текста. Понимание главной мысли, выраженной имплицитно, в данном случае практически невозможно. Интерпретация прочитанного ограничивается вынесением самой общей оценки содержанию и определением соответствия текста интересам студентов.

4. Ориентировочное – для установления наличия в тексте информации, представляющей для читающего интерес или относящееся к определенной проблеме. Основная задача читающего – установить, относится ли данный материал к интересующей его теме.

Грамматический анализ непонятных предложений текста на иностранном языке. Бегло просмотрите текст и постарайтесь понять, о чем идет речь.

При вторичном прочтении определите тип непонятного предложения и функции всех его составляющих по внешним признакам.

При наличии сложносочиненного или сложноподчиненного предложения разделяйте его по формальным признакам на самостоятельные и придаточные, выделяйте инфинитивные, причастные и деепричастные обороты.

Если в предложении есть служебные слова, используйте их для членения предложения на смысловые группы.

В каждом отдельном предложении сначала находите сказуемое или группу сказуемого, затем подлежащее или группу подлежащего. Если значение этих слов неизвестно, обращайтесь к словарю.

Глагол-сказуемое обычно стоит на втором месте. Сказуемое можно найти по:

– по личным местоимениям;

– по вспомогательным и модальным глаголам в личной форме;

– по неправильным глаголам;

– по суффиксам.

Помните, что существительные употребляются в функции подлежащих только без предлогов.

Найдя подлежащее и сказуемое, проверьте, согласуются ли они в лице и числе. Поняв значение главных членов, выявляйте последовательно второстепенные члены предложения, сначала в группе сказуемого, а затем в группе подлежащего.

Если предложение длинное, определите слова и группы слов, которые можно временно опустить для выяснения основного содержания предложения. Не ищите сразу в словаре все незнакомые слова, а заменяйте их вначале неопределенными местоимениями и наречиями (кто-то, какой-то, как-то, где-то и др.).

Внимательно присмотритесь к словам, имеющим знакомые вам корни, суффиксы, приставки. Попытайтесь установить значение этих слов. При этом обратите внимание на то, какой частью речи являются такие слова, а затем подбирайте соответствующий русский эквивалент.

Слова, оставшиеся непонятными, ищите в словаре, соотнося их значение с контекстом.

Подготовка доклада.

Требование к студентам по подготовке и презентации доклада.

Доклад – это сообщение с целью обобщить знания по заданной теме, систематизировать материал, проиллюстрировать примерами, сформировать навыки самостоятельной работы с научной литературой и прессой, познавательный интерес к научному познанию.

Студент в ходе презентации доклада отрабатывает умение самостоятельно

обобщить материал и сделать выводы в заключении, свободно ориентироваться в материале и отвечать на дополнительные вопросы слушателей. Работа студента над докладом-презентацией включает отработку у него навыков ораторского искусства и развитие умений организовывать и проводить диспут.

Тема доклада должна быть согласована с преподавателем и соответствовать теме занятия. Докладом также может стать презентация реферата студента, соответствующая теме занятия. Материалы при его подготовке должны соответствовать научно-методическим требованиям ВУЗа и быть указаны в докладе. Иллюстрации должны быть достаточными, но не чрезмерными.

Студент обязан подготовить сообщение и выступить с докладом в строго отведенное преподавателем время, и в указанный им срок. Необходимо соблюдать регламент, оговоренный при получении задания.

Инструкция докладчикам и содокладчикам.

Докладчики и содокладчики – основные действующие лица. Они во многом определяют содержание, стиль и динамичность данного занятия. Действующие лица должны:

уметь сообщать новую информацию;

использовать технические средства;

знать и хорошо ориентироваться в теме всей презентации (семинара);

уметь дискутировать и быстро отвечать на вопросы;

четко выполнять установленный регламент: докладчик – от 10 мин.; содокладчик – 5 мин.; дискуссия – 10 мин;

иметь представление о композиционной структуре доклада.

Необходимо помнить, что выступление состоит из трех частей: вступление, основная часть и заключение.

Рекомендуется составить тезисы для беседы или устного сообщения в заданной ситуации общения. Эффективно также составить список вопросов для обсуждения с воображаемым или реальным собеседником.

Написание реферата.

Тема реферата предлагается преподавателем в соответствии с изучаемым материалом.

Объем текстовой части реферата (не считая титульного листа, содержания, списка литературы) должен составлять 5–8 листов формата А4 (шрифт: Times-NewRoman, кегль 14, междустрочный интервал полуторный, поля стандартные: верхнее – 2 см, нижнее – 2 см, левое – 3 см, правое – 1,5 см).

Обязательные части реферата: титульный лист, текстовая часть и список литературы (не менее 4 наименований). Вступление, основная часть и заключение также являются необходимыми блоками реферата.

Написание сочинений.

Тема сочинения предлагается преподавателем в соответствии с изучаемым разделом; также допускается написание сочинения по теме, сформулированной самостоятельно, но в таком случае необходимо ее согласование с преподавателем. Объем сочинения должен составлять 240–280 слов. Сочинение сдается в указанный в графике срок.

Требования к оформлению.

Сочинение сдается на листе бумаги или в специально заведенной для этой цели тонкой тетради (не толще 48 листов), в рукописном или распечатанном виде. Сочинение оформляется произвольно; обязательно только указание темы сочинения.

Инструкция по подготовке сочинения.

Разделите текст на смысловые абзацы в соответствии с предложенным в задании планом.

В первом абзаце сформулируйте проблему, которую вы будете обсуждать, однако не повторяйте тему сочинения слово в слово. Представьте, что ваш читатель не знает, о чем пойдет речь, и попытайтесь объяснить ему проблему другими словами.

Выделите положительные и отрицательные стороны проблемы, подумайте о разумных аргументах, в поддержку обеих точек зрения. Помните, что вы должны выразить не только свою точку зрения, но и противоположную. Также не забудьте объяснить, почему вы не согласны с другой точкой зрения.

Старайтесь соблюдать баланс между абзацами. Используйте слова-связки, чтобы помочь читателю проследить за логикой ваших рассуждений.

В последнем абзаце сделайте обобщающий вывод по данной проблеме. Вы можете также окончательно сформулировать свое мнение или предложить пути решения данной проблемы.

Написание письма.

В процессе профессионального общения написание писем является одной из наиболее часто встречающихся задач. Темы для деловых писем предлагаются преподавателем, также допускается написание письма по теме, сформулированной самостоятельно, но в таком случае необходимо ее согласование с преподавателем.

Перед написанием письма проводится подготовительная работа. Студент анализирует тексты писем, определяет характер каждого письма (личное, семейное, деловое, проблемное; письмо с выражением благодарности; поздравление, приглашение и т.д).

На подготовительном этапе просматриваются приведенные речевые формулы, используемые в письме, и отмечаются различные способы выражения благодарности и признательности. Кроме того, составляются различные тематические письма для заданных ситуаций письменного общения.

Непосредственно при написании письма используйте следующий алгоритм действий:

Определите, кому могут быть адресованы названные формы письменного обращения.

Определите характер письма по его структуре (описание, сообщение, повествование, уведомление, выражение благодарности за что-либо, приглашение).

Составьте письмо по предложенному плану, ориентируясь на конкретный тип адресата, коммуникативную задачу и ситуацию написания письма.

Подготовка презентации.

Демонстрационная презентация (длительностью от 10 до 20 мин.) выполняется в программах MicrosoftPowerPoint, Prezi и других.

Возможно (но необязательно) использование дополнительных фото-, видео- или аудиоматериалов. Выполнение презентации осуществляется в устной форме

(сдача текстовой части доклада не требуется).

Виды презентаций и их структура.

Можно выделить 3 вида презентаций:

1. информационная презентация;
2. презентация-идея;
3. презентация-ревью.

Для определения вида будущей презентации сформулируйте цель своего выступления, ответив себе на вопросы: зачем я выступаю, что я хочу получить в результате, что должны продумать или сделать слушатели после моей речи? Это главный вопрос. Правильный ответ на него – 50% успешной презентации.

Для информационной презентации достаточно того, что аудитория просто получит новые данные. Информационная презентация самая простая по своей сути, и требования к ней минимальны: она должна содержать в себе вступление, основную часть и завершение.

Во вступлении должно быть приветствие, тема и, возможно, цель выступления, имя выступающего, название организации, которую он представляет. Часто визуальные компоненты сопровождают или даже заменяют эту часть выступления.

В основной части информационной презентации главное – это соблюдение логики речи, а, следовательно, структурирование доклада, в частности разделение его на части.

Завершение также может быть предельно кратким: резюме вышесказанного и благодарность за внимание.

Цель презентации-идеи: изменить отношение слушателей и убедить их предпринять конкретные действия, связанные с темой. Алгоритм формирования убедительной презентации – «4П». Алгоритм включает в себя 4 блока:

1. Положение. В первой части докладчик рассказывает о ситуации, связанной с его предложением. Ситуация должна быть близка и понятна аудитории. Этот раздел должен быть относительно коротким – 5-10% всего выступления.

2. Проблема. Этот отрезок презентации должен показать проблематику. Очень важно, чтобы поднятые оратором проблемы действительно были важны для слушателей. Задача презентации только актуализировать потребности слушателей и вывести на первый план среди множества других наших ежедневных потребностей.

3. Перспектива. В этом разделе докладчику нужно показать, как усугубится описанная проблема, если не принять меры прямо сейчас.

4. Предложение. Следует предложить свой продукт или идею. При этом важно наглядно показать, как именно предлагаемая идея поможет выйти из сложившейся ситуации, ответить на вопрос, чем этот способ решения лучше, чем другие, привести аргументы и доказательства – то есть сделать свою презентацию убедительной.

Заканчиваться презентация-идея должна призывом к конкретным действиям, которые можно легко реализовать. Выступление будет особенно убедительным, если сделать презентацию с использованием качественных слайдов. Для убеждения стоит использовать яркие иллюстрации и графики, подтверждающие слова выступающего, так как 80% информации мы получаем через зрительный канал.

Презентация-ревью – это отчет о проделанной работе. Фактически, целью таких презентаций является убеждение слушателей в том, что Вы грамотный специалист в своей области, максимально качественно выполнивший свой объем работы и достойны высокой оценки.

Составление портфолио.

Целесообразно создание и использование портфолио в качестве проекта для самостоятельной работы.

По способу обработки и презентации информации выделяют портфолио в бумажном варианте и электронный вариант портфолио.

Портфолио в бумажном варианте, т.е. портфолио документов – это портфель сертифицированных (документированных) индивидуальных образовательных достижений, личностного развития, карьерного продвижения как рецензии, отзывы, резюме, эссе, рекомендательные письма и прочее).

Электронный вариант портфолио, т.е. портфолио-коллектор, портфолио работ – это собрание различных творческих и проектных работ студента, а также описание основных форм и направлений его учебной и творческой активности: участие в научных конференциях, конкурсах, прохождение различного рода практик, спортивных и художественных достижений и др.

Структура портфолио.

Часть 1. «Введение».

1.1. Фото.

1.2. Резюме.

1.3. Цели и задачи портфолио.

1.4. О структуре портфолио.

1.5. Специфические характеристики портфолио.

Часть 2. «Мои достижения».

2.1. «Официальные документы»:

документы об окончании школы;

сертификаты официально признанных международных, региональных и городских олимпиад, конкурсов, фестивалей, иных мероприятий;

документы об участии в грантах, окончании музыкальной, художественной, спортивной или иной школы;

сертификаты о прохождении практик, стажировок, тестирования, участии в проектах и программах;

журнальные, газетные, фотодокументы и иные документы, свидетельствующие об успехах;

список достижений, который, по тем или иным причинам (забыл, потерял, украли) не может быть задокументирован.

2.2. «Жизненный опыт»:

автобиография;

эссе «Взгляд в прошлое»;

анализ важнейших событий и эпизодов жизни, их оценка, оценка, вес в сегодняшней жизни;

основные этапы становления личности, факторы, события, люди, повлиявшие на это;

газетные, фото, видео и иные кинодокументы, свидетельства очевидцев;

характеристики, отзывы, оценки известных (и не только) лиц о вас;

отзывы с тех мест работы, где вы работали и т.п.).

2.3. «Обучение в вузе, предпрофессиональная и профессиональная подготовка»:

ваши оценки на всех этапах обучения в вузе, комментарии к ним;

любимые предметы, преподаватели, мотивы обучения;

основные периоды и этапы учения;

изменения взглядов на свою будущую профессию, вуз;

список курсовых и дипломных работ;

отзывы преподавателей и научных руководителей, руководителей учебных, преддипломных и дипломных практик;

список мест прохождения практик и выполненных работ.

2.4. «Научная деятельность»:

список научных работ;

научная переписка;

аннотации к своим работам;

рецензии чужих научных трудов, монографий, учебников и учебных пособий;

отзывы на ваши работы;

эссе «О науке» и т.п.

2.5. «Курсы по выбору и творческие работы»:

список дополнительны курсов, оценки, сертификаты, комментарии, приобретенные компетенции;

список или структурированное представление в том или ином виде своих творческих работ, отзывы на них, в том числе в СМИ и т.п.

Часть 3. «Я в мире людей».

3.1. «Участие в общественной жизни»:

характер вашей общественной активности;

занимаемые посты;

проекты и программы, в которых участвовали, их результативность.

3.2. «Друзья», «Любимые люди»:

ваши близкие друзья в вузе и вне его, сфера их занятий, привлекательные черты характера, образ жизни, разделяемые ценности и т.п.;

родные и близкие люди, их личные качества, интересы, сфера занятий, привлекательные черты.

3.3. «Мои кумиры»:

Люди (актеры, ученые, писатели, спортсмены и т.п.), являющиеся для вас, в определенном смысле, эталонами жизни и поведения, их портреты.

3.4. «Хобби, интересы»:

сфера ваших свободных интересов, занятий, хобби, их примеры, иллюстрации;

значение в жизни вообще и в профессиональной жизни, в частности.

Часть 4. «Взгляд на себя и в будущее».

4.1. «Я»:

взгляд на свое «Я», сильные и слабые стороны, мотивацию, интеллект, черты характера, образ жизни.

4.2. «Мои ценности и идеалы»:

то, что вы цените, считаете важным, стремитесь, уважаете.

4.3. «Мир вокруг меня»:

ваша оценка событий происходящих в мире и вокруг вас, тенденций, открывающихся возможностей, возникающих трудностей и опасностей.

4.4. «Мои жизненные планы:

ваше представление о собственной миссии, жизненных и профессиональных целях, стратегии, планах, способах, средствах и времени их достижения и т.п.

4.5. «Мой девиз»:
ваш девиз, кредо на новом этапе жизни.
Часть 5. «Заключение для…».
5.1. Важнейшие аспекты личности;
5.2. Наиболее важные компетенции;
5.3. Важнейшие аспекты опыта;
5.4. Направления взаимодействия с работодателем и/или использования.

Материалы для оценивания портфолио делят на 2 части и заносят в таблицу:

| Формальная часть | Неформальная часть |
|---|---|
| 1. Средние оценки по общим дисциплинам.<br>2. Средние оценки по профессиональным дисциплинам.<br>3. Средние оценки по специальным дисциплинам.<br>4. Курсовые работы.<br>5. Дипломная работа.<br>6. Практики.<br>7. Иностранный язык.<br>8. Второй иностранный язык.<br>9. Третий иностранный язык.<br>10. Любые сертификаты об обучении, связанные с профессией.<br>11. Обучение за рубежом по направлению университета.<br>12. Отзывы преподавателей, руководителей учебных практик. | 1. Олимпиады.<br>2. Профессиональные конкурсы.<br>3. Научные публикации.<br>4. Методические разработки и публикации (разработка учебного курса, деловой игры, тренинга, конференции, сайта по профессиональной теме).<br>5. Участие в научной конференции.<br>6. Участие в общественных проектах.<br>7. Участие в профессиональных проектах.<br>8. Участие в спортивных мероприятиях.<br>9. Иные сертификаты, документы.<br>10. Отзывы, характеристики от руководителей предприятий, организаций. |

Самостоятельная подготовка заданий.

При необходимости самостоятельно составить задание по изучаемой теме следует в первую очередь определиться с типом задания. Это может быть кроссворд, викторина, текст с пробелами, сопоставление, ролевая игра и другие виды заданий, включая контрольные тесты и упражнения. По желанию студентов это может быть даже проект деловой игры.

Одним из интересных и творческих вариантов заданий является викторина.

Викторина – это вид игры, смысл которой заключается в том, чтобы угадывать правильные ответы на устные или письменные вопросы из разных областей знаний. Есть большое количество разных видов викторин. Они могут отличаться друг от друга условиями и правилами, тематикой, типами и сложностью вопросов.

Правила выполнения викторины должны быть просты. Сложные правила приходится долго разъяснять, и в результате теряется интерес. Но и в том случае, когда человек включится в викторину, он будет путаться, сбиваться и тем самым нарушать темп проведения викторины или разрушать ее.

Викторина должна охватывать всех. Не должно быть таких ситуаций, когда одни участники вовлечены в процесс викторины, а другие оказываются вположении пассивных наблюдателей.

Еще одним элементом викторин являются награды победителям. Здесь есть

несколько психологических моментов, которые следует учитывать:

приз должен соответствовать уровню и сложности викторины;

вариант вручения призов всем участникам игры возможен, но при этом основной приз должен оставаться основным, а остальные носить характер утешительных и отличаться от главного;

приз не обязательно должен быть материальным. Он может быть чисто символическим, в виде венка, торжественно возлагаемого на голову победителя, шуточной медали с соответствующей надписью и т.п.;

само представление приза как цели, к достижению которой будут стремиться соревнующиеся, может нести в себе элемент викторины, если его представить в скрытом виде, как «темный приз».

# 2. ПРАКТИЧЕСКИЙ РАЗДЕЛ

## 2.1. МАТЕРИАЛЫ ДЛЯ ПРАКТИЧЕСКИХ ЗАНЯТИЙ ПО ДИСЦИПЛИНЕ

### 2.1.1. АНГЛИЙСКИЙ ЯЗЫК

#### 1.1. A NEW PERIOD IN MY LIFE. ABOUT MYSELF

**I. Read and translate the text.**

Let me introduce myself to you. My name is Dima. My surname is Petrov. I'm from Pinsk. At the age of six, I went to school and always did well at school. My favourite subjects at school were Maths and English, besides I was good at sport. This year I've finished secondary school and entered BrSTU. I worked hard to become a student of BrSTU that is why I passed entrance tests successfully.

Who can forget the first day at the university when one turns from an applicant who has passed entrance exams into a first-year student? I did it! I entered, I got in to the university! A solemn ceremony in front of the university building and serious people making speeches. Do you happen to know who they are? Who? The rector, vice-rectors, deans, subdeans? Heads of departments and senior lecturers? Some of them must be professors, some – associate or assistant professors, but, of course, all of them have high academic degrees.

So now I'm a first-year student. Students are the future of every country. They are young citizens of our society, full of infinite energy and progressive ideas, fantastic plans and noble ambitions, hopes and dreams. Student life is the brightest period of our life. It is a mixture of studies and great fun. I know that my parents (ex-students) miss those old good days of their student life.

There are several reasons why student life is exciting. First of all, students learn what they need for their future profession. It's even better if the student really enjoys the direction he or she chose. Secondly, being a student doesn't mean to work and study all the time. They get plenty of free time for their hobbies and favourite pastimes. Thirdly, students' social life is very interesting.

Certainly, a student has certain duties to perform. It goes without saying that the primary student duty is studying hard and acquiring proper knowledge for the future career. He must attend all the classes at college, do all the work at the right time, be punctual and disciplined. It can help the student achieve his goals and become diligent and perseverant. If he doesn't neglect his studies he will receive rich dividends in his future work. My classes begin at 8:10.We have lectures in different subjects.

As a rule we have three or four classes a day. Sometimes it is very hard to wait till they end. Usually I don't miss my classes because I want to pass my exams successfully. Occasionally I have to stay at the University till 5 or even 6 o'clock in the evening because I go to the library to get ready for my practical classes or to write a report.

As I'm from Pinsk and I study in Brest so I need some housing. There are two opportunities for me: I can live in a dormitory or rent a flat. I decided to live in a dormitory and I think it is even more interesting to be a student if you live in a dormitory. After the sessions you can play the guitar and sing songs. The ones, who like dancing, go to local discos. Others get together simply to chat and discuss the topics they've learned.

As a rule I have no free time on week-days. So by the end of the week I get very tired. My regular day off is Sunday. It is a day of freedom from routine duties and studies. I can do whatever I wish and go wherever I want. But I must admit that every day off needs some special planning. Time passes quickly and if you have no plans be sure to get no results. Our University offers plenty of opportunities and ways to enjoy one's free time. In your free time you can practice signing, music and choreography. And the annual contest "BrSTUStars" helps to reveal the talents of first- year students. Our Student Club consists of 13 creative collectives, which take an active part in city, regional and national events. The Students' Club is the centre where the students can spend their time to the best advantage and make new acquaintances.

The Club offers various activities to the students who want to show their creativity.

You can join university amateur societies and groups or try out themselves as script writers, producers and actors at University shows and festivals. This social life broadens the mind, develops your talents and communication skills.

I also believe that a good student should also go in for sports to stay in good health and mood. They say: "A sound mind lives in a sound body." The University Sports Club offers a choice of 14 sport societies for the students to enjoy exercise in their free time. Every year the University Sports Club and the Department of Physical Training jointly conduct more than 50 athletic events: university competitions and champion- ships among teachers and students in indoor soccer, table tennis, chess, aerobic, and track-and-field. The Citadel Alpinist Club is one of the most attractive centers of campus social life. It has united the students and staff, as well as University graduates, who are always eager to share their experience with newcomers. The Club chronicle keeps records of many climbing expeditions to the most picturesque places in the Carpathians, Caucasus, and Crimea as well as boating and skiing trips throughout Belarus. In 2010 the Alpinist Club participated in the third category difficulty climbing, and won the second prize in the Regional sport climbing championship.

Student life is never boring. It is always full of excitement and interesting experiences. Finally I'd like to say that it is absolutely great to be a student!

**II. Find in the text (ex.I) English equivalents for the following Russian words and word combinations.**

Первокурсник, любимое времяпрепровождение, свободное время, успешно сдать экзамены, очень уставать, как говорится, соревноваться, доцент, студент дневного отделения.

**III. They say that it is a poor soldier who does not want to become a general. Name the steps of the social ladder which a student must pass to climb up to the position of the rector. Use the words from the list below, placing one word on one step.**

Dean, assistant lecturer, head of department, vice-rector, associate professor, assistant professor, subdean, professor.

**IV. Match the words with similar meanings.**

| | |
|---|---|
| hostel | term |
| semester | to finish |
| to introduce | to like |
| to leave | to present |
| to prefer | dormitory |

**V. Match the words with opposite meanings.**

| | |
|---|---|
| to pass | to fail |
| to like | to hate |
| easy | difficult |
| lazy | hard-working |
| strong | weak |

**VI. Match the English idioms in the left column with their Russian equivalents.**

| | |
|---|---|
| to go into details | начать с азов |
| to drum something into somebody's head | как дважды два – четыре |
| a brain twister | куриные мозги |
| two and two make four | вдаваться в подробности |
| a stumbling block | головоломка |
| the key word | легко даваться |
| the brain of a pigeon | ключевое слово |
| to come easy | камень преткновения |
| to start from scratch | вдолбить что-либо в голову |

**VII. Speak in class what you feel when:**

you get a bad mark; you fall behind the group; you fail in an examination; you read up for an examination late at night; you miss classes; you come late to classes; you keep up with the rest of the group; you catch up with the rest; you spend sleepless nights over a load of books; you look up every word in your dictionary when reading an English book.

**VIII. Read the text and share your experience of dealing with exam stress with your groupmates.**

How to Deal with Exam Stress

Exam season can bring on levels of stress and burnout that can hinder your studies. Here are some handy tips on how to manage your anxiety Exam stress affects most students in varying ways. It is important to manage this stress and find little ways of helping to eliminate the risk of burnout.

For some students, exams can be a breeze; revision is second nature to them and they could ace an exam with their eyes closed. But for others, sweaty palms and heart palpitations are just a part of the territory, and it seems that nothing is more impossible than sitting down and revising. Here are some handy tips that can help to dissipate stress and make sure you can get through exam season.

1. Take regular breaks and schedule in fun things to look forward to Even the most intense exam timetables will allow a little time for a study break.

This can include 20-minute breaks during your revision day, and longer activities that you can look forward to. Go out for dinner with friends, go to the cinema, attend a gig, anything that you like doing in your spare time that will take your mind off exams. Spending a little time away from the books will leave you feeling more refreshed and relaxed the next time you revise.

2. Exercise and get outdoors

Easily one of the most frustrating things about exam season is that it seems to occur just as the weather brightens up. Use this to your advantage and go out for a walk, or a run,

or head to the gym or swimming pool. As well as keeping you healthy, exercise is known to boost your mood and can help to make you more productive while revising.

3. Don't (always) listen to others

As the old saying goes: "comparison is the thief of joy". While it is helpful to discuss topics with fellow students and often to revise together, try not to compare other peoples' revision to your own. Chances are you're doing just fine, and listening to other people talk about what they've learnt will only stress you out and may make you feel like you aren't progressing as well as them. Plus, if they themselves are stressed this can rub off on to you and other people's stress is not what you need right now.

4. Speak to someone

If the stress gets to a point where it is overwhelming, and is affecting your day-to-day life, try and speak to someone about it. Your university or school should have a service where you can speak to people about your concerns, and will be able to offer more advice on how to manage it. If that seems like too big a step, open up to a family member or a friend about the pressure you feel. You'll be amazed to know that you aren't alone in feeling like this.

10 quick ways to help eliminate exam stress

Watch a film, a TV show or listen to a podcast or comedian that makes you laugh.

Drink some herbal tea or a hot chocolate. It's a well known fact that hot drinks are known to soothe the soul (avoid too much caffeine though!).

A shower or a bath can help to relieve stress.

Cook or bake something. Just the thought of having something delicious to eat can bring you joy. As a bonus side note, try and cook something healthy too. You can't feed your mind well, if you don't feed your body well.

Get some sleep. The virtues of a good night's sleep during exam season should not be underestimated.

Keep things in perspective. Yes, exams are important. But you are so much more than your exam results.

Avoid other stressed people. You know the ones I mean. The ones with cue cards outside of the exam hall, frantically trying to remember key dates and equations.

They will do nothing for your stress levels.

Avoid the exam "post-mortem". You don't need to know how other people fared in the exam. You've done your best, you can't go back and change your answers so the second you step out of the exam hall, focus on your next exam.

Be flexible. While having a revision time table is one of the best tools in your arsenal for exam success, don't be too hard on yourself if you don't stick to it. If you accidentally oversleep, don't write the day off.

Write down everything you feel like you need to do and try and tick one thing off.

Just the act of feeling like you are in control of your revision can help.

**IX. Translate into English.**

1. Она поступила в университет прошлым летом и закончит его только через четыре года.

2. Лучше не пропускать занятия, а то можно быстро отстать от группы.

3. Мой любимый предмет, конечно же, английский.

4. Староста нашей группы получает стипендию.

5. Больше всего я боюсь провалить экзамен по математике.

6.В штате преподавателей у нас три профессора, четыре доцента, пять старших

преподавателей и семь ассистентов.

7. В эту сессию будет пять зачётов и четыре экзамена.

**X. Read and translate the story. Answer and discuss in class the questions below. Continue the story.**

It took a couple of weeks for classes to get settled, and then we got down to the nitty-gritty. As homework began pouring in, and tests loomed on the horizon, I realized that my study skills were very poor and that it was going to be a challenge in itself to teach myself to study. I experimented with several tactics, trying to find out what would work for me. I started out in the bedroom with the door closed, but it seemed the phone was always ringing. I managed to get my work done, but I was not pleased with this frustrating situation. Later I tried going outside and preparing somewhere in the yard. I ended up chatting with a neighbour, petting her dog. Clearly, something had to be changed. As my workload increased, so did my frustration.

Quite by accident, however, I found the solution to my problem...

Find the English equivalents to the Russian words and phases.

На это ушла пара недель, прийти в норму, засесть за что-либо, повседневная работа, наваливаться, маячить, слабые навыки, вызов, экспериментировать с чем-либо, обнаружить, начинать (разг.), удаваться, оканчиваться, удручающая ситуация, выходить из дома, болтать, работа накапливалась, разочарование, совершенно случайно, решение проблемы.

Answer the questions and express your opinion on the following.

1. What advice would you give to a friend of yours if he or she had to deal with the problem of distraction?

2. What tactics do you personally choose to get yourself organised and sit down to work?

3. Discuss in class the problem of getting oneself organised and concentrated when doing one's homework.

**XI. BrSTU offers a choice of 14 sport societies for the students to enjoy exercise in their free time. Which of them are you going to visit and why? Write a short essay (10-12 sentences).**

Sport Societies and Clubs:

- arm wrestling
- basketball
- table tennis
- indoor soccer
- handball
- volleyball
- judo
- karate
- aerobics
- kick-boxing
- tourism
- chess
- swimming
- Citadel Alpinist Club.

**XII. The Students' Club is the centre where our students can spend their time to the best advantage and make new acquaintances.? What its line is the most interesting for you? Write a short essay (10-12 sentences).**

BrSTU amateur societies and groups

Vocal line:

• pop-group
• vocal school
• vocal group «Kaliada»
• vocal group «Ramonki»
• vocal group «Vivat»
• vocal group «Krasuni»
• folk music group

Dance line:

• sport dance group «Tim-Wei»
• folk dance group
• school of variety show dancing
• club of historical dance «The Medieval meadow»

Instrumental music line:

• group of violinists
• instrumental music group

Clubs

• Theatre group "The Word"
• "What? Where? When?" Club (brain ring games)
• KVN club (a comedy club)
• Journalistic club "The Feather."

## COLLEGE LIFE

**I. Read the text, consult a dictionary to find the meaning of the words in bold type, learn them by heart.**

The merry-go-round of **college life** is something that one never forgets. It's a fascinating, fantastic, fabulous experience, irrespective of the fact whether one is a **full-time or a part-time student.**

Who can forget the first day at the university when one turns from an **applicant** who has **passed entrance exams** into a **first-year student?** I did it! I **entered, I got in to the university!** A solemn ceremony in front of the **university building** and serious people **making speeches:** the **rector, vice-rectors, deans, subdeans, heads of departments** and **senior lecturers**. Some of them must be **professors, some – associate** or **assistant professors, lecturers and tutors,** but, of course, all of them have **high academic degrees.**

The **monitors** hand out **student membership cards, student record books** and **library cards** – one feels like a real person. First celebrations and then days of hard work. So many **classes,** so many new **subjects to put on the timetable!** The **curriculum** seems to be developed especially for geniuses. **Lectures, seminars** and **tutorials.** Home **preparations;** a real avalanche of **homeworks.**

If one can not **cope with the work load of college** he or she immediately starts **lagging behind.** It is easier to **keep pace** with the programme than to **catch up with it** later. Everyone tries hard to be, or at least to look, **diligent.** First **tests and examination sessions.** The first **successes** and first **failures: "I have passed!" or "He has not given me a**

**pass!**"Tears and smiles. And a long-awaited **vacation.**

The merry-go-round runs faster. **Assignments, written reproductions, compositions, synopses, papers.** Translations **checked up** and **marked.**"Professor, I have never **played truant, I had a good excusefor missing classes**". Works **handed in** and **handed out**. **Reading up for exams**. "No, professor, I have never **cheated –** no **cribs**. I just **crammed**".

**Junior students** become **senior.** Still all of them are one family – **undergraduates. Students' parties** in the **students' club.** Meeting people and parting with people. You know, Nora is going to **be expelled** and Dora is going to **graduate with honours. Yearly essays, graduation dissertations, finals...**

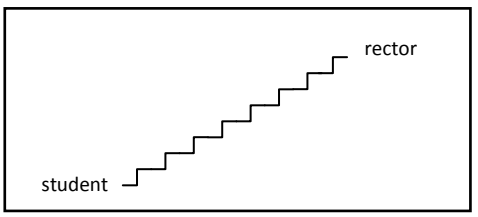
What? A **specialist's certificate**? You mean, I've got a **degree in Economics?** I am happy! It is over! It is over... Is it over? Oh, no...

A **postgraduate course,** a **thesis,** an **oral,** and **a degree in Economics.** The first of September. Where are the students of the **faculty of economics?** Is it the **economics department?** Oh, how nice...

**II. Do the following tasks.**

1. Say a few words about your university: say what it is called, speak about its faculties and their specializations.
2. Would you compare college life with a merry-go-round or with something else?
3. What do you think of the first months at the university?
4. They say that it is a poor soldier who does not want to become a general. Name the steps of the social ladder which a student must pass to climb up to the position of the rector. Use the words from the list below, placing one word on one step.

Dean, assistant lecturer, head of department, vice-rector, associate professor, assistant professor, subdean, professor.




## A NEW PERIOD IN MY LIFE

**I. Pronounce the words correctly and learn their meaning.**

1. housing [hauzɪŋ] –жильё
2. opportunity [ɔpə'tju:nɪtɪ] – возможность
3. dormitory, students hostel ['dɔmɪtrɪ] [hɔstl] –студенческоеобщежитие
4. to rent a flat (an apartment) [ə'pa:tmənt ] – снимать квартиру
5. usually ['ju:ʒuəlɪ] –обычно
6. rather ['ra:ðə] – довольно
7. enough [ɪn∧f] –достаточно
8. completely [kɔm'pli:tlɪ] – полностью, совершенно
9. toserve [sə:v] – обслуживать
10. while [waɪl] –пока, в то время как
11. to prefer [prɪ'fə:] –предпочитать
12. to miss [mɪs] –пропускать
13. successfully [sək'sesfulɪ] –успешно

14. canteen [kæ:n'ti:n] –столовая
15. back [bæk] – обратно
16. break [breɪk] –перерыв
17. report [rɪ'pɔ:t] –доклад
18. tired [tąɪəd] –усталый
19. admit [əd'mɪt] –соглашаться
20. disposal [dɪs'pəuzl] –возможность распорядиться
21. recreation [rekrɪ'eɪʃn] –отдых
22. facilities [fə'sɪlɪtɪz] –возможности, условия
23. tokeepfit[kɪ:pfɪt]–быть бодрым, здоровым
24. advantage [əd'va:ntɪdʒ] –польза

**II. Read the text.**

A New Period in My LifeMy name is Dima Ivanov. On leaving school I entered Brest State Technical University.

Brest State Technical University is one of the largest scientific and educational centers in the western part of Belarus. It enables training of highly qualified specialists and conducts fundamental scientific research in the areas of construction, architecture, electronics, mechanical engineering, economy and ecology. Now I am a first-year student of Civil Engineering DepartmentI think Civil Engineering is a very important branch of national economy. The purpose of Civil Engineering is to construct and reconstruct residential and industrial buildings, bridges, schools, palaces and hospitals. This requires the use of new building methods and new building materials. That is why we must know all the latest achievements of science and engineering. I entered the university to be provided with a high standard of theoretical and practical knowledge.

I am a student of Technical University. My parents live in Grodno and I study in Brest so I need some housing. There are two opportunities for me: I can live in a dormitoryor rent a flat . I decided to live in a dormitory.

A compact university campus is set in beautiful surroundings, with plenty of green space to relax. The campus offers a range of facilities to satisfy students' day-to-day needs:

Recreation and Wellness Center
four student dormitories
a bank
a chemist's shop
a laundry
a store
3 gyms

Located on the campus, the café "Zodchie" provides freshly made hot and cold food.

My classes begin at 8:10.We have lectures in different subjects. As a rule we have three or four classes a day. Sometimes it is very hard to wait till they end. Usually I don't miss my classes because I want to pass my exams successfully.Occasionally I have to stay at the University till 5 or even 6 o'clock in the evening because I go to the library to get ready for my practical classes or to write a report. There is a good library in our University. It is on the ground floor. The library is open from 9 a.m. till 6 p.m. It is accessible to all the students and teachers free of charge. Subscription to the library is conducted according to a student's identity card. I have got a membership card and I can borrow books from the library. I can use books in the reading-room or take them on a loan. I can take books home

for a certain number of days. The entire stock is represented in the author and classified catalogues. The newly acquired books are always displayed on the stands.

The library possesses more than 700,000 books, magazines and other printed works. Foreign literature is in English, French, German, Polish, Spanish, and other languages. There is a good selection of books for professional training. A special place among the library holding belongs to the reference collection.

As a rule I have no free time on week-days. So by the end of the week I get very tired. My regular day off is Sunday. It is a day of freedom from routine duties and studies. I can do whatever I wish and go wherever I want. But I must admit that every day off needs some special planning. Time passes quickly and if you have no plans be sure to get no results. Our University offers plenty of opportunities and ways to enjoy one's free time. The Students' Club is the center where the students can spend their time to the best advantage and make new acquaintances. The Club offers various activities to the students who want to showtheir creativity. They can join university amateur societies and groups or try out themselves as script writers, producers and actors at University shows and festivals.

The University Sports Club offers a choice of 14 sport societies for the students to enjoy exercise in their free time.

Every year the University Sports Club and the Department of Physical Training conduct more than 50 athletic events. The Citadel Alpinist Club is one of the most attractive centres of campus social life. It has united the students and staff, as well as University graduates, who are always eager to share their experience with newcomers. The Club chronicle keeps records of many climbing expeditions to the most picturesque places in the Carpathians, Caucasus, and Crimea as well as boating and skiing trips throughout Belarus. In 2010 the Alpinist Club participated in the third category difficulty climbing, and won the second prize.

**III. Complete the sentences:**

1. On leaving school I entered…

---

2. Brest State Technical University is one of the largest…

---

3. I think Civil Engineering is…

---

4. The purpose of Civil Engineering is…

---

5. A compact university campus is set…

---

6. The campus offers…

---

7. The University Sports Club offers…

---

**IV. Find one synonym to the first word in each row:**

1. Opportunity – share – shower – chance

---

2. Usually – nearest – as a rule – latest

---

3. Rather – enough – ready – quarter

---

4. Turn on – serve – switch – prefer

---

5. Completely – usually – finally – entirely

---

6. Prefer – tired – like – different

---

7. Healthy – sound – hard – successful

---

**V. Find the suitable meaning to each word:**

1. Need – a) clean, polish, make tidy or smooth
2. Rent – b) go away from
3. Brush – c) want, require
4. Leave – d) interval (in space or time)
5. Miss – e) occupy or use (land, buildings, etc.) for rent
6. Success – f) fail to hit, hold, catch, reach, see
7. Break – g) person or thing that succeeds

**VI. Use sentences in the Past and Future Simple, Continuous or Perfect tense forms.**

Example:1. Being happy <u>is</u> one way of being wise.
2. Being happy <u>was</u> one way of being wise.
3. Being happy <u>will be</u> one way of being wise.

<u>Example:</u> 1. Things <u>are not going</u> my way.
2. Things <u>were not going</u> my way.
3. Things <u>will not be going</u> my way.

<u>Example:</u> 1. She <u>has</u> just <u>done</u> some work about the house.
2. She <u>had done</u> some work about the house by 8.
3. She <u>will have done</u> some work about the house before 6.

1. My classes begin at 8:10.

---

2. We leave the house at ten minutes past eight and walk to the nearest bus-stop.

---

3. That is the time to share the latest news.

---

4. We are watching TV now.

---

5. It has made people better.

---

6. I have managed to do everything very well.

---

**VII. Use sentences in the Past and Future Simple, Continuous or Perfect Passive tense forms.**

<u>Example:</u> 1. I <u>am woken up</u> by my roommate.
2. I <u>was woken up</u> by my roommate.
3. I <u>shall be woken up</u> by my roommate.

<u>Example:</u> 1. Breakfast <u>is being served</u> now.

2. Breakfast was being served at that time.

Example: 1. The Flat has been rented by him.
2. The flat had been rented by him by August.
3. The flat will have been rented by him before September.

1. The latest news is listened to on the radio.

---

2. The latest news is shared by us.

---

3. The lecture is being presented now.

---

4. The report is being written by him now.

---

5. She has just left the house.

---

6. The classes have already begun.

---

7. They have had a lecture in physics.

---

**VIII. Answer the following questions:**

1. Where do you live and study?
2. Do you live in a dormitory or in a flat?
3. Who is your best friend at the University?
4. Do you get on well with your group mates?
5. How many classes do you have every day?
6. What subjects are you good at?
7. Where do you have lunch?
8. You don't have much free time on week-days, do you?
9. How often do you go to the library?
10. Do you use any modern means of education?

**IX. Discuss the following points of the text in the form of a dialogue. Use all types of questions.**

Example: 1. Do his parents live in Minsk?
2. Where does he study?
3. Can he live in a dormitory or in a flat?
4. Who shares the flat with the young man?
5. He studies at the University, doesn't he?

1. Renting a flat.
2. Morning routine.
3. At the University.
4. Having meals.
5. Leisure time.
6. In the evening.

**X. What do you think the authors meant by the following statements? Do you agree or disagree? Give reasons to support your opinion.**

1. Only the educated are free (Epictetus, Phrygian Stoic, philosopher, c AD 50-135).

2. The educated differ from the uneducated as much as the living from the dead (Aristotle, one of the most celebrated Greek philosophers, 384-322 BC).

3. Knowledge is power (Francis Bacon, British painter, 1909-1992).

**XI. Speak about your working day with your groupmate in the form of a dialogue.**

## NICK'S USUAL WORKING DAY

**I. Read and translate the text.**

Hi, nice to meet you all!

My name is Nick Price. I am a freshman at MIT – Massachusetts Institute of Technology. I am not from Boston myself. I was born in Vermilion, Ohio, not far from Cleveland.

My family is not very rich, that is why I can't afford to live on a campus. But it is a rule, that every student must reside during his or her freshman year on the campus. To cover some of the expenses I've got to work part-time on the campus. I work in cafeteria.

Now let me tell you about my usual working day. I wake up at seven in the morning. My alarm-clock radio is tuned to my favourite radio station. My roommate Todd Hall is a football player. He jogs every morning at 6:30. He is still out jogging when I get up. First I take a cold shower and brush my teeth. Then I dress myself up and rush to work – to the University cafeteria. I wash dishes and clean the tables. It is not a very interesting job, I know that, but soon I'll be a cook and will earn more. My boss Suzie is very strict but very nice when you do your job properly.

My first class starts at 11:15. The professor is never late for his classes. The lecture hall we sit in has about 100 seats. MIT is a very big school. I think that it is the best school of science and technology in the US.

At 2:00 p.m. I eat lunch at school cafeteria. The food is free for me because I work there. I am a vegetarian and I don't like drinks with caffeine. I prefer cool filtered water or juice.

Then I have two more classes. I need to go to the library right after the classes to do my homework. There I meet my friends and we talk a lot. Twice a week I play basketball with my friends. I swim once a week. Usually after library we go out to the cafe or just sit outside and talk.

I have dinner at 6:00 p.m. at the little Chinese restaurant not too far from the dormitory or I cook myself in the kitchen in my dorm. My favourite food is salami pizza and potato salad.

After dinner I watch TV or play ping-pong with my friends. When it is Friday, we go to the football game.

I usually read before I go to bed. It calms me down after the long day. I guess, that's pretty much it for now. See you later!

**II. Answer the questions.**

1. Where does Nick Price study?
2. What year of study is he in?
3. Is Nick from Boston?
4. Is Nick's family a rich one?
5. What is Nick's job? Do you think he enjoys it?

6. Is Massachusetts Institute of Technology a good school?
7. Where does Nick spend his evenings?
8. What does Nick usually do on Friday nights?

## EDUCATION IN BELARUS

**I. Before you read the text, talk about these questions.**

What institutions does the system of education in the Republic of Belarus include?
What are the most famous educational establishments in our country?

**II. Read the following words and learn their meaning.**

| | | |
|---|---|---|
| 1) | trend | тенденция, направление |
| 2) | unification | объединение |
| 3) | continuity | непрерывность, преемственность |
| 4) | to embrace | включать |
| 5) | vocational | профессиональный |
| 6) | retraining | переподготовка |
| 7) | compulsory | обязательный |
| 8) | to reveal | раскрывать, показывать |
| 9) | to acquaint | знакомить |
| 10) | elective | факультатив |
| 11) | simultaneously | одновременно |
| 12) | post-graduate | послевузовский |
| 13) | entity | организация, объект |
| 14) | grant | грант |
| 15) | scholarship | стипендия |
| 16) | defense | защита |
| 17) | thesis | научная работа, диссертация |

**III. Match the words in the box with definitions 1-12.**

| | | | |
|---|---|---|---|
| *simultaneously* | *compulsory* | *timetable* | *scholarship* |
| *to reveal* | *trend* | *continuity* | *elective* |
| *requirement* | *certificate* | *unification* | *establishment* |

1) an official document that states that the information on it is true
2) an amount of money given by a college or other organization to pay for the studies of a person with great ability
3) something that must be done; necessary by law or a rule
4) happening or being done at exactly the same time
5) the place where an organization operates
6) a subject that someone can choose to study as part of a course
7) the general direction of changes or developments
8) the state of something without change or interruption
9) something needed or necessary
10) a detailed plan showing when events or activities will happen
11) to make known or show something that was previously secret
12) the forming of a single thing by bringing together separate parts

**IV. Read the text and decide whether it is worth studying English. Use the dic-**

**tionary to look up unfamiliar words.**

The system of education in the Republic of Belarus is based on national traditions and global trends in world education. These guarantee equal access to all educational stages, unification of the requirements, continuity of all training stages and state financial support. The system of education in Belarus embraces a great number of educational establishments.

Today Belarusian educational system includes preschool education, secondary education (primary, basic and general secondary school), vocational education and secondary special education, higher education, postgraduate research education, adult education and retraining.

The system of education in Belarus starts with the preschool education. It is not compulsory in Belarus but around 70% of children attend nursery or kindergarten before they go to school. These institutions are for children under six years. Kindergartens develop physical growth, the ability to communicate, reveal personal qualities and talents. Children who attend kindergarten learn social skills when they play with other children. Such children are better prepared for primary school. Children are taught pre-reading and pre-writing as well as basic mathematics. The children learn to follow a timetable, respect their classmates and teacher. The public nurseries and kindergartens are free of charge but parents should pay for meals.

General secondary education in Belarus starts at the age of 6 and includes three levels: primary, general basic and general secondary. Secondary school starts with primary school where children are taught to read, count, draw, they are given knowledge in maths, nature studies and music. The primary and basic secondary school course is compulsory. It lasts for nine years. Secondary basic school itself acquaints pupils with culture, science, technology. Pupils study obligatory subjects like maths, biology, physics, chemistry, history and attend different electives to enrich their knowledge in favourite subjects as well as define their future profession. On successfully graduating from basic school, young people have the opportunity to continue their education at high school, college or vocational school. Those interested can simultaneously receive secondary education and professional training. The certificate of general secondary or secondary special education is the document which enables young people to continue their education at the university level.

The Belarusian system of higher education consists of universities, academies, and institutes. Universities and academies offer graduate and post-graduate programs and are engaged in fundamental research. Whereas universities offer education in a wide variety of areas, academies have a narrower specialization. Institutes are also highly specialized and usually have no post-graduate programs. They can function as separate entities or as part of a university.

Most courses run for 4 or 5 years. Higher educational institutions offer full-time (day) and part-time programs. The most common and popular is full-time education. Two-thirds of all students choose this form of education. Grants are available for full-time students and scholarships are awarded to very gifted students. Students who graduate with honors are awarded a "red certificate."

The degree that has been traditionally conferred by Belarusian higher educational institutions is Certified Specialist. It usually requires four or five years of training, success in final state examinations, and defense of a thesis. Graduates of higher education institutions have the possibility of receiving postgraduate education.

The Belarusian state policy for higher education is mainly based on the Constitution of the Republic of Belarus, the Code of the Republic of Belarus on Education, as well as

other state decrees and regulations. All types of educational establishments stimulate effectiveness of education according to one's abilities and inclinations and correspond to the state educational standards.

**V. Find equivalents to the following Russian word combinations in the text.**

1) мировые тенденции
2) доступ ко всем ступеням образования
3) раскрывать личностные качества
4) посещать различные факультативы
5) фундаментальные исследования
6) широкий выбор направлений
7) более узкая специализация
8) функционировать как отдельные объекты
9) выпускные государственные экзамены
10) по способностям и склонностям

**VI. Match the words to form word combinations. Make affirmative or negative sentences with each word combination.**

| | |
|---|---|
| national | research |
| equal | program |
| financial | knowledge |
| educational | a timetable |
| reveal | of a thesis |
| follow | establishment |
| to enrich | traditions |
| fundamental | support |
| defense | talents |
| part-time | access |

**VII. Complete the sentences with appropriate words or phrases from the box.**

| | | | |
|---|---|---|---|
| *social skills* | *obligatory* | *a "red certificate"* | *basic mathematics* |
| *general* | *free of charge* | *pre-school* | *scholarships* |
| *stimulate* | *full-time* | *higher education* | *future profession* |

1) The system of education in Belarus starts with the _____ education.
2) Children who attend kindergarten learn _____ when they play with other children.
3) Children are taught pre-reading and pre-writing as well as _____.
4) The public nurseries and kindergartens are _____.
5) _____ secondary education in Belarus starts at the age of 6.
6) Pupils study _____ subjects like maths, biology, physics.
7) Secondary basic school helps pupils define their _____.
8) _____ are awarded to very gifted students.
9) The system of _____ consists of universities, academies, and institutes.
10) Students who graduate with honors are awarded _____.
11) Two-thirds of all students choose _____ education.
12) All types of educational establishments _____ effectiveness of education.

**VIII. Complete the sentences with correct prepositions.**

1) General secondary education in Belarus starts _____ the age of 6.
2) The system of education in Belarus starts _____ the preschool education.
3) Children are given knowledge ____ maths, nature studies and music.
4) Around 70% of children attend nursery or kindergarten _____ they go to school.
5) The Belarusian policy for higher education is mainly based ___ state laws.
6) The certificate of secondary education enables young people to continue their education ___ the university level.
7) Kindergartens are for children _____ six years.
8) The educational policy in the Republic of Belarus guarantees equal access ___ all educational stages.
9) On graduating _____ basic school, young people have the opportunity to continue their education.
10) Universities and academies are engaged ____ fundamental research.

**IX. Read the text again and answer the following questions.**

1) What stages does Belarusian educational system include?
2) Is preschool education compulsory in our republic?
3) What advantages do kindergartens give to children?
4) Do parents have to pay for public nurseries and kindergartens?
5) How many levels does general secondary education include? What are they? Which of them are compulsory?
6) What is the role of primary school in children's life?
7) What opportunities do pupils have after graduating from basic school?
8) What is the difference between universities and academies?
9) Who can be awarded a "red certificate"?
10) What are the requirement for getting a Diploma of Certified Specialist?

**X. Fill in the table with the words given below.**

higher education — secondary special education
primary secondary school — general secondary school
vocational education — preschool education
basic secondary school

| | |
|---|---|
| 4-5 years | |
| 1-4 years | |
| | |
| | |
| 10-16 years old | |
| 6-10 years old | |
| 3-6 years old | |

## EDUCATION IN MY LIFE. WHY DO WE LEARN ENGLISH?

**I. Before you read the text, talk about these questions.**

Why do you think English is the world's most widely used language?
What are the advantages of studying English?
Is it important for your future profession to have skills in English?

**II. Read the following words and learn their meaning.**

| | | |
|---|---|---|
| 1) | to communicate | общаться |
| 2) | average | обычный |
| 3) | access | доступ |
| 4) | to strive | стараться, стремиться |
| 5) | widespread | широко распространённый |
| 6) | to conduct | проводить, осуществлять |
| 7) | to consider | считать, полагать |
| 8) | majority | большинство |
| 9) | option | выбор, возможность |
| 10) | content | содержание, контент |
| 11) | article | статья |
| 12) | to share | делиться, обмениваться |
| 13) | competitive | конкурентный |
| 14) | to attend | посещать |
| 15) | success | успех |

**III. Match the words in the box with definitions 1-12.**

| | | | |
|---|---|---|---|
| *widespread* | *content* | *to share* | *employability* |
| *to strive* | *to conduct* | *access* | *edge* |
| *to cover* | *mobility* | *to attend* | *outnumber* |

1) existing in many places or among many people
2) to go officially and usually regularly to a place
3) to organize and perform
4) the opportunity to use something
5) the skills and abilities that allow you to be employed
6) to report the news about a particular important event
7) an advantage over other people
8) the ability to move freely
9) everything that is contained within something
10) to be greater in number than someone or something
11) to put something on a social media website so that other people can see it
12) to try very hard to do something

**IV. Read the text and decide whether it is worth studying English. Use the dictionary to look up unfamiliar words.**

Nowadays English seems to be the only language that everyone feels the need to study. The reason is that it is the international language of the world which can be used cross-culturally to **communicate** with each other. Obviously, English opens so many doors for the **average** person, allowing **access** to people, places, jobs. It is not only one of the most popular mother tongues in the world but the main foreign language too. This means that two people who come from different countries usually use English as a common language to communicate. That's why everyone **strives** to learn the language in order to get in touch on an international level. Speaking it will help you communicate with people from different countries all over the world, not just English-speaking ones. English is the language which is spoken by perhaps 400 million people. It is a geographically **widespread** language and it is the official language of more than 60 sovereign states.

The knowledge of English is often important in fields like computing, business and medicine. Up to half of all business deals throughout the world **are conducted** in this language. English is the universal language of international politics and science. It opens doors to the academic world. Many European universities are becoming highly international: the common working language of visiting scholars, students and professors from all around the world is English. It is generally **considered** that English is the language of the scientific community. Most of the research and studies you find in any given scientific field will be written in it. For example, roughly 80% of all the journals are published in English, two-thirds of all scientific papers are published in English, and it is reported that only half of scientific **articles** written in English come from English-speaking authors.

On the Internet the **majority** of websites are written and created in English. Even sites in other languages often give you the **option** to translate the site. Learning English can help you communicate more effectively online while also giving you **access** to a much wider choice of **content**. When someone wants **to share** something with as large an audience as possible, English is the most likely language to choose. About 75% of the world mail correspondence is in English. At least 35% of Internet users are English speakers, and about 70% of the Internet **content** is in English although reliable figures on this are hard to establish.

It's the primary language of the press: more newspapers and books are written in English than in any other language. Half of the world newspapers are in English. Journalists and writers around the world think that a good command of English is an increasingly useful skill. Even if you are writing your articles and doing interviews in your own language, with good English you can get background material from international wire services, papers, and magazines from around the world. You can interview foreign diplomats, businessmen, and even get sent **to cover** overseas stories.

English opens doors to employment, education and **mobility**. The knowledge of the English language is vital in many professions. The ability to speak English increases an individual's **employability** – which is a big plus in today's **competitive** times. Publishing in foreign journals and **attending** international conferences are some of the key steps to **success** in career. Multinational corporations employ English speakers in offices around the world. All these facts prove the importance of knowing English for professional career. Whether you are aiming to be an engineer or a philosopher knowing English can give you a vital **edge** over others. Besides, learning languages broadens the mind and enriches all of us culturally.

Undoubtedly English has become a constructed international language developing professional and personal relationships. Non-native speakers now **outnumber** native speakers and as a result English belongs to the world rather than to any country. Do you agree with this and accept the fact that if you don't want to get left behind you should learn English?

**V. Find the equivalents to the following Russian word combinations in the text.**

1) распространённый язык
2) универсальный язык международной политики
3) достоверные данные
4) научное сообщество
5) посещение международных конференций
6) хорошее владение английским языком
7) расширять кругозор

8) обогащать в культурном отношении
9) давать важное преимущество над другими
10) остаться позади

**VI. Match the words to form word combinations. Make affirmative or negative sentences with each word combination.**

| | |
|---|---|
| mother | community |
| international | corporation |
| academic | skill |
| visiting | scholar |
| scientific | figures |
| reliable | career |
| useful | world |
| background | material |
| professional | tongue |
| multinational | politics |

**VII. Complete the sentences with appropriate words from the box.**

| | | | |
|---|---|---|---|
| *scientific* | *the mind* | *English-speaking* | *access* |
| *command* | *professors* | *cross-culturally* | *widespread* |
| *effectively* | *material* | *the ability* | *content* |

1) English as the international language can be used _____ to communicate with each other.
2) English allows _____ to people, places and jobs.
3) English is a geographically _____ language.
4) The common working language of visiting scholars, students and _____ from all around the world is English.
5) Two-thirds of all _____ papers are published in English.
6) Only half of scientific articles written in English come from _____ authors.
7) Learning English can help you communicate more _____ online.
8) About 70 % of the Internet _____ is in English.
9) A good _____ of English is an increasingly useful skill.
10) With good English you can get background _____ from international wire services, papers, and magazines.
11) _____ to speak English increases an individual's employability.
12) Learning languages broadens _____ and enriches all of us culturally.

**VIII. Read the sentences 1)-8). Match the phrases in bold with suitable definitions a)-h). Paraphrase the sentences.**

1) Nowadays everyone **feels the need** to study English.
2) Everyone strives to learn the language in order **to get in touch** on an international level.
3) English **opens so many doors for** the average person.
4) Most of all scientific papers **are published** in English.
5) Even sites in other languages often **give you the option** to translate the site.
6) Journalists can get background material from **international wire services, papers, and magazines**.

7) One of the key steps to success in career is **attending** international conferences.
8) Multinational corporations **employ** English speakers in offices around the world.
a) hire
b) outside sources
c) participating in
d) finds it necessary
e) to communicate
f) gives a lot of opportunities to
g) are released
h) allow

**IX. Answer the following questions. Use the sentences from the text.**
1) Is the English language one of the most popular mother tongues in the world?
2) How many people in the world speak the English language today?
3) Why is it said that English opens doors to the academic world?
4) How many articles written in English come from English-speaking authors?
5) What language option do websites often give you?
6) Why is English called the primary language of the press?
7) Why is a good command of English considered a useful skill for journalists?
8) What are some of the key steps to success in career according to the text?
9) How can you prove that knowledge of English increases an individual's employability?
10) Why is it possible to say that English belongs to the world rather than to any country?

**X. Prove that English is important in the modern world. Enumerate at least five advantages of knowing English. Try to use the following words and word combinations:**
To begin with
It is true that
First of all
What is more
Besides
Moreover
In addition to this
I can't but agree that
In conclusion I can say that

## 1.2. BREST STATE TECHNICAL UNIVERSITY IN THE SYSTEM OF HIGHER EDUCATION OF THE REPUBLIC OF BELARUS

### ANN'S ACADEMY

**I. Read and translate the text.**
Hello again! Now let me tell you about my Polytechnical Academy. I am really glad that I study here. It is one of the finest country's higher educational institutions. Many famous people have graduated from my Academy, and not only engineers or scientists, but

many outstanding writers, actors, showmen and politicians. Studying at our Academy gives a solid background in all spheres of knowledge and prepares for practical work.

Our Academy is quite large and old. It was founded in the 19th century by the famous Russian inventor Vladimir Komarov. First, it was a small department of a large University, but later it was rearranged into an independent institution. Nowadays it is a large school where more than 5,000 students are **currently enrolled.** About 3,000 **are full-time students,** like me, and the rest **are part time-students.** There are also about **150** graduate students. They **conduct** independent research work and have pedagogical practice.

The **course of study** at my academy lasts five years. There are many faculties in my academy. Here are some of them: the faculty of **industrial automation** and **robotics,** the faculty **of plastics,** the faculty **of machine tools** and the faculty **of metalworking.**

Our academy is large and we have several buildings. One of the buildings is for lectures and seminars only. There are many large halls there so that students of 3-4 groups together can fit in there. And that is more than 100 people. The acoustics [ə'ku:stiks] in such large halls is very good but sometimes it is very **noisy** when students **chat** during the lecture.

We have two laboratory buildings which are **equipped with up-to-date equipment** and there students can **carry on** lab works and conduct various experiments. Many students from my group do their own **research** work.

There are several cafes at the academy. My favourite one is situated in a separate **one-storeyed** building and people say that this is the oldest canteen or student's cafe. The food there is **tasty** and very **affordable.**

There are also several dormitories or hostel buildings where students from other cities live. But you know already that I don't live in a dormitory – I rent an apartment.

**Vocabulary:**

currently – в настоящее время
to be enrolled – числиться в списках студентов
full-time students – студенты дневного отделения
part time-students – студенты вечернего отделения
to conduct – проводить
course of study – курс обучения
industrial automation – промышленная автоматика
robotics – робототехника
plastics – пластмассы
machine-tools – станки
metalworking – металлообработка
figure – фигура, цифра
noisy – шумный
to chat – беседовать, болтать
to be equipped with – быть оборудованным
up-to-date equipment – современное оборудование
carry on – проводить
research work – исследовательская работа
one-storeyed – одноэтажное
tasty – вкусный
affordable – доступная (to afford – позволять)
classroom – класс, аудитория

lecture hall – лекционный зал
laboratory – лаборатория
gym (gymnasium) – спортзал
semester (term) – семестр
school year – учебный год
course of studies – курс обучения
academy – академия
university – университет
institute – институт
faculty, college, department – факультет
department, chair of... – кафедра
head of the department, chief of the department, chair (man, woman) – зав. кафедрой
substitute – заместитель
teaching instructor (TI) – преподаватель
professor – профессор
dean – декан
Rector – ректор
teaching staff, faculty members – преподавательский состав
full-time student – студент(ка) дневного отделения
part-time student – студент(ка) «вечерник»
student of distant education – студент(ка) «заочник»
student of preparatory courses – слушатель подкурсов, «подкурсник»
undergraduate student – студент 1-4(5) курсов
graduate student –студент 5-6 курсов (магистрант, аспирант)

**II. Tell about:**

a) your secondary school (college)
b) the faculty of your university
c) your favourite teacher at school.

**III. Do you know?**

1) When was your University or Academy established?
2) Who was the first Rector?
3) Were there any famous a) scientists, engineers b) politicians c) artists among the graduates of your Institute?
4) How many people are currently enrolled?
5) What is the most popular faculty in your Academy?

**IV. Do you agree or disagree with the following statements:**

a) Larger schools are better than smaller ones.
b) It is impossible to enter the university if you haven't attended preparatory courses.
c) The best professors are the oldest ones.
d) It is better to live in a dormitory or student hostel than to rent an apartment.
e) Professors always know more than students and teaching instructors.

**I. Read the following words and word combinations. Learn their meaning.**

| | | |
|---|---|---|
| 1) | training | подготовка |
| 2) | conduct research work | проводить исследовательскую работу |
| 3) | construction | строительство |
| 4) | mechanical engineering | машиностроение |
| 5) | full-time students | студенты дневного отделения |
| 6) | teaching staff | преподавательский состав |
| 7) | graduate | выпускник |
| 8) | Civil Engineering | ПГС |
| 9) | Ltd | ООО |
| 10) | extra-mural | заочный |
| 11) | degree | степень |
| 12) | dormitory | общежитие |

**II. Read the text Brest State Technical University and decide whether it is a one of the best universities in our country. Prove your opinion.**

INTRODUCTION

Brest State Technical University is one of the largest scientific and educational centres in the western part of the Republic of Belarus. BrSTU enables **training** of highly qualified specialists and **conducts** fundamental scientific **research work** in the fields of **construction**, architecture, electronics, **mechanical engineering**, economy and ecology.

BRIEF HISTORY

Brest State Technical University began as a Civil Engineering Institute on April 1, 1966.The first intake was 330 full-time students and 110 evening-class students. The teaching staff numbered 32 teachers. In 1969 the number of students reached 2700, namely 1960 **full-time students**, 480 evening-class students, 260 part-time students. The **teaching staff** increased till 186 teachers. In 1989 the institute was reorganized into Brest Polytechnic Institute. Since then Mechanical Engineering, Economics and Electronics Faculties were opened, new specialties appeared; the spectrum of research work has expanded. Now it is the largest technical institution of higher learning in the western region of Belarus. In 2000 Brest Polytechnic Institute was incorporated as a State Technical University. Since its foundation more than 43000 specialists have graduated from the University. At present it is a large educational and scientific centre with its teaching staff, scientists and **graduates** contributing a lot to the development of science and engineering.

GENERAL INFORMATION

*Faculties*

Being one of the largest educational and scientific centres in the western part of Belarus Brest State Technical University has a broad and constantly developing infrastructure. The training is conducted at 5 faculties:

1) Civil Engineering Faculty

Civil Engineering is one of the oldest faculties of the university. More than 1,300studentsstudy there. The faculty is a part of the International Association of Construction Departments, within the framework of which introduction of new technologies in educational process for training of construction industry specialists is conducted. Students learn to design buildings, organize construction work, build roads and airfields and conduct real estate expertise. You may also become an Architect here, at Faculty of Civil En-

gineering.

2) Faculty of Engineering Systems and Ecology.

The faculty was established in 1971, its first name was Amelioration. The system of teaching at the faculty combines general theoretical and general engineering training with deep special training. All departments of the faculty have well-equipped laboratories and offices. They are equipped with the latest technical teaching aids, computing techniques, equipment. In the process of teaching students learn about ecological problems, organization of safety activity, and the introduction of effective technologies for natural and waste water purification.

3) Faculty of electronic information systems.

The faculty was established in 2005 as a result of reorganization of the Faculty Mechanical Engineering and Electronics, which had existed since 1984, on the basis of specialties of the electronic information profile. Many professors of the faculty are fluent in English, have repeatedly undergone scientific and training course abroad, and have been conducting their courses in English for many years for students who come to the university with a help of various international exchange programs, undergraduate and graduate students. Since 2013/14 academic year, a group of students (foreign and Belarusian ones) is being trained for the specialty "Automatic Data Processing Systems", the training is conducted in English. Successful graduates of the faculty are offered job positions and also they can find a job independently at the best IT enterprises of Brest and the Republic of Belarus, which are residents of the High Technologies Park:Ltd. "Epol Soft",EPAM systems inc., Ltd. "Tectus Media", etc.

4) Mechanical Engineering Faculty

The Faculty of Mechanical Engineering was established as an electronic mechanical faculty in 1984 with the view of training highly-qualified personnel for the machine-building and electronic industries that are high developing in the western region of the Republic of Belarus based on the specialty "Machine-Building Technologies". The electronic-mechanical faculty was reorganized on August 15, 2005 as a result of which the Faculty of Mechanical Engineering was established. Mechanical Engineering Faculty trains engineers of practical orientation: technologists, designers, mechanics, automation specialists in the field of industrial production, road transport, food production and other branches of the national economy.

5) Faculty of Economics

The Faculty of Economics was established on the 1st of February, 1995. The faculty trains specialists for various fields of economic activity. Effective partnership with many enterprises and organizations of the city have been established, which gives an opportunity to have off-site classes, carry out real

The Department of Pre-University Training

At the Departmebt of Pre-University Training young people can revise and consolidate what they have learnt at secondary school to successfully pass their entrance examinations at the University. Here they are also provided with the guidance in the choice of their future speciality and prospects of professional career. The Faculty offers a wide range of programs to satisfy various demands of young people seeking for extensive study curriculum:

•evening and extramural preparatory courses for high school students; the courses optionally cover mathematics, physics, a foreign language, drawing, and technical drawing;

•short-term pre-university courses covering one subject at a student’s option;

•a full-time or correspondence pre-university course for holders of a secondary education certificate; the course covers several subjects at a student's option;

•a full-time pre-university for international students.

International students who have no command of the Russian language or whose Russian language proficiency may not yet have reached a suitable standard for study can follow a one-year course at the Pre-University Department. The course provides students with elementary and advanced learning of the Russian language with a specialization in the subjects which are relevant to the students' chosen line.

The students get higher education in 21 specialities and 29 specializations. The total student population is about 12, 000 people. The training course lasts 4 years and 10 months (or 3 years and 10 months) for full-time students while 5 years and 10 months (or 4 years and 10 months) for part-time students.

Professional and Teaching Staff

The teaching staff numbers more than 500 members. The scientific potential of the University includes 14 Doctors of Science, 152 Candidates (Ph.D.) and experienced academic instructors. Some of them are the scientists known all over the world.

Development Tendencies

One of the main priorities in the University development is further supply of the teaching process with necessary computing equipment and software in addition to the available ones. The university has already got a local computer network of more than 460 computers at all the faculties, departments, scientific centres and specially equipped classrooms. So the students and the University stuff are provided with access to the shareable campus database as well as Internet through satellite and inland channels. In compliance with the above stated priority a lot is being done to introduce advanced technologies into the teaching process for teaching and testing applications. The campus-based Institute of Professional Development and Re-Training gives the University students an opportunity to get a second Diploma of higher education in the line chosen. This enables the University graduates to be awarded with two Diplomas and get qualification in two specialities. It is evident that our future progress depends on the creation of new high technologies and technical equipment of superior quality. Everything will be determined by engineering and a standard of professional training.

Besides, the development of the University is adapted to satisfy the needs of the Belarus Republic and of Brest region in specialists:

- The conditions are being created for highly-qualified training of economists and managers;
- The range of new specialties connected with electronics and computers is being expanded;
- The Scientific Research Institute for the problems of Construction Engineering organized in May 2004 is successfully being developed;
- The process of reformation of the system of the University is being carried out to offer Master and Bachelor programs.

The University main research lines are the following:

– building units and materials, roof coatings, pavements, organization of labour, techniques, design engineering;

– wear-resistant composite materials, resource-saving and material-strengthening technologies in mechanical engineering;

– novel technologies of fuel utilization;

– advanced water distribution and water supply systems, rational nature manage-

ment schemes;

– environmental protection, ecological security;

– neuron-type computer network systems of artificial intellect; ultrasound technologies, luminescent light-emitters.

University Facilities

BSTU is almost a fifty-year-old educational establishment with its own traditions which are followed by the University staff in its work by combining science, studies and practice to their best advantage. The University has created all necessary conditions for forming and educating specialists understanding their responsibility and possessing knowledge and competence required for successful creation of the country's future. High-quality technology and successful studying are made possible by the currently available educational facilities: many workshops, laboratories, computer classes fitted out with up-to-date equipment and devices, and a library having a stock of more than 400000 books by native and foreign writers. The campus-based Research Institute was set up to carry out research work on the problems in the construction industry of the country. The specialists of the Institute among whom are the University academic staffs and senior students take an active part in the reconstruction of Brest and rehabilitation of the town's old buildings. Diploma design projects of our students range high at international competitions and research works are awarded with first- and second-degree Diplomas at republican competitions of research works. Some university students take out patents on their inventions and participate in arranging trial production.

Non-Academic Opportunities

On the university campus there are dormitories with all conveniences (shared occupancy in double/triple adjacent rooms). The University has well-developed social services available on the campus. Excellent athletic and recreational facilities are also available on the campus. There are 14 sport societies for those who want to keep themselves fit and enjoy their free time. The University rents modern sports complexes and provides gyms and table-tennis rooms on the campus. Annually, our students take part in open competitions and championships in Belarus and become prize-winners in karate, power-lifting, boxing, arm-wrestling.

*Canteens*

Canteens provide students and employees with healthy food. On the campus there are also two student cafes, which will offer you varied menu at accessible prices. Located on the campus, the café “Zodchie” provides freshly made hot and cold food.

*Hostels*

University disposes of four comfortable student hostels, which have gyms, rooms for studies and rest.

*Dispensar*y

Huge attention is paid to student’s health. On the territory of the campus there is sanatorium-dispensary, where students have an opportunity to improve their health. You will be offered various types of massage, electro- and phototherapy, inhalation therapy, mineral and medical bath.

Students' festivals and performances as well as various societies run by the *Students' Club*and the International Students’ Club help students to spend their free time to the best advantage and reveal their creative abilities.

International Contacts

The University develops close contacts with higher educational establishments in Germany, Poland, Ukraine, China, Republic of Korea, France and Russia. We have long-

term partner contacts with Bialystock Polytechnic Institute (Poland), Lublin Polytechnic Institute (Poland), Higher Technical Professional School in Biberach(Germany) and Higher Technical School in Ravensburg-Weingarten (Germany), Middle East Technical University (Turkey).This partnership creates an essential basis for mutually useful training activity and scientific research.

Brest State Technical University actively participates in numerous international projects and programs, communicates with educational and scientific funds including European ones – TACIS, ERASMUS,

The University is a member of the Association of European Civil Engineering Faculties with the participation of civil engineering faculties from non-European countries, AECEF. In 2009 BrSTU joined the Baltic Sea Academy, Hamburg-based organization that unites European universities and academies, with the aim to intensify the University's international cooperation.

The University participates in international innovation exhibitions in Hannover and Saint Petersburg. Research in IT, architecture and construction are carried out at the University. International conferences and seminars are held in the areas of electronics, architecture and construction, ecology, economy, mechanical engineering.

All the above mentioned international partnerships and relations create an essential basis for mutually useful academic activity and scientific researches.

CONCLUSION

The graduates of Brest State Technical University have opportunities to carry out their creative activity in science, engineering and private business in all sectors of our economy as well as of foreign countries. After graduating from Brest State Technical University, a number of students become promising scientists, some of them continue their scientific activity at the University delivering lectures and supervising new lines of scientific research. The university is constantly developing, that's why it has turned into one of the leading educational and scientific centres in the western part of Belarus.

**III. Make a presentation about your faculty. You may use information from the English version of official BrSTU website. *http://en.bstu.by***

**IV. Write a letter to student studying at foreign university.Describe:**

– Structure of your university
– Your faculties
– Specialties and specialization
– Period of studying
– Your favouriteteachers
– Subjects studied at your faculty
– Extra-curricular activities.

**V.Translate the following quotations and comment upon them**

*Education is an admirable thing, but it is well to remember from time to time that nothing that is worth knowing can be taught.*

Oscar Wilde

*I have no special talent. I am only passionately curious.*

Albert Einstein

*The philosophy of the school room in one generation will be the philosophy of government in the next.*

Abraham Lincoln

*A person who won't read has no advantage over one who can't read.*

Mark Twain

*Education is the most powerful weapon which you can use to change the world.*

Nelson Mandela

*The function of education is to teach one to think intensively and to think critically. Intelligence plus character - that is the goal of true education.*

Martin Luther King

*The roots of education are bitter, but the fruit is sweet.*

Aristotle

*Education is for improving the lives of others and for leaving your community and world better than you found it.*

Marian Wright Edelman

*An investment in knowledge pays the best interest.*

Benjamin Franklin

*Give a man a fish and you feed him for a day; teach a man to fish and you feed him for a lifetime.*

Maimonides

*Education must not simply teach work – it must teach Life.*

W. E. B. Du Bois

*Formal education will make you a living; self-education will make you a fortune.*

Jim Rohn

*You can teach a student a lesson for a day; but if you can teach him to learn by creating curiosity, he will continue the learning process as long as he lives.*

Clay P. Bedford

**VI. Read the text about METU. Compare its structure and facilities with BrSTU.**

Middle East Technical University (commonly referred to as METU) is a public technical university located in Ankara, Turkey. The university puts special emphasis on research and education in engineering and natural sciences, offering about 40 undergraduate programs within 5 faculties, and 97 masters and 62 doctorate programs. The main campus of METU spans an area of 11,100 acres (4,500 ha), comprising, in addition to academic and auxiliary facilities, a forest area of 7,500 acres (3,000 ha), and the natural lake Eymir. METU has more than 120,000 alumni worldwide. The official language of instruction at METU is English. Middle East Technical University was founded under the name "Orta Doğu Teknoloji Enstitüsü" (Middle East Institute of Technology) on November 15, 1956, to contribute to the development of Turkey and the surrounding countries of the Middle East, Balkans, and Caucasus, by creating a skilled workforce in the natural and social sciences.

In 1956, the Department of Architecture initiated the first academic program at METU, followed by the Department of Mechanical Engineering in the spring of 1957. At the start of the 1957–1958 academic year, the Faculty of Architecture, the Faculty of Engineering, and the Faculty of Administrative Sciences were established. In 1959, the establishment of the Faculty of Arts and Sciences was completed. The Faculty of Education launched its academic program in 1982.

As of 2010, METU has approximately 23,000 students, of which 15,800 are enrolled in undergraduate programs, 4,500 in masters, and 2,700 in doctorate programs.

METU has 42 academic departments, most of which are organized into 5 faculties:

*Faculty of Architecture*: Architecture, City and Regional Planning, Industrial Design

*Faculty of Arts and Sciences*: Biology, Chemistry, History, Mathematics, Molecular Biology and Genetics, Philosophy, Physics, Psychology, Sociology, Statistics

*Faculty of Economic and Administrative Sciences*: Business Administration, Economics, International Relations, Political Science and Public Administration

*Faculty of Education*: Computer Education and Instructional Technology, Educational Sciences, Elementary Education, Foreign Language Education, Physical Education and Sports, Secondary Science and Mathematics Education

*Faculty of Engineering*: Aerospace Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Electrical and Electronics Engineering, Engineering Sciences, Environmental Engineering, Food Engineering, Geological Engineering, Industrial Engineering, Mechanical Engineering, Metallurgical and Materials Engineering, Mining Engineering, Petroleum and Natural Gas Engineering

In addition to these, there are the Department of Basic English and the Department of Modern Languages in the School of Foreign Languages; the Technical Vocational School of Higher Education; and, bound directly to the President's Office, the Department of Turkish Language and the Department of Music and Fine Arts.

The University develops close contacts with BrSTU. A number of our students have studied for 1 term in METU due to Erasmus academic mobility programs. In 2017, within Erasmus program, the head of Foreign language department of BrSTU Mr. V.I. Rahuba delivered lectures in Business English at METU.

## MY UNIVERSITY. WELCOME TO BREST STATE TECHNICAL UNIVERSITY

**I. Pronounce the following words correctly and learn their meaning.**

1. graduate ['grædjuət] –выпускник
2. contribute [kən'tribjut] –делать вклад
3. extra-mural ['ekstrə'mjuərəl] –заочный
4. priority [prai'ɔrɪtɪ] –приоритет
5. available [ə'veiləbl] –доступный
6. access ['æksəs] – доступ
7. compliance [kɔm'plaɪəns] –соответствие
8. application [əplɪ'keɪʃən] –применение
9. enable [ɪ'neɪbl] –дать возможность
10. award [ə'wɔ:d] –присуждать, награждать
11. evident ['evɪdənt] –очевидный
12. creation [krɪ'eɪʃn] –создание
13. determine [dɪ'tə:mɪn] –определять
14. advantage [əd'va:ntɪdʒ] –преимущество
15. responsibility [rɪs,pɔnsɪ'bɪlɪtɪ] –ответственность
16. possess [pə'zes] –обладать, владеть
17. require [rɪ'kwaɪə] –требовать
18. facilities [fə'sɪlɪtɪz] –оборудование
19. fit [fɪt] –соответствовать
20. rank [ræŋk] –занимать какое-либо место
21. invention [in'venʃn] –изобретение
22. trial ['traɪəl] –пробный

23. amenities [ə'mi:nɪtɪz] –всё, что соответствует хорошему настроению
24. recreation [rəkrɪ'eʃn] –развлечение, отдых
25. participate [pa:tɪsɪpeɪt] – участвовать

**II. Read and translate the text.**

The state policy of the Republic of Belarus in the field of higher education is based on three priorities: available education, its quality and the financial efficiency of the activities of higher education institutions (HEI). Ever since it declared its sovereignty, higher education in Belarus has experienced considerable growth. The number of undergraduates has increased from 180 to 475 people per ten thousand citizens. The Belarusian state policy for higher education is mainly based on the Constitution of Belarus, the Code of the Republic of Belarus on Education, as well as other decrees and regulations of the President and the Council of Ministers of the Republic of Belarus. The state program defined the order and terms of transition in the various stages of professional training at undergraduate level (4, 4.5 and 5 years). The Code of the Republic of Belarus on Education regulates the professional training of Belarusian citizens and sets out the legal, organizational and financial basis for the national higher education system. The process of receiving higher education includes two stages: The first stage is realized by higher education providing training in areas of specialization, confirmed by the corresponding qualification and specialist's diploma (4, 4.5 or 5-year curriculum). The second stage is realized by research and professionally oriented Master's Degree programs, confirmed by a Master's Degree diploma (1 or 2-year curriculum). Graduates of higher education institutions also have the possibility of receiving postgraduate education. On May 14th, 2015, Belarus joined the Bologna Process and the European Higher Education Area (EHEA). The decision was made at the Yerevan Conference of Education Ministers of the EHEA and the Bologna Policy Forum.

Brest State Technical University began as Civil Engineering Institute in 1966 and later was changed into Brest Polytechnical Institute. At present it is a large educational and scientific centre with its teaching staff, scientists and graduates contributing a lot to the development of science and engineering.

Brest State Technical University is one of the largest educational and scientific centres in the western part of Belarus having a broad and constantly developing infrastructure. The University is divided into 8 faculties: Civil Engineering, Engineering Systems and Ecology, Mechanical Engineering, Electronic and Information Systems, Economics, Preparatory Faculty, Faculty of Extra-Mural Studies and Faculty of Innovation, Management and Finance. The students get higher education in 27 specialties. The teaching staff numbers more than 600 members including Doctors of Science and Candidates of Science. Some of them are scientists known all over the world.

One of the main priorities in the University development is the further supply of the teaching process with the necessary computing equipment and software in addition to the available ones. The university has already got a local computer network of more than 500 computers at all the faculties, departments, scientific centres and specially equipped classrooms. So the students and the University stuff are provided with the access to the shareable campus database as well as Internet through satellite and inland channels. In compliance with the above stated priority a lot is being done to introduce advanced technologies into the teaching process for teaching and testing applications.

The campus-based Institute of Further Education and Retraining gives the University students an opportunity to get a second Diploma of higher education in the line chosen. This enables the University graduates to be awarded with two Diplomas and get qualifica-

tion in two specialties.

It is evident that our future progress depends on the creation of new high technologies and technical equipment of superior quality. Everything will be determined by engineering and a standard of professional training. BSTU is a fifty-year-old educational establishment with its own traditions which are followed by the University staff in its work by combining science, studies and, practice to their best advantage. The University has created all necessary conditions for forming and educating specialists understanding their responsibility and possessing knowledge and competence required for successful creation of the country's future. High-quality technology and successful studying are made possible by the currently available educational facilities, many workshops, laboratories, computer classes fitted out with up-to-date equipment and devices, and a library having a stock of more than 700,000 books by native and foreign writers. The campus-based Research Institute was set up to carry out research work on the problems in the construction industry of the country. The specialists of the Institute including the University academic staff and senior students take an active part in the reconstruction of Brest and rehabilitation of the town's old buildings. Diploma design projects of our students range high at international competitions and research works are awarded with the first- and second-degree Diplomas at republican competitions of research works. Our students take out patents on their inventions and participate in arranging trial production. The University has well-developed social services available on the campus. Excellent athletic and recreational facilities are also available on the campus. Students can participate in sports activities to keep themselves fit and enjoy their free time. Students' festivals and performances as well as various societies run by the Students' Club help students to spend their free time to the best advantage and display their creative abilities.

The University develops international contacts in the sphere of science and education with institutes of higher learning in Russia, Ukraine, Poland, Germany, Great Britain, Italy, Spain and Portugal. Our University graduates have opportunities to carry out their creative activity in science, engineering and private business in all sectors of our economy as well as of foreign countries. On graduating the University, a number of students become promising scientists, some of them continue their scientific activity at our University delivering lectures and supervising new lines of scientific research. We are proud of our University and of the fact that it constantly develops turning into one of leading educational and scientific centres in the Western part of Belarus.

**III. Complete the sentences:**

1. The state policy of the Republic of Belarus in the field of higher education is based…

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2. The Belarusian state policy for higher education is mainly based on …

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3. Brest State Technical University began…

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4. At present Brest State Technical University is…

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5. The University is divided into 8 faculties:…

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6. The University develops international contacts…

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**IV. Find the synonym to the first word in each row:**

1. award – give – access – enable

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2. determine – extra-mural – decide – compliance

---

3. possess – advantage – possible – own

---

4. require – depend – need – combine

---

5. recreation – invention – staff – refreshment

---

6. stock – supply – trial – research

---

7. state – express – carry – deliver

---

**V. Find the suitable meaning to each of the words:**

| | |
|---|---|
| 1.graduate – | a) high place among competing claims |
| 2.contribute – | b) plain or clear to the eyes or mind |
| 3.priority – | c) person who holds a university degree |
| 4.available – | d) production of the human intelligence |
| 5.application – | e) that may be used or obtained |
| 6.evident – | f) join with others in giving help, money, etc. |
| 7.creation – | g) putting to a special or practical use |

**VI. Translate the following sentences. Pay attention to the Gerund.**

Example: The Institute of Further Education and Retraining gives the University students an opportunity to get a second Diploma.

Институт повышения квалификации и переподготовки даёт студентам университета возможность получить второй диплом.

1. It is evident that our future progress depends on creating new high technologies.

---

2. Everything will be determined by engineering and a standard of professional training.

---

3. BSTU is fifty- year - old education establishment with its own traditions which are followed by the University staff in its work by combining science, studies and practice to their best advantage.

---

4. Correspondence and evening forms of learning are a good opportunity for persons with financial, age, physical and other limitations.

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5. Every establishment occupies its particular niche in training of highly qualified staff for various branches of national economy.

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6. There are three forms of learning available at Belarusian higher educational estab-

lishments: full-time, evening and by correspondence.

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7. Full-time learning is the most widespread.

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**VII. Answer the following questions:**

1. Did Brest Technical University begin as a Civil Engineering Institute?
2. What educational establishment is it now?
3. What has a broad and constantly developing infrastructure?
4. How many faculties is it divided into?
5. The students get education in 21 specialties, don't they?
6. What is the total student population?
7. What can you say about the teaching staff?
8. Can you name one of the main priorities of the University?
9. What kind of opportunities do the students have?
10. High - quality teaching and successful studying are made possible by the educational facilities, aren't they?
11. What was set up to carry out research work on the problems in the construction industry of the country?
12. Who takes an active part in the reconstruction of Brest?
13. Do the students take out patents?
14. Are there any recreational facilities at the University?
15. Why are you proud of the university?

**VIII. Discuss the following points of the text in the form of a dialogue. Use all types of questions.**

Example:1. Is BSTU one of the largest educational and scientific centres?

2. When was the University founded?
3. Who contributes a lot to the development of science and engineering?
4. Is the University divided into 7 or 9 faculties?
5. The students get higher education in many specialities, don't they?

1. The foundation of BSTU.
2. The structure of the University.
3. Great opportunities for students.
4. Educational facilities.
5. The achievements of the students.
6. Recreational facilities.

**IX. What do you think the authors meant by the following statements? Do you agree or disagree? Give reasons to support your opinion.**

1. The educated differ from the uneducated as much as the living from the dead (Aristotle, one of the most celebrated Greek philosophers, 384-322 BC).
2. An education isn't how much you have committed to memory, or even how much you know. It's being able to differentiate between what you do know and what you don't (Anatole France, French novelist and critic, 1844-1924).
3. Education is a progressive discovery of our ignorance (Will Durant, US teacher, philosopher, and historian, 1885-1982).
4. They know enough who know how to learn (Henry Adams,(US historian, essay-

ist, and novelist, 1838-1918).

5. Knowledge is power (Francis Bacon, British painter, 1909-1992).

6. The essence of knowledge is, having it, to apply it; not having it, to confess your ignorance (Confucius, Chinese philosopher, administrator, and moralist, 551 BC-479 BC).

7. Anyone who stops learning is old, whether at twenty or eighty. Anyone who keeps learning stays young. The greatest thin£ in life is to keep your mind young (Henry Ford, US industrialist and pioneer in car manufacture, 1863-1947).

8. Learning makes a good man better and an ill man worse (Thomas Fuller, English cleric and historian, 1608-61).

**X. Speak about the University with your groupmate in the form of a dialogue.**

## BENEFITS OF EDUCATION

**I. Look through the sayings of famous people. Explain how you understand their words.**

1) *An investment in knowledge pays the best interest.*(Benjamin Franklin)

2) *Education is what remains after one has forgotten what one has learned in school.*(Albert Einstein)

3) *Education is the most powerful weapon which you can use to change the world.*(Nelson Mandela)

**II. Read the following words and learn their meaning.**

| | | |
|---|---|---|
| 1) | aspect | аспект, сторона |
| 2) | to allow | позволять |
| 3) | opportunity | возможность |
| 4) | to develop | развивать |
| 5) | to devote to | посвящать |
| 6) | benefit | преимущество, польза |
| 7) | ultimate | окончательный |
| 8) | to enroll in | зачислять в |
| 9) | generation | поколение |
| 10) | society | общество |
| 11) | to contribute to | делать вклад в |
| 12) | wages | заработная плата |
| 13) | device | устройство, прибор |
| 14) | government | правительство |
| 15) | to advance | идти вперёд |
| 16) | improvement | улучшение |
| 17) | life expectancy | продолжительность жизни |
| 18) | to gain | получать, приобретать |

**III. Match the words in the box with definitions 1-12.**

| | | | |
|---|---|---|---|
| *to support* | *significant* | *promotion* | *discovery* |
| *income* | *to affect* | *to encourage* | *vital* |
| *free* | *citizenry* | *poverty* | *compulsory* |

1) to provide the necessities of life

2) money which one receives regularly as payment for work or interest from invest-

ments

3) having noticeable importance, effect or influence
4) advancement to a more important rank or position
5) costing nothing, without payment of any kind
6) to influence, to cause some change
7) a group of people who live in a particular city, town, country
8) finding something for the first time
9) to help someone feel able to do something
10) the condition of being extremely poor
11) extremely important
12) something that must be done by law or rules

**IV. Read the text. Use the dictionary to look up unfamiliar words.**

Education is an important **aspect** that plays a huge role in the modern world. It helps us build opinions on different things in life, make right decisions and understand reality better. It gives us knowledge about the world around us. Education does not only **allow** people to read or write, but also offers them the **opportunity** to have a good life, communicate better, **develop** new technologies and **support** the economy.

Each of us **devotes** a big part of our life **to** education. It starts from childhood, where kids learn everything from what is happening around them. The whole education can be divided into three divisions: primary education, secondary education and higher education. All these divisions have their own importance and **benefits**. Primary education prepares the base which helps throughout the life, secondary education prepares the path for further study and higher education prepares the **ultimate** path to the future.

Primary and secondary education is free and **compulsory** in many countries around the world. In most countries education is compulsory up to the age of 16. Hardly anyone can realize that about 61 million children in the world are not **enrolled in** primary school. Of these kids, 40 million live in **poverty**. It is hard for those people living below the poverty line to even imagine sending their kids to school because education is not **free**. If there is a choice between eating a meal and educating a child, most families choose eating a meal. Boys are often kept out of school so they can work and bring in money for the family, while girls cook and do other things that are needed to keep the family functioning.

Fortunately, more and more people understand how important education is for future **generations**. If there is a deficit of educated people the **society** can't develop. Education **contributes to** individual and social benefits, such as higher **wages**, greater life satisfaction, higher national **income**, healthier population and a better functioning society. It produces **significant improvements** in health, and **life expectancy**. Countries with an educated **citizenry** are more likely to be democratic and politically stable. Moreover, educated people can effectively contribute to the development of their country by making **discoveries** in various spheres, inventing new **devices** or producing new medicines to cure people. That is why the **governments** of the majority of countries realize the importance of education and pay serious attention to it. Governments all around the world spend money on good education systems, and people are actively **encouraged** to win scholarships and continue their studies.

And what is the importance of education for individuals? Whether a person is living in poverty or among the wealthiest in the world, education is necessary **to advance** in any situation. It is becoming one of the main factors for a person's success in today's society. It develops confidence and builds personality of a person.

What can you do to improve and grow in your career? When it comes to self-improvement, we know a lot of methods. To get fit, you eat right and exercise. To grow your physical strength, you train and lift weights. To improve your memory, you get enough sleep and learn new things. To grow in your career, you've got to deepen your knowledge and **gain** new skills. People agree that education is the best investment because well-educated people have more opportunities to get a good job which is well-paid. They enjoy respect among their colleagues and have more hopes for **promotion**. So education is the most powerful tool to improve your career.

No matter how difficult it can be to study, it's **vital** to remember that education is a privilege that every person should appreciate. It **affects** our lives significantly and offers us lots of opportunities. It's our choice to use them or not, but it's better to have this choice.

**V. Find the equivalents to the following Russian word combinations in the text.**

1) принимать правильные решения
2) развивать новые технологии
3) поддерживать экономику
4) путь для дальнейшего обучения
5) черта бедности
6) будущие поколения
7) нехватка образованных людей
8) удовлетворённость жизнью
9) политически стабильный
10) выигрывать стипендию
11) пользоваться уважением среди коллег
12) приобретать новые навыки

**VI. Complete the sentences with correct prepositions.**

a) Education helps us build opinions _____ different things in life.

b) Education is an important aspect that plays a huge role _____ the modern industrialized world.

c) Each of us devotes a big part of our life _____education.

d) The whole education can be divided _____ three divisions.

e) Higher education prepares the ultimate path _____ the future.

f) Secondary education is free and compulsory _____ many countries.

g) About 61 million children in the world are not enrolled _____ primary school.

h) It is hard for those people living _____ the poverty line to even imagine sending their kids to school.

i) Education contributes _____ individual and social benefits.

j) The governments of the majority of countries realize the importance _____ education.

k) Governments all around the world pay serious attention _____ education and-spend money _____ good education systems.

l) Education is becoming one of the main factors for a person's success _____ today's society.

m) Well-educated people enjoy respect _____ their colleagues.

**VII. Match the words to form word combinations. Give Russian equivalents to them.**

| | |
|---|---|
| life | stable |

| | |
|---|---|
| industrialized | scholarships |
| to make | devices |
| higher | studies |
| national | education |
| politically | decision |
| to continue | expectancy |
| to win | skills |
| significant | world |
| to deepen | improvement |
| to invent | income |
| to gain | knowledge |

**VIII. Complete the sentences using the words in bold from the text.**

1) Education offers people the opportunity _____ new technologies.
2) Education is an important _____ that plays a huge role in modern world.
3) Primary and secondary education is _____ in many countries.
4) Higher education prepares the _____ path to the future.
5) Education contributes to a better functioning _____.
6) Education is important for future _____.
7) _____ all around the world spend money on good education systems.
8) Education produces significant _____ in life expectancy.
9) Well-educated people have more hopes for _____.
10) To improve your career you've got _____ new skills.

**IX. Read the text again and answer the following questions.**

1) When does education start in person's life?
2) What is the role of primary education on in our life?
3) Is secondary education compulsory in most countries?
4) Why do children in poor countries have no opportunity to attend primary school?
5) Does the level of education influence the political life of a country?
6) How can educated people contribute to the development of their country?
7) What social benefits of education are listed in the text?
8) Why is education considered to be the best investment?
9) How can education improve your career?
10) Education is a privilege that every person should appreciate, isn't it?

**X. Do you know when the International Day of Education is celebrated? When was it proclaimed? Find this information and try to formulate the aims of celebrating the International Day of Education.**

## BREST STATE TECHNICAL UNIVERSITY

**I. Read and translate the text.**

Brest State Technical University (BrSTU) is a large scientific and educational center in the western region of the Republic of Belarus. Here specialists are trained and a large volume of scientific research is carried out in the spheres of civil engineering, architecture, electronics, mechanical engineering, economics and ecology.

Since 2011, the university has a quality management system. The development of

the university is taking into account the changing needs of the republic and the region in the specialists: conditions are created for the training of highly qualified specialists; the expansion of the list of specialties is systematically planned.

BrSTU is a member of the Association of European Faculties of Civil Engineering with the participation of faculties of civil construction of non-European countries (AECEF), and is also a member of the Association of the Baltic Sea Academy. The university constantly takes part in international innovation exhibitions in Hannover and St. Petersburg, conducts research in the field of information technology, architecture, construction, ecology, water resources use.

In 2009, BrSTU joined the Baltic Sea Academy, Hamburg-based organization that unites European universities and academies, with the aim to intensify the University's international cooperation.

The Civil Engineering Faculty, as a part of the European Association of similar faculties, is developing and is preparing to give diplomas recognized in the EU countries in the near future to its graduates; the quality of the practical training of specialists is enhanced by combining theoretical training with the industrial practice of students of civil engineering specialties; a transition to a two-level training of specialists - specialists and masters.

Brest State Technical University is a member of the Association of Technical Universities and the Association of Network Cooperation, is a part of a consortium working on 6 projects of Erasmus + program. The University has signed over 130 cooperation agreements with leading foreign universities.

The University has scientific-research laboratories: "Self-stressed constructions", "Artificial neural networks", "Pulsar".

The University participates in international innovation exhibitions and hosts international conferences and seminars in the areas of electronics, information technologies, architecture and construction, ecology, economy, and social sciences.

The active participation of students in the creative life of the university, amateur groups and cultural events contributes to the formation of a comprehensively developed, spiritually moral, creative and socially active personality. It is facilitated by the activities of the department of student initiatives and cultural and leisure activities at the university. Traditional cultural events, holiday concerts, competitions and festivals are organized and held during the academic year.

Amateur groups are created and conduct creative activities in various art genres.

Numerous high awards, diplomas of winners and gratitude for participation in the republican festivals of creativity of students testify to the high performing level, the creative successes of the university teams and students at different art festivals: "ART-vakatsyi", "F.-ART.by", "We are Together" "The Palette of Creativity" (Belarus), international choir festivals "Provence" and "Averon" (France), the "European Cup" (Belarus), the festival of university choirs "Universitas cantat" (Poland) and "Paparats Kvetka" (Belarus), festivals of spiritual music "Hajnowka" (Poland), "Derzhavnyi glas", "Harmony of the times" (Belarus), festivals of art song " Univision" (Azerbaijan), "Russian Song" (Russia) and others.

*International relations and main international actions*

The University develops close contacts with higher educational establishments in Germany, Poland, Ukraine, China, Republic of Korea, France and Russia.

We have long-term partner contacts with Bialystock Polytechnic Institute (Poland), Lublin Polytechnic Institute (Poland), Higher Technical Professional School in

Biberach(Germany) and Higher Technical School in Ravensburg-Weingarten (Germany).

This partnership creates an essential basis for mutually useful training activity and scientific research.

Brest State Technical University actively participates in numerous international projects and programs, communicates with educational and scientific funds including European ones – TACIS, TEMPUS, INTAS, etc.

We are interested in establishing effective mutually beneficial partnership relations with universities all over the world in the following areas of cooperation:

– exchange of faculty members and students;
– joint research activities;
– participation in seminars and other academic events;
– collaboration in technopark areas.

## ENGLISH UNIVERSITIES

**I. Read the following words and learn their meaning.**

| | | |
|---|---|---|
| 1) | excellence | превосходство |
| 2) | available | доступный |
| 3) | destination | пункт назначения, цель |
| 4) | devotion | преданность |
| 6) | maintain | поддерживать |
| 7) | supervision | руководство |
| 8) | mentoring (syn. coaching) | наставничество |
| 9) | curator | куратор |
| 10) | expertise [eksp3ːˈtiːz] | экспертный |
| 11) | establishment | учреждение |
| 12) | enroll | зачислять |
| 13) | achievement | достижение |
| 14) | attract | привлекать |
| 15) | high-tech | высокотехнологичный |
| 16) | pursuit [pəˈsjuːt] | стремление |
| 17) | rowing | гребля |
| 18) | martial arts | боевые искусства |
| 19) | innovative | передовой |
| 20) | applicant | абитуриент, кандидат |
| 21) | community | сообщество |
| 22) | elective | факультативный курс |
| 23) | discretion | усмотрение |
| 24) | administration | управление, администрирование |
| 25) | diverse | разнообразный |

**II. Match the words in the box with definitions 1-12.**

| | | | |
|---|---|---|---|
| *elective* | *high-tech* | *mentoring* | *attract* |
| *diverse* | *devotion* | *destination* | *expertise* |
| *supervision* | *innovative* | *pursuit* | *applicant* |

1) a person who formally requests something, especially a job, or to study at a college or university

2) using the most advanced equipment and methods

3) a subject that someone can choose to study as part of a course
4) a place where someone is going
5) love or care for someone or something
6) varied or different, including many different types of things
7) having a high level of skill or knowledge
8) a process of helping and giving advice to a less experienced person
9) responsibility for the good performance of an activity of a person
10) an attempt to achieve something
11) to make people want to visit a place or find out more about something
12) using new methods or ideas

**III. Read the text. Use the dictionary to look up unfamiliar words.**

The higher education system in the UK has been the basis for higher education standards in other countries for years. English universities are known for their academic **excellence** among numerous other advantages. They have an undisputed reputation for the quality of education with thousands of courses **available** for students. They make up an ideal **destination** for over a million international students from all over the world. Let's have a look at some of them.

Oxford and Cambridge Universities are known throughout the world because of their courses and **devotion** to the quality of education. Oxford is the oldest of these two universities, it is more philosophical, classical, theological.

Oxford University is known as the first university in the English-speaking world. It was opened in 1096. The University of Oxford has **maintained** its status as the leading educational and research centre in Britain. Its specialists conduct research in the field of technology and medicine. A unique feature of the university is the educational system. It is based on **supervision** and **mentoring**, and the maximum attention is paid to the personal preparation of each student. The schedule depends on program and course. It includes academic studies, meetings with **curators**, sports and recreational activities. Intensity and type of educational process are chosen by students themselves.

There are around 24,000 students currently enrolled at the University of Oxford. This university offers around 350 graduate degree programs, and it is constantly ranked on top of the major worldwide ranking lists. A lot of international students from 150 countries are getting their qualifications at this university. Known for its **expertise** and qualified academic staff, University of Oxford is one of the most favored study destinations for students around the world.

This university offers degree programs in the following fields of study: Humanities, Medical Sciences, Social Sciences and Mathematical, Physical and Life Sciences.

Cambridge University is one of the oldest in the English-speaking world and one of the finest universities in the UK. It has been working in Britain since 1209. The university offers a large variety of courses and professional academic staff. Leading experts of the world work with students in various fields. Here high-quality education in the best British traditions is available. The educational **establishment** has over 18,000 students **enrolled** in its degree programs. This university has a reputation for intellectual **achievements** of its students, and has a status of one of the most successful research institutes in Europe and the world. It has a membership in a variety of international associations.

Cambridge University **attracts** thousands of international students worldwide as well. In the university curatorship is practiced. Such system allows to achieve high academic results. Studying is as **high-tech** as possible. Students in the university are given an

opportunity to use the most advanced equipment in academic and research activities. The schedule of lessons is individual for each course and group. A typical Cambridge University student day includes academic **pursuits**, physical activity (sport), creativity and recreation. In addition, circles of theatrical art and music are offered to the attention of students. At the university, students are given an opportunity to play sports. The choice of sports is huge: rugby, horseback riding, **rowing**, parachuting, yachting, yoga, **martial arts**, shooting, etc.

This university offers degree programs in the following fields of study: Arts and Humanities, Biological Sciences, Clinical Medicine, Humanities and Social Sciences, Physical Sciences, Technology.

University College London (UCL) is an ideal and **innovative** place to get a degree. It offers some of the best conditions to study in, with modern facilities and equipment. This university gathers ambitious students from all around the world, with more than 13,000 in staff and 42,000 students from 150 different countries. UCL was founded in 1826 and ever since then it has created generations of successful graduates with 29 Nobel Prize laureates among its graduates.

This university was the first educational institution in Britain, which opened the doors for **applicants** of any race and class, religious convictions, s Today UCL is oneof the most international universities in the country. More female professors than in other universities in Britain work here. A busy college life is one of the features of the ULC. The university organizes more than 180 **communities** and thematic clubs. The program of extra-curricular activities in the college includes conferences, master classes, trips, entertainment, sports. The schedule for each student group provides theoretical, practical classes, profile **electives**. Students organize leisure activities at their own **discretion**.

This university offers degree programs in the following fields of study: Arts & Humanities, Built Environment, Brain Sciences, Engineering Sciences, Laws, Life Sciences, Mathematical & Physical Sciences, Medical Sciences, Population Health Sciences, Social & Historical Sciences.

London School of Economics and Political Science is the best university for specialists in financial and political science. The school is famous for the high quality of education in public **administration**. It offers applied specialties in finance, economics, social policy. This university employs leading professors from several highly ranked universities. Lectures on political science, government management may read the leaders of many countries. Bill Clinton, David Cameron, Angela Merkel, Tony Blair, Dmitry Medvedev, Nelson Mandela and others were in the conference rooms of the London School.

Today, the London School of Economics and Political Science (LSE) unites 9,000 students from 140 countries. The teaching staff of the university is also multinational. Teachers from 45 countries work here. The LSE has 19 research centres. Scientists and students of the university work in the field of political science, law, economics.

The UK is the perfect example of a **diverse** environment where students get to earn their skills and qualifications It goes without saying that Cambridge and Oxford universities are the most respected. Nevertheless, the diplomas of other educational centres, such as Imperial College London, The University of Edinburgh, The University of Manchester and others, create a competitive advantage when applying for a job.

**IV. Find equivalents to the following Russian word combinations in the text.**

основа стандартов высшего образования

среди множества других преимуществ

преданность качеству образования
в области техники и медицины
на вершине крупнейших мировых рейтингов
членство в различных международных ассоциациях
добиться высоких академических результатов
поколения успешных выпускников
программа внеклассных мероприятий
по собственному усмотрению
прикладные специальности в области финансов
из нескольких высокорейтинговых университетов
Это само собой разумеется
конкурентное преимущество

**V. Look at the names of some disciplines studied at English universities. Match the Russian equivalents with them.**

| | |
|---|---|
| Humanities | Гуманитарные и социальные науки |
| Medical Sciences | Клиническая медицина |
| Social Sciences | Социальные науки |
| Mathematical, Physical and Life Sciences | Физика |
| Arts and Humanities | Технология |
| Biological Sciences | Антропогенная среда |
| Clinical Medicine | Законодательство |
| Humanities and Social Sciences | Математика, физика и ест. науки |
| Physical Sciences | Технические науки |
| Technology | Социально-исторические науки |
| Built Environment | Медицина |
| Engineering Sciences | Естественные науки |
| Laws | Наука о здоровье населения |
| Life Sciences | Искусство и гуманитарные науки |
| Population Health Sciences | Гуманитарные науки |
| Social and Historical Sciences | Биология |

**VI. Complete the sentences with correct prepositions.**

1. English universities are known _____ their numerous advantages.
2. Thousands of courses are available _____ students.
3. The educational system is based _____ supervision and mentoring.
4. The schedule depends _____ program and course.
5. _____ addition, circles of theatrical art and music are offered.
6. UCL was founded _____ 1826.
7. Students organize leisure activities _____ their own discretion.
8. The school is famous _____ the high quality of education.
9. The leaders of many countries may read lectures _____ political science and government management.
10. It goes ___ saying that Cambridge and Oxford universities are the most respected.

**VII. Underline the correct alternatives.**

1. English universities *know / are known* all over the world.

2. Cambridge University *was working / has been working* in Britain since 1209.
3. Students *give / are given* an opportunity to use the most advanced equipment.
4. University College London *was founded / founded* in 1826.
5. Over 18,000 students *enrolled / are enrolled* in the degree programs.
6. Students *are chosen / choose* the type of educational process.
7. UCL *was opened / opened* the doors for applicants of any race and class.
8. Oxford University *was opened / opened* in 1096.
9. This university *is offered /offers* a number of graduate degree programs.
10. The schedule *provides / is provided* theoretical and practical classes.

**VIII. In the sentences below fill in the appropriate part of speech derived from the word on the right.**

| | |
|---|---|
| 1) English universities are known for their _____advantages. | NUMBER |
| 2) They open their doors for over a million _____ students from all over the world. | NATION |
| 3) The maximum attention is paid to the personal _____ of each student. | PREPARE |
| 4) A lot of students are getting their _____ at this university. | QUALIFY |
| 5) The university offers a large _____ of courses. | VARY |
| 6)This educational _____ has a reputation for its quality of education. | ESTABLISH |
| 7) Cambridge University is one of the most _____ research institutes in Europe. | SUCCESS |
| 8) The intellectual _____ of its students are rated highly. | ACHIEVE |
| 9)Circles of _____ art are offered to the students. | THEATER |
| 10) It offers the best conditions with modern _____ . | EQUIP |

**IX. Make a short summery of the text. Do it according to the following plan:**
1. The title of the text is … .
2. The text is devoted to … .
3. Oxford University is known as … .
4. Cambridge University offers … .
5. University College London was the first educational institution … .
6. London School of Economics and Political Sciences is the best university for….
7. The main idea of the text is … .

## 1.3. THE REPUBLIC OF BELARUS IN THE MODERN WORLD

## THE BELARUSIAN CHARACTER

**I. Read and translate the text and do the following tasks.**

The formation of the modern national character of Belarusians was influenced by various historical and geographical factors and one of them is specific natural and climatic conditions of Belarus, which are characterized by many kilometers of forests, swamps, isolation of settlements, etc.

Geographically Belarus is located in the center of Europe and this feature played a cruel joke with the Belarusians during the Middle Ages. Neighbouring countries often fought with each other, and at that time Belarus was turning into a "staging post" for them. But the Belarusians managed to achieve peace with small sacrifices. After centuries, all this has transformed into a national trait: a Belarusian is able to come to an agreement with anyone and about anything. It is not for nothing that the national anthem begins with the words: "We, Belarusians, are peaceful people".

One of the characteristic features of Belarusians, which is noted by all foreigners, is endless kindness. The Belarusian will lay the table for you (even if he has no money), will always help you for "thank you" (although he will not refuse to help in return) and is ready to "give the last shirt" if you really ask. It doesn't matter what colour your skin is, what god you believe in and where you come from. You will be accepted as you are. Here, in Belarus you can easily find a cheerful company of Belarusian, African American and Asian among the students. Orthodox Church, Catholic Church and Synagogue can peacefully stand on the same square (as, for example, in Grodno).

Belarusians are the most hardworking people in Europe. This is not surprising because since childhood, young Belarusians have been cultivating responsibility and accuracy in their work. Belarusians, in general, are not prone to laziness and the desire to get as much as possible without making any effort.

Despite many difficulties, the majority of Belarusians continue to love and value their country. This is proved by a large - scale study, as a result of which 79% of respondents aged 18 to 70 said they are proud of Belarus and their nationality.

Belarusian cities are European - style clean and well-groomed. And this is typical not only for Minsk or Brest, where there are many tourists, but also for the towns. The secret here is not in the special infrastructure of cities, but in the fact that Belarusians are prone to cleanliness. For example, in many courtyards of blocks of flats, residents are independently engaged in the improvement of the surrounding territory and planting beautiful trees and flowers.

The Belarusians always remain faithful to high moral values and good traditions: Kolyady, Radonitsa, Kupala, Dozhinki and etc.

All these are unique Belarusian holidays that Belarusians carried through the centuries into the 21st century.

As for the language, there is a stereotype that the Belarusians have completely abandoned their native language and you can only hear it in the Belarusian language lessons at school. This is not entirely true: of course, in the region centres Belarusians often use Russian for communication, but in small towns a huge number of people continue to speak either exclusively Belarusian or its dialects.

Let us see what has been influencing the formation of the Belarusian national character. We`ll start with the natural and climatic conditions.

The climate in the republic is moderately continental, the breathing of the Baltic sea is constantly felt here. We have no frosts or high temperature jumps in the summertime. Sharp contrasts outside, inside and in the souls are not typical for Belarus.

Our rivers are flat, calm and not very deep. They are homely and dear. Belorussian`s natural scenery is wide, lonely plains covered with hills, and many lakes and forests. The Belarusian character has no somberness and tense readiness for unexpected dangers. The nature of Belarus does not know storms. Therefore, the Belarusians are trustful and optimistic.

Belarus is a country of developed industry, agriculture, science and culture. Belarus-

ian industry produces trucks and tractors, dump trucks, refrigerators, TV sets and dairy products. Also Belarusians produce soil, sand or clay that is why they are patient and hardworking. We must be able of doing much. Diligence and universality help us to survive. Moreover, the Belarusians are undemanding and modest. To a certain degree they are accustomed to poverty.

The advantageous geographical position – on the crossroads from east to west and from north to south – more than once turned into disadvantage. Belarus was the arena of many wars, invasions and aggressions. But so much international contacts influenced the most distinctive features of the Belarusian national character – tolerance and hospitality. Belarusians can hardly be named fatalists, but if there is violence used against them, they have no choice than to reach for a weapon to defend themselves. History proves it too well.

**II. Are the sentences true or false according to the text?**

1. The formation of the modern national character of Belarusians was influenced by various historical and geographical factors.
2. Geographically Belarus is located in the West of Europe and this feature played a cruel joke with the Belarusians during the Middle Ages.
3. One of the characteristic features of Belarusians, which is noted by all foreigners, is endless laziness.
4. Orthodox Church, Catholic Church and Synagogue can peacefully stand on the same square.
5. Belarusians, in general, are prone to laziness and the desire to get as much as possible without making any effort.
6. Despite many difficulties, the majority of Belarusians continue to love and value their country.
7. The Belarusians always remain faithful to high moral values and good traditions.
8. As for the language, there is a stereotype that the Belarusians have completely abandoned their native language and you can only hear it in the Belarusian language lessons at school.

**III. Read the text and say in 2-5 sentences what it is about.**

Belarusian customs and traditions

Belarus has deep historical roots in the past that's why its customs and traditions often have a fascinating history. The most ancient Belarusian traditions and holidays can be classified according to four seasons of the year: spring, summer, autumn and winter.

In ancient times the arrival of spring reassured mankind. It was a sign that life would return to the land, crops would grow and existence was assured. Belarus has a remarkable range of spring-time celebrations, for example Calling of Spring. This holiday dates back to the pagan times.

One of the greatest Christian holidays in Belarus has always been Easter Sunday. There are two Easter holidays in Belarus: the Roman Catholic and the Russian Orthodox ones with painted eggs and special pies.

The summer festivities start in July beginning with the greatest holiday Kupalle. The essential part of this celebration is the great fire. The oiled wooden wheel is set on fire to symbolize the sun. According to the belief this fire has a purifying power. Young couples hand in hand must jump it over. One of the main traditions of Kupalle is search for the mythic paparats-kvetka (fern flower). Those, who find it, will enjoy good luck for the

whole year and their wishes will come true

Autumn has its own holidays. They are traditionally connected with the end of the harvesting time. In ancient times it has always been the wedding season. That's why so many traditions and customs are connected with marriage, for example match-making, bride-show, wedding itself, special songs, games etc.

In late autumn we have Dziady. It is a day for commemoration of the dead relatives. The special ritual food is cooked for Dziady dinner. According to the tradition part of the food and drink is left in a special plate and glass for the dead. At this day families are going to the cemeteries to take care of the graves.

The winter solstice used to be a time for meditation on the year gone by and of hope for the year to come. That's why people asked the sun to come back, they sang songs to honor it. Thus the Kaliady holiday appeared, which later became the integral part of Christmas, the greatest holiday in the year.

New Year is widely celebrated all over the country. Preparations to this holiday start a couple of weeks before. The towns and cities of Belarus put on holiday attire; illumination, New Year trees in the squares and New Year fairs add to the holiday mood. The culmination of the festivity is the December 31— January 1 night, when various concerts and open-air merrymaking take place. January 1 is an official holiday. The Belarusian people are proud of the country's past and its traditional culture.

**Answer the questions:**

- What are the spring-time celebrations?
- What are the greatest Christian holidays in Belarus?
- What can you say about Kupalle?

## AT THE CROSSROADS OF EUROPE. BELARUS. WELCOME TO BELARUS

**I. Before you read the text, talk about these questions:**

1) Do you know what sign "Made in Belarus" means?

2) Do Belarusians use the Belarusian language in everyday life?

3) Is Belarus an attractive tourist destination? How does free-visa entry support tourism in our country?

**II. Read the following words and learn their meaning.**

| | | |
|---|---|---|
| 1) | sovereign | суверенный |
| 2) | to border on (with) | граничить с |
| 3) | to occupy | занимать |
| 4) | to stretch for | простираться |
| 5) | terrain | местность |
| 6) | coniferous | хвойный |
| 7) | meadow | луг |
| 8) | rare | редкий |
| 9) | reserve | заповедник |
| 10) | peat | торф |
| 11) | potassium | калий |
| 12) | gravel | гравий |
| 13) | clay | глина |
| 14) | competitive | конкурентный |

15) favorable благоприятный
16) flax лён
17) livestock домашний скот
18) conduct вести (торговлю)
19) expenditure расход, потребление
20) cooperation сотрудничество
21) extensive обширный
22) highway автомагистраль, шоссе
23) toll пошлина

**III. Match the words in the box with definitions 1-12.**

| | | | |
|---|---|---|---|
| *humid* | *flora and fauna* | *flat* | *to constitute* |
| *leading* | *a capital* | *to export* | *route* |
| *legislative* | *a supplier* | *network* | *a deposit* |

1) a city which is the centre of a country or other politicalarea
2) to form or make something
3) containingextremelysmalldrops of water in the air
4) having little or no height
5) plants and animals.
6) relating to the making of laws
7) a layer that has formed under the ground, especially over a long period
8) a country(a person, a company) that provides particular goods
9) best, most important, or most successful
10) to send goods to another country for sale
11) a large system consisting of many similar parts that are connected together
12) a particular way or direction between places

**IV. Read the text. Use the dictionary to look up unfamiliar words.**

The Republic of Belarus is a young sovereign state situated in the eastern part of Europe. It borders in the north and east on Russia, in the west on Poland, in the south on Ukraine, in the northwest on Latvia and Lithuania. Modern Belarus occupies the territory of 207,600 square kilometers and it stretches for 650 km from east to west and for 560 km from north to south. The Republic of Belarus consists of six regions, the largest cities of which are Minsk, Gomel, Brest, Vitebsk, Grodno and Mogilev. The capital and the largest city is Minsk, located in the center of the country.

About 9,5 million people live in Belarus. Ethnic Belarusians constitute about 81% of the population of the country. Russians, Poles, Ukrainians and other nationalities also live in Belarus. About two thirds of people live in urban centers. Today both the Belarusian and Russian languages are official languages of the country.

Belarus has a temperate continental climate with mild humid winters, warm summers and wet autumns. Belarus has a generally flat terrain. Nature is the main landmark of the country. Belarus is the land of vast plains and picturesque hills, thick forests and green meadows, deep blue lakes and flowing rivers. About one third of its territory is covered with forests, mostly coniferous and birch. Belarus is famous for its rich flora and fauna. The country is inhabited by hundreds of rare species of animals and plants, especially in Belovezhskaya Pushcha. It is one of the national symbols of Belarus, the largest forest in Europe and a unique tourist center. The reserve is the major home of European bison, the biggest representative of European fauna.

Belarus is often called the land of rivers and blue lakes. There are more than 20,000 rivers and streams in Belarus, and about 11,000 lakes. Naroch is the largest lake in Belarus. The Dnepr is the longest and the most important river in Belarus. It flows from Russia, through Belarus into Ukraine, providing important shipping channel between the Baltic Sea and the Black Sea.

Natural resources are mainly represented by thirty types of minerals. Peat is in the first place among energy resources. Peat deposits are quite rich and can be found in every region. Potassium salts take the leading position among the minerals. The country is one of the five biggest suppliers of potassium in the world. There are also deposits of coal, oil, gravel, sands and clays in Belarus.

The Republic of Belarus has a significant economic potential which makes it possible to produce competitive industrial and agricultural products. The brand «Made in Belarus» is known in many countries. Belarusians participate actively in leading international economic forums. The most developed branches of industry are machine building, radioelectronics, chemical and food industry. The most important manufactured products are tractors, transport vehicles, trucks, agricultural machinery, metal-cutting machines as well as consumer goods such as bicycles, clocks and watches, refrigerators, TV sets and others.

More than half of the land is used for agriculture. The climatic conditions are favorable for growing potatoes, grains, sugar beet, flax and vegetables. Agriculture specializes in milk and meat production. Livestock production (cattle, hogs, sheep and goats) accounts for more than 50 % of agriculture and is the main source of funds for the development of the agricultural sector of the country.

Belarus exports tractors, heavy lorries, motorcycles, TV and radio-sets, furniture, carpets, textiles, chemicals and foodstuffs. Imports include fuel, natural gas, industrial raw materials, metal, chemicals, cotton, sugar, vegetable oil, fish products, tea, coffee, wine. Fuel is the largest import expenditure. Russia is the most important trade partner. Belarus also conducts trade with the countries of the European Union (Great Britain, Poland, Germany, Lithuania, the Netherlands, Latvia, Belgium and Norway). There is a positive dynamics in cooperation with the traditional partners in Latin America, such as Brazil, Cuba, Ecuador, and in Asia, notably with China, India, Vietnam, Israel, Korea and Japan.

Due to its geographical position right in the center of Europe our country is an international corridor connecting the West and the East. Belarus has an extensive transportation system, including networks of railroads, highways, air and water routes. The major railroad which was built in 1860s to connect Moscow and Warsaw, runs through Belarus via Minsk and Brest. The M1 is the main road crossing Belarus. It forms a part of European route and is the most important road link in the country connecting Moscow with Poland and Western Europe. There is a system of toll roads in the Republic of Belarus. This technology enables foreign road users to pay tolls.

Belarus has several international airports. Minsk has a modern national airport which accepts international flights from all over Europe. This is the fastest and most comfortable way to get to Belarus, but the most expensive at the same time.

Belarus has a network of water routes that connects the country with the bordering states. Navigation routes are known to go along the Dnepr-Bug Canal, the rivers Sozh, Berezina, Dnepr, Pripyat, Neman and others. They improve water transportation of cargo and passengers by linking the mentioned rivers with the ports on the Baltic Sea and the Black Sea.

Participation in the international organizations enables Belarus to achieve its political goals, contribute to the development of the country and modernize its economy. In

1945 Belarus became a founding member of the United Nations. Today Belarus is a member of over 60 international organizations, among them the United Nations, UNESCO, the World Health Organization, the International Bank for Reconstruction and Development, the International Monetary Fund, the European Bank for Reconstruction and Development, the Customs Union and the Eurasian Economic Union.

Belarus is a presidential republic. State power in the country is formed and realized through three main branches: legislative, executive and judicial. Under the constitution the president is the head of the state and directs the domestic and foreign policy. A two-chamber parliament is the main legislative body of the state. The executive branch is represented by the Council of Ministers headed by the prime minister. The judicial power in the republic consists of three high courts: the Supreme Court, the Supreme Economic Court and the Constitutional Court. The latter is charged with protecting the constitution. It has the power to review the constitutionality of presidential edicts and the decisions of the other two high courts.

As Belarus is situated in the center of Europe, a lot of wars took place on its territory. The World War II is one of the most tragic periods in the history of Belarus. Its territory was occupied by the Nazi for three years. The country lost more than three million people. Belarus also lost more than half of its national wealth, a lot of towns and villages were ruined.

Nowadays, Belarus has become a sovereign independent state with a well-developed industry and agriculture, science and culture. It contributes to the world peace, friendship and cooperation among nations.

**V. Fill in the table below.**

| Official name | *The Republic of Belarus* |
|---|---|
| Area | |
| Administrative centres | |
| Capital | |
| Official languages | |
| Population | |
| Ethnic groups | |
| Climate | |
| Natural resources | |
| International relationships | |
| System of government | |

**VI. Find equivalents to the following Russian word combinations in the text.**

суверенное государство
состоять из шести регионов (областей)
умеренный континентальный климат
редкие виды животных и растений
уникальный туристический центр
судоходный канал
природные ресурсы
месторождения угля
экономический потенциал
производить конкурентоспособные товары
животноводство

промышленное сырьё
платные дороги
достичь политические цели
указы президента

**VII. Match the words to form word combinations. Give Russian equivalents to them.**

| | |
|---|---|
| sovereign | system |
| urban | hills |
| official | symbol |
| continental | state |
| flat | resources |
| picturesque | airport |
| thick | centre |
| national | routes |
| shipping | language |
| natural | terrain |
| leading | climate |
| transportation | channel |
| navigation | forest |
| international | position |

**VIII. Complete the sentences with correct prepositions. Translate the sentences into Russian.**

a) The Republic of Belarus borders _____ Russia, Poland, Ukraine, Latvia and Lithuania.

b) Modern Belarus stretches _____ 650 km from east to west and _____ 560 km from north to south.

c) The Republic of Belarus consists _____ six regions.

d) Minsk is located _____ the centre of the country.

e) About one third of the territory is covered _____ forests.

f) Belarus is inhabited _____ hundreds of rare species of animals and plants.

g) Peat is _____ the first place among energy resources.

h) Belarusians participate _____ leading international economic forums.

i) There is a positive dynamics in cooperation _____ the traditional partners in Latin America.

j) The major railroad in Belarus was built _____ 1860s.

k) Navigation routes go _____ the Dnepr-Bug Canal, the rivers Sozh, Berezina, Dnepr, Pripyat, Neman and others.

l) Participation _____ the international organizations enables Belarus to contribute _____ the development of the country.

m) The executive branch is represented _____ the Council of Ministers.

**IX. Read the text again and answer the following questions.**

1) Where is the Republic of Belarus situated?
2) What is the territory of the Republic?
3) How many administrative regions are there in Belarus?
4) What is the population of the country?

5) What is the climate of Belarus?
6) What national reserve symbolizes our Republic?
7) What natural resources of Belarus do you know?
8) What are the most developed branches of industry in Belarus?
9) What does agriculture specialize in?
10) Belarus exports various goods, doesn't it? What are they?
11) What is the largest import expenditure?
12) Why is the M1 the main road in the country?
13) What international organizations does Belarus participate in?
14) What can you say about the Republic's political system?
15) How did the World War II influence our country?

**X. Make a plan of the text: put the information below in the right order as it is given in the text. Discuss each point of the plan.**

1) Industry
2) Nature
3) Geographical position
4) Export, import
5) Population
6) Transportation system
7) Natural resources
8) International organizations
9) Agriculture
10) Political system
11) World war II
12) Climate

**XI. Read the text about important facts in the history of our country. Complete the text with additional information about the facts mentioned.**

The first written documents of the Belarusian statehood go as far back as 980 AD when Prince Rogvolod began his reign on Polotsk lands, which are the historic and religious center of the Belarusian nation and culture.

From the 13th till the 16th century the territory of contemporary Belarus was the center of a medieval polyethnic state - the Grand Duchy of Litva. The lands of contemporary Belarus, Lithuania, the Ukrainę and a part of Russia comprised this state.

The period that started in the 15th century, when the crusaders expansion was crushed in the west, and lasted until the middle of the 17th century is considered the Golden Age in Belarusian history. This period was marked with significant evolutionary processes in the culture and economy of Belarusian people.

In 1569 the Grand Duchy of Litva and the Polish Kingdom established a political union according to which the Litva-Poland confederation – Rzecz Pospolita – emerged. As a result of three divisions of Rzecz Pospolita in 1772, 1793 and 1795 between three empires – Russia, Austria and Prussia – the Belarusian lands were incorporated into the Russian Empire.

On December 30,1922 the Communist governments of Belarus, Russia, the Ukrainę and Caucasus created the Union of Soviet Socialist Republics, which included the major part of the former Russian Empire. On August 1991 Belarus declared its independence.

**I. Pronounce the following words correctly and learn their meaning:**

1. divide [di´vaid] – делить
2. include [in´klu:d] – включать
3. promote [prə´məut] – продвигать
4. humidity [hju´miditi] – влажность
5. coniferous [kəu´nifərəs] – хвойный
6. rare [rɛə] – редкий
7. peat [pi:t] – торф
8. gravel [´grævəl] – гравий
9. clay [klei] – глина
10. survey [sə:vei] – обследование
11. recent [´ri:snt] – недавний
12. contribute [kən´tribjut] – способствовать
13. output [´autput] – продукция
14. account [ə´kaunt]– составлять
15. crop [krɔp] – с/х культура
16. barley [´ba:li] – ячмень
17. rye [rai] – рожь
18. flax [flæks] – лён
19. livestock [´laivstɔk] – домашний скот
20. expenditure [iks´penditʃə] – расход
21. conduct [kən´d^kt] – вести
22. connect [kə´nekt] – связывать
23. serve [sə:v] – служить
24. create [kri´eit] – создавать
25. legislature [´ledʒisleitʃə] – законодательная власть
26. judicial [dʒu´diʃəl] – судебный
27. protect [prə´tekt] – защищать
28. enormous [i´nɔ:məs] – громадный
29. devastation [devəs´teiʃən] – опустошение
30. rapid [´ræpid] – быстрый
31. ancient ['eɪnʃənt] –старинный, древний

**II. Read and translate the text.**

The Republic of Belarus is a country in Eastern Europe, bordered in the north and east by Russia, in the south by the Ukraine, in the west by Poland, and in the northwest by the Baltic republics of Lithuania and Latvia. The capital and largest city is Minsk, located in the centre of the country.

The total area of Belarus is 207 600 sq km. Belarus is divided administratively into six provinces, or oblasts, which have the same names as their largest cities: Minsk, Brest, Gomel, Grodno, Mogilev, and Vitebsk.

The population of Belarus is over 9.5 mln. Nearly 80 percent of its people are ethnic Belarusians. Russians make up 12 percent. Smaller groups include Poles and Ukrainians. About two-thirds of Belarus people live in urban centres. The official state languages are Belarusian and Russian. In the early 1900's, two Belarusian poets, Yanka Kupala and Yakub Kolas, helped to promote the use of the Belarusian language in literature. Formerly,

most literary works were written in Russian or Polish. About 215 daily newspapers are published in Belarus, 130 in Belarusian. Most Belarusians finish secondary school, and many receive higher education. There are a lot of universities in Belarus. The Belarusian State University in Minsk is the largest one.

Belarus has a temperate continental climate, with cool temperatures and high humidity. Belarus has a generally flat terrain with many forests, lakes, and marshes. There are hundreds of rivers and lakes in the country, the largest of which are the river Dnieper and Lake Naroch. About one-third of the country is covered with forests, mostly coniferous and birch. There is a rich variety of wildlife, including such rare animals as the European bison in the primal forest reserve of Byelovezhskaya Pushcha.

Belarus was long thought to be poor in minerals, its natural resources limited to peat, gravel, sands, and clays. Recent surveys, however, have uncovered major deposits of coal, oil, and potassium salts.

Belarus has a well-developed economy. Manufacturing contributes most of the country's industrial output. The most important manufactured products are tractors, transport vehicles, trucks, agricultural machinery, metal-cutting machines, as well as consumer goods such as motorcycles and bicycles, clocks and watches, refrigerators, television sets, and others.

Agriculture accounts for about a fourth of Belarus' economic output. The principal crops are potatoes, barley, rye, flax and sugar beet. Nearly 60 percent of the country's total land area is cultivated. Livestock (cattle, hogs, sheep, and goats) accounts for more than half the value of agricultural output in Belarus.

Belarus exports transport equipment, machinery, chemicals, and foodstuff. The major Belarusian exports include tractors to Australia, Canada, New Zealand, and the United States. Imports include fuel, natural gas, industrial raw materials, textiles, and sugar. Fuel is Belarus' largest import expenditure. Russia, which supplies most of the country's fuel imports, is the most important trading partner. Belarus also conducts trade with the Ukraine, Germany, Poland, Lithuania and other countries.

Belarus has an extensive transportation system, including railroad and highway networks connecting its cities with other major European cities. The major railroad, which was built in the 1860s'to connect Moscow and Warsaw, runs through Belarus via Minsk and Brest. The best-quality road in Belarus is that which links Moscow with Warsaw. Buses provide most of the transportation within cities.

Belarus has several international airports, the largest of which is located about 50 km east of Minsk: The airport in Minsk serves airlines from Germany, Austria, Poland, Scandinavia, and other countries.

The Dnieper-Bug Canal and other canals improve water transportation by linking many of the rivers with ports on the Baltic and Black seas.

In 1945, Belarus became a founding member of the United Nations. Now Belarus is a member of over 60 international organizations, most notably the United Nations, the United Nations Educational, Scientific, and Cultural Organization (UNESCO), and the World Health Organization. In 1992 Belarus became a member of the International Bank for Reconstruction and Development, the International Monetary Fund, and the European Bank for Reconstruction and Development.

Belarus is a presidential republic. Under the constitution the president is the head of the state of Belarus and directs domestic and foreign policy. The president creates the Council of Ministers, whose chairman is the country's prime minister. The legislature is a bicameral National Assembly. The judicial system of Belarus consists of three high courts:

the Supreme Court, the Supreme Economic Court, and the Constitutional Court. The latter court is charged with protecting the constitution, and its decisions are not subjected to appeal. It has the power to review the constitutionality of presidential edicts and the regulatory decisions of the other two high courts.

The name Belarus is derived from the words Belaya Rus' (White Russia). The Belarusians trace their history to Kievan Rus, a state founded by East Slavs in the 800's, Belarus made up the northwestern part of Kievan Rus. Belarus became part of Lithuania in the 1300's. It passed to Poland in the 1500's and to Russia in the late 1700's

Belarus as a sovereign state was established in 1919. In 1922 the Belarusian Soviet Socialist Republic became one of the four founding republics of the Union of Soviet Socialist Republics. In August 1991 Belarus declared its independence.

Nazi Germany occupied Belarus from 1941 to 1944, during World War II. By the summer of 1942 the republic became the location of an extensive partisan movement, which played a major role in undermining the Nazi regime. In 1944 the Soviet Red Army drove out Nazi forces.

As a principal theatre of World War II, Belarus suffered enormous devastation and lost one quarter of its population. Minsk was almost entirely destroyed.

Postwar reconstruction was followed by a period of considerable economic development and rapid industrialization. In the postwar years, Belarus became the major center for the production of tractors and automobiles and an important base for chemicals and other products.Concurrently, the postwar years were marked by rapid urbanization. Minsk developed as the major center of economic, cultural, and political life and the largest urban center with a quarter of the republic's urban residents.

**III: Find one synonym to the first word in each row.**

1. Rare – unusual – rapid – total

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2. Connect – promote – state – join

---

3. Serve – receive – work for – cover

---

4. Rapid – rely – quick – quality

---

5. Notably – nearly – remarkably – domestic

---

**IV. Complete the following sentences.**

- Belarus is a country in_____
- The total area of Belarus is _____
- Belarus is divided administratively into _____
- Belarus has a _____
- Belarus has a _____
- Belarus was long thought to be _____
- The most important manufacture products are _____
- Belarus exports _____
- In 1945, Belarus became _____
- Belarus is a _____

Possible answers: eastern Europe; six provinces or oblasts; 207 600 sq. km.; temperate continental climate; poor in minerals; well-developed economy; machinery, foodstuff; machinery, transport equipment; tractors, trucks, agricultural machinery; a founding member of the U.N.; presidential republic.

**V. Insert the missed parts of the sentences**

- Belarus became _____ of the U.N.
- Under the constitution the president is _____ of the state.
- Belarus as _____ was established in 1919.
- Nazi Germany occupied Belarus _____ during World War II
- By the summer of 1942 the republic became _____ of an extensive partisan movement.
- In 1944 the Soviet Union Red Army _____ Nazi Forces.
- Postwar reconstruction _____ by a period of considerable economic development.
- In the postwar years, Belarus became _____ for the production of tractors and automobiles.
- The postwar years _____ by rapid urbanization.
- Minsk developed as _____ of economic, cultural and political life.

Possible answers: the head; a founding member; the location; a sovereign state; from 1941 to 1944; drove out; was followed; the major centre; were marked; the major centre.

**VI. Answer the following questions:**

- Where is the Republic of Belarus situated?
- What is the territory of the Republic?
- How is Belarus divided administratively?
- What is the population of the country?
- What is the climate of Belarus?
- What can you say about the natural resources in the Republic?
- Is the economy of Belarus well-developed?
- What can you say about agriculture?
- Belarus exports various goods, doesn't it?
- Is the transportation system in Belarus extensive?
- What international organizations does Belarus participate in?
- What can you say about the Republic's state system?
- What is the history of our country?
- Did Belarus suffer enormous devastation during World War II?
- Postwar reconstruction was followed by a period of considerable economic development, wasn't it?

**VII. Discuss the following points of the text in the form of a dialogue. Use all types of questions.**

Example:

- Is the total area of Belarus 207,600 sq km?
- What countries does Belarus border with?
- Is Belarus divided into six or four provinces?

- Who promoted the use of the Belarusian language in literature?
- About one-third of the country is covered with forests, isn't it?
- The geographical position of Belarus.
- The nature and resources of the republic.
- Agriculture and industry.
- Export and transportation system.
- The postwar period.

**VIII. What do you think the authors meant by the following statements? Do you agree or disagree? Give reasons to support your opinion.**

A man should know something of his own country, too, before he goes abroad (Laurence Terne, Irish-born British writer).

Ask not what your country can do for you - ask what you can do for your country (John Fitzgerald Kennedy, US statesman, thirty-fifth President of the USA).

It is a sweet and seemly thing to die for one's country (Horace, Roman poet).

**IX. Speak about Belarus with your groupmate in the form of a dialogue.**

## MY NATIVE CITY BREST. BREST: REGIONAL CENTRE

**I. Before you read the text, talk about these questions.**

Why is Brest so popular among tourists today? How is this fact connected with the geographical position?

Brest played an important role in the history of Belarus, didn't it? Explain your answer.

**II. Read the following words from the text below and learn their meaning.**

| | | |
|---|---|---|
| 1) | greenbelt | зелёный пояс |
| 2) | highway | магистраль |
| 3) | bark | кора |
| 4) | elm | вяз |
| 5) | ford | брод, поток |
| 6) | bog | трясина, болото |
| 7) | rescue | спасение |
| 8) | birch-bark | береста |
| 9) | cape | мыс |
| 10) | to facilitate | способствовать |
| 11) | autonomous | автономный, самоуправляющийся |
| 12) | to annex | присоединять, аннексировать |
| 13) | to consolidate (with) | объединять (с) |
| 14) | enterprise | предприятие |
| 15) | management | управление |
| 16) | implementation | реализация |
| 17) | advantageous | выгодный |
| 18) | location | расположение |
| 19) | durable | прочный, длительный |
| 20) | consulate | консульство |

**III. Match the words in the box with definitions 1-12.**

| | | | |
|---|---|---|---|
| *advantageous* | *ancient* | *highway* | *to annex* |
| *merchant* | *facilitate* | *qualitative* | *cooperation* |
| *foodstuff* | *innovative* | *valid* | *enterprise* |

1) using new methods or ideas
2) a public road, especially an important road that joints cities or towns together
3) helping to make more successful
4) to take possession of an area of a country, usually by force or without permission
5) relating to how good or bad something is
6) very old, having lasted for a very long time
7) a person whose job is to buy and sell products, especially by trading with other countries
8) an organization (a business) that will earn money
9) to make something possible or easier
10) the process of working together to achieve something
11) based on truth or reason, able to be accepted
12) a substance that is used as food or to make food

**IV. Read the text. Use the dictionary to look up unfamiliar words.**

BREST: REGIONAL CENTRE

Brest surrounded by a large greenbelt is situated in the south-west of the Republic of Belarus, neighboring with Poland and Ukraine. Its territory covers 72.9 square kilometers, about 326 thousand people live there. Being situated on the main Berlin-Moscow railway line and international highway, Brest became a principle border crossing since World War II. Today it links the European Union and the Commonwealth of Independent states.

There are several theories of the city name origin. The most common are as follows. The name of the city comes from: a) the Slavic root "beresta" meaning birch bark, b) the Slavic root "berest" meaning elm, c) the Lithuanian word "brasta" meaning ford.

Different legends exist about the foundation of Brest. According to one of them a Russian merchant who travelled with his caravan in the west, had become stuck in the bog. He covered the way for himself with branches of birch-trees and managed to reach the river bank. Grateful for his wonderful rescue he built a chapel in this place. Later people settled here and called their settlement Berestye from the word "beresta" meaning birch-bark.

In the 11th century Berestye was an ancient Russian trade centre and a fortress, which was situated on the cape formed by the Western Bug River and by the left branch of the river Mukhavets. The development of the city foundation was facilitated by its favourable location on the border with Polish and Lithuanian lands. In the 14-16th centuries Berestye was one of the largest cities in the Great Duchy of Lithuania. In 1390 Berestye was among the first Belarusian cities given the right of autonomous administration under the Magdeburg Law. In 1553 the head of Berestye, Radzivil Chorny, founded the first printing house in Belarus.

During the years of World War I Brest-Litovsk was occupied by German Troops. On March 3, 1918 the Treaty of Brest was signed in the White Palace. Beginning from 1921 Brest-Litovsk, being a part of Western Belarus, was annexed by Poland almost for 20 years. On September 22, 1939 the western part of Belarus was consolidated with the BSSR and Brest became the centre of the region. According to the agreement of the Yalta Conference of February 1945, Brest's status as part of the Belarusian Soviet Socialist Republic was officially recognized. Now it is part of the independent country of Belarus.

Brest today is one of the largest economic and cultural centers of the republic. There are industrial enterprises in the city. Among them we can mention the Electric Test Equipment Plant, The Electric Bulb Plant, the Chemical Goods Plants, and the Knitted-Wear Factory, Joint Venture "Brestgazoapparat" etc. Our enterprises produce electric and gas stoves, furniture, carpets, knitted-wear clothes, foodstuff.

In 1996, at the start of qualitative economic transformations, the first Free Economic Zone was established in the Republic of Belarus. The "Brest" FEZ has become a territory of new possibilities for innovative forms of business management and implementation of promising investment projects with foreign capital.

There is a variety of valid reasons why Brest was specifically chosen as the first place for innovative activities, namely: advantageous geographical location on the EU border, easier access to the CIS/EU markets, close location to automobile, railway, river and air communication routes, availability of production areas with well-developed transportation infrastructure and, last but not least, people with high level of education, professional skills, creative initiative.

The educational system comprises 77 nursery schools, 35 secondary schools, 6 gymnasiums, and 2 lyceums. Young people study at vocational and training schools, at Brest State Pushkin University and Brest State Technical University.

The system of public health includes 28 medical centers. Sport plays a very important role in the city's life. Children attend sports schools for teenagers. There are several sports centers, the Ice Palace, the Rowing Canal, the Sports Manege, the Palace of Water Sports, stadiums, indoor swimming pools and outdoor sports facilities.

The location of the city at the crossroads of the whole Eurasian continent is a good basis for progress in all spheres of life and for the development of durable and perspective international relations. The Russian Federation, Ukraine and the Republic of Poland consulates, which are located in Brest, actually promote cooperation between the people of the countries.

**V. Find equivalents to the following Russian word combinations in the text.**

международная автомагистраль
пункт пересечения границы
выгодное расположение
право автономного управления
независимая страна
промышленные предприятия
качественные экономические преобразования
перспективные инвестиционные проекты
выгодное географическое положение
хорошая основа для прогресса

**VI. Match the words to form word combinations. Make affirmative or negative sentences with each word combination.**

| | |
|---|---|
| build | initiative |
| trade | activities |
| printing | continent |
| industrial | enterprises |
| foreign | relations |
| business | management |

| | |
|---|---|
| innovative | centre |
| creative | a chapel |
| Eurasian | capital |
| international | house |

**VII. Complete the sentences with appropriate words or phrases from the box.**

| | | | |
|---|---|---|---|
| *autonomous* | *implementation* | *enterprises* | *investment* |
| *advantageous* | *highway* | *basis* | *public health* |
| *activities* | *high education* | *consulates* | *transformations* |

1) Brest is situated on the main Berlin-Moscow railway line and international _____ .

2) Berestye was among the first Belarusian cities given the right of _____ administration under the Magdeburg Law.

3) Nowadays there are several industrial _____ in the city.

4) The first Free Economic Zone "Brest" is associated with the start of qualitative economic _____ .

5) The "Brest" FEZ has become a territory of _____ of promising _____ projects with foreign capital.

6) Brest has an _____ geographical location on the EU border.

7) A great number of innovative _____ are realized in Brest.

8) The system of _____ in Brest comprises two universities.

9) The system of _____ includes 28 medical centres.

10) The location of the city is a good _____ for progress in all spheres of life.

11) The Russian Federation, Ukraine and the Republic of Poland have their _____ in Brest.

**VIII. In the sentences below fill in the appropriate part of speech derived from the word on the right.**

| | |
|---|---|
| 1) There are different legends about the _____ of Brest. | FOUND |
| 2) People called their _____ Berestye from the word "beresta". | SETTLE |
| 3) The _____ location of the city facilitated economic development. | FAVOUR |
| 4) Finally the countries reached an _____ . | AGREE |
| 5) Brest is part of the _____ country of Belarus. | DEPEND |
| 6) The "Brest" FEZ is a territory of great _____. | POSSIBLE |
| 7) There is very little _____ between the tho countries. | OPERATE |
| 8) Great _____ changes have taken place in the economy of the country. | QUALITY |
| 9) The company has suffered from bad _____. | MANAGE |
| 10) The best thing about the _____ of the city is its proximity to the border crossing. | LOCATE |

**IX. Read the text again and answer the following questions.**

1) What advantages can you find in the geographical location of Brest?

2) What are the theories of the city name origin?

3) How many legends do you know about the foundation of Brest? Say a few words about one of them.

4) When did Brest get the right of autonomous administration? How do you understand the meaning of this privilege?

5) When was the first printing house founded in Belarus?

6) What industrial enterprises in Brest are mentioned in the text? Add to the list.

7) What are the aims of the "Brest" FEZ?

8) What are the reasons for the successful economic development of our city?

9) What educational establishments are there in Brest?

10) What sports facilities are available to our citizens?

**X. Read the text. Make a short summary.**

Places of Interest in Brest

**The Brest Fortress** over the Bug has become a symbol of the eternal glory of the Soviet Soldiers. It was founded on June 1, 1836. The Citadel is the main fortification of the fortress. It is not merely a remarkable military construction; it is an interesting architectural complex.

The Brest Fortress got universal fame during the Great Patriotic War because it took the first blow for itself. The courage of the soldiers of the fortress will always be in the memory of our descendants. At the dawn June 22, 1941(Sunday), Hitler Germany launched its perfidious attack against the Soviet Union without declaring war. Hitler had counted on the "Blitzkrieg": he expected to rout the Soviet Army Forces in a short period of time.

The garrison of the Brest Fortress had to fight under unbelievably hard conditions. The small fortress area of just four square kilometers was steadily shelled by hundreds of guns while planes with swastika on their wings showered it with bombs. The garrison was short of ammunition, medical supplies and food. They were cut off from the water, which had to be fetched under enemy fire.

The defense lasted for over a month. The fortress walls were tumbling down, the bricks melted and the very earth was scorched, but the fortress stood undaunted. The Nazi command was outraged. The Hitler forces mounted one attack after another, sustaining heavy losses, but they were powerless to crush the fighting spirit of the fortress defenders.

The Brest Fortress became one of the sacred monuments of the Soviet people, a symbol of its heroism and endurance, a living example of patriotism. The memorial complex "Brest Hero-Fortress" erected on the site is a tribute commemorating the immortal exploit of its garrison. Today the Brest Fortress is the major tourist sight.

**Brest Millennium Monument** (2009) - was designed by the Belarusian architect Alexei Andreyuk and sculptor Alexei Pavluchuk to commemorate the millennium of Brest, Belarus. It was erected in 2009 at the intersection of Sovietskaya Street and Gogol Street in Brest. The project was financed by the state budget and public donations.

The monument presents a group of bronze statues. The angel of mercy with a cross is standing at the top of a granite column. 3 statues remember the remarkable historic personalities that are associated with Brest: Vladimir Vasilkovich, who put up a tower in the castle of the town in the 13th century, Vytautas the grand duke of Grand Duchy of Lithuania, Mikołaj "the Black" Radziwiłł in whose printing shop the first Belarusian book was printed, 3 more statues represent abstract images: warrior, mother, chronicler (who wrote apparently the Primary Chronicle). The total height is 15.1 m, the height of the angel is 3.8 m, the height of the 6 statues is 3m. the diameter of the base is 8.6 m. In April 2011 a belt of high reliefs appeared around the monument. It depicts history-making episodes of Brest.

Unique **Belovezhskaya Pushcha** lies about 70 km from Brest, less than 1.5 hours

off by road. The word Pushcha means in Belarusian a forest, but not any forest can be called pushcha, because it implies a virgin forest. That is the only virgin forest, which survived in Central Europe. Pushcha is the largest wildlife reserve in the south west of Belarus.

Incomparable beauty, rich wildlife world, interesting history of Pushcha attract tourists from all over the world. 55 species of mammals, 214 species of birds, 11 amphibious species, 7 species of reptiles, nearly 30 species of fish live in this unique reserve. The king of Pushcha is the East European aurochs, the biggest animal in Europe. Pushcha is rich in deer, roes, elks, wild boars, otters and beavers.

The museum of Pushcha offers a rich display that includes common species of wildlife. Tourists can see some animals in spacious enclosures. Pushcha is a vast open-air laboratory for survey of wildlife world. Visiting the Brest region, you should necessarily see Belovezhskaya Pushcha to admire the majestic beauty of this virgin forest.

There are some other places to visit or to see in our town: a lot of museums, two theatres, several cinemas, parks and other places where you can have a good time. Brest City Park is 100 years old, but it looks quite new after the recent reconstruction.

Other architectural landmarks of the city are:

– St. Nicolas' Orthodox Cathedral (1903),
– St. Simeon's Orthodox Cathedral (1865),
– Resurrection Orthodox Cathedral (1995),
– St. Nicolas' Garrison Orthodox Cathedral (1856),
– Cross Exaltation Roman-Catholic Church (1856),
– Brest Central Railway Station (1886),
– Soviet Street.

## PLACES TO VISIT IN BREST

**I. Read the text. Make a short summary.**

**The Brest Fortress** over the Bug has become a symbol of the eternal glory of the Soviet Soldiers. It was founded on June 1, 1836. The Citadel is the main fortification of the fortress. It is not merely a remarkable military construction; it is an interesting architectural complex.

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plex “Brest Hero-Fortress” erected on the site is a tribute commemorating the immortal exploit of its garrison. Today the Brest Fortress is the major tourist sight.

**Brest Millennium Monument** (2009) – was designed by the Belarusian architect Alexei Andreyuk and sculptor Alexei Pavluchuk to commemorate the millennium of Brest, Belarus. It was erected in 2009 at the intersection of Sovietskaya Street and Gogol Street in Brest. The project was financed by the state budget and public donations.

The monument presents a group of bronze statues. The angel of mercy with a cross is standing at the top of a granite column. 3 statues remember the remarkable historic personalities that are associated with Brest: Vladimir Vasilkovich, who put up a tower in the castle of the town in the 13th century, Vytautas the grand duke of Grand Duchy of Lithuania, Mikolaj "the Black" Radziwill in whose printing shop the first Belarusian book was printed, 3 more statues represent abstract images: warrior, mother, chronicler (who wrote apparently the Primary Chronicle). The total height is 15.1 m, the height of the angel is 3.8 m, the height of the 6 statues is 3m. the diameter of the base is 8.6 m. In April 2011 a belt of high reliefs appeared around the monument. It depicts history-making episodes of Brest

Unique **Belovezhskaya Pushcha** lies about 70 km from Brest, less than 1.5 hours off by road. The word Pushcha means in Belarusian a forest, but not any forest can be called pushcha, because it implies a virgin forest. That is the only virgin forest, which survived in Central Europe. Pushcha is the largest wildlife reserve in the south west of Belarus.

Incomparable beauty, rich wildlife world, interesting history of Pushcha attract tourists from all over the world. 55 species of mammals, 214 species of birds, 11 amphibious species, 7 species of reptiles, nearly 30 species of fish live in this unique reserve. The king of Pushcha is the East European aurochs, the biggest animal in Europe. Pushcha is rich in deer, roes, elks, wild boars, otters and beavers.

The museum of Pushcha offers a rich display that includes common species of wildlife. Tourists can see some animals in spacious enclosures. Pushcha is a vast open-air laboratory for survey of wildlife world. Visiting the Brest region, you should necessarily see Belovezhskaya Pushcha to admire the majestic beauty of this virgin forest.

There are some other places to visit or to see in our town: a lot of museums, two theatres, several cinemas, parks and other places where you can have a good time. Brest City Park is 100 years old, but it looks quite new after the recent reconstruction.

Other architectural landmarks of the city are:

– St. Nicolas’ Orthodox Cathedral (1903),
– St. Simeon’s Orthodox Cathedral (1865),
– Resurrection Orthodox Cathedral (1995),
– St. Nicolas’ Garrison Orthodox Cathedral (1856),
– Cross Exaltation Roman-Catholic Church (1856),
– Brest Central Railway Station (1886),
– Soviet Street.

## 1.4. THE SOCIO-POLITICAL PORTRAIT OF THE UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

### GREAT BRITAIN

**I. What are the first three things which come into your mind when you hear the words 'Britain' or 'the British? Continue the phrase:**

*When I think of the British, I think about ….*

The following prompts are likely to help you: *bad weather, the royal family, corgi, pubs, cricket, double-decker buses, Shakespeare, Big Ben.*

**II. Read the following words and learn their meaning.**

| | | |
|---|---|---|
| 1) | to refer | обращаться, ссылаться |
| 2) | to comprise | включать, содержать |
| 3) | island | остров |
| 4) | to occupy | занимать |
| 5) | to influence | оказывать влияние |
| 6) | current | течение |
| 7) | infrequent | нечастый |
| 8) | monarchy | монархия |
| 9) | legislation | законодательство |
| 10) | institution | учреждение |
| 11) | issue | вопрос, проблема |
| 12 | to represent | представлять |
| 13) | chamber | палата |
| 14) | majority | большинство |
| 15) | support | поддержка |
| 16) | to appoint | назначать |
| 17) | mining | горная промышленность |
| 18) | construction | строительство |
| 19) | abundant | богатый, изобилующий |
| 20) | beverage | напиток |
| 21) | insurance | страхование |
| 22) | stockbroking | биржевое маклерство |
| 23) | consultancy | консалтинг |
| 24) | livestock | домашний скот |
| 25) | poultry | домашняя птица |
| 26) | to damage | наносить ущерб |

**III. Match the words in the box with definitions 1-12.**

| | | | |
|---|---|---|---|
| *to appoint* | *issue* | *construction* | *support* |
| *island* | *stockbroking* | *to comprise* | *current* |
| *to damage* | *mining* | *to influence* | *abundant* |

1) existing in large quantities
2) an important subject or problem that people are discussing
3) an area of land that has water around it
4) to officially choose someone for a job
5) to harm or break something
6) the natural flow of air or water in one direction
7) agreement with an idea, group, or person
8) the industry or activity of removing coal and other substances from the earth
9) to consist of particular parts or members
10) the work of building or making something, especially buildings, bridges, etc.
11) to have an effect on people or things
12) the job or activity of buying and selling stocks and shares for other people

**IV. Read the text. Use the dictionary to look up unfamiliar words.**

GREAT BRITAIN

How much do you know about the United Kingdom? The first thing that comes to one's mind is the weather. It is boring, isn't it? British people don't like it because of its changeability. This feature makes it distinct from the rest of the world. But there are still many interesting facts that make the UK a unique country.

There is an important thing we should know about the UK. Officially the country's name is the United Kingdom of Great Britain and Northern Ireland, but sometimes the name Britain is used to **refer** to the United Kingdom as a whole. The United Kingdom **comprises** four geographical and political parts: England, Scotland, Wales and Northern Ireland. London is the capital and the largest city of the country. It is among the world's leading commercial, financial and cultural centres. Other major cities include Birmingham, Liverpool, Manchester, Belfast, Leeds and others.

The territory of the country is surrounded by water, having only one land border with Ireland. The United Kingdom is separated from the continent by the English Channel. The country occupies an area of over 242,000 sq km and has a population of over 67 million (2019). The United Kingdom covers most of the British Isles, a collection of over 6,000 **islands** of which Great Britain is the largest. England, Scotland and Wales **occupy** the island of Great Britain. Northern Ireland occupies the north-eastern part of the island of Ireland.

The main factor **influencing** the weather of the British Isles is their position close to the ocean. It means that the UK receives a large amount of rain. On the whole the country has a temperate climate with generally cool temperatures and plentiful rainfall all year round. Atlantic **currents** warmed by the Gulf stream bring mild winters, and British summers are cooler than those on the continent. In general the weather in the UK is often cloudy and rainy, and high temperatures are **infrequent**. In addition the weather conditions are extremely changeable. The English sometimes say you can't plan your day because every moment it can start to rain.

The United Kingdom is a constitutional **monarchy** and parliamentary democracy. The current monarch and the head of the state is Queen Elizabeth II. The monarch undertake various official and representational duties. At the same time the government runs the country. The head of the government is the prime minister (PM) who is the leader of the majority political party. The British Constitution is not based on a single document, it is only partly written and is flexible. Its basic sources are parliamentary **legislation** and law decisions. That's why the country is often said to have an unwritten constitution.

The British Parliament often referred to as the "Mother of Parliaments" is one of the oldest legislatures in the world. It consists of the monarch, the House of Commons and the House of Lords. Parliament is the legislative body of the United Kingdom and the primary lawmaking **institution**.

The work of the two houses of Parliament is similar: making laws, checking the work of the government, discussing the current **issues**. Nevertheless the House of Commons often called simply the Commons is more powerful as it decides which laws will be discussed and passed. The House of Commons is publicly elected from the four political divisions that make up the United Kingdom. The UK voters elect 650 Members of Parliament (MPs) to **represent** their interests in the House of Commons.

The House of Lords often called the Lords is the second **chamber** in the UK Parliament. It is made up of around 800 members. They are not elected. The role of the Lords is generally recognized to be complementary to that of the Commons.

The two main political parties in the United Kingdom are the Conservative Party and the Labour Party. Since 1945 eight general elections have been won by the Conservative party and six by the Labour Party; the great **majority** of the members of the House of Commons have belonged to one of these parties. The Conservative Party developed from the old Tory Party which began in the late 1600's. The Labour Party began in 1900. Much of its support comes from trade unions.

The Liberal Party is the third significant party, but it has never received enough **support** to form the national government. It is much smaller than either the Conservative or the Labour Party.

The party which wins most seats at a general election usually forms the government. The Prime Minister is usually the leader of this party. The Queen **appoints** the Prime Minister after each general election. As the head of the Government, the prime minister selects the Cabinet, choosing its members from among those in Parliament who generally agree with his intended policies. The largest minority party becomes the official Opposition with its own leader and the "Shadow Cabinet". The leader of the Opposition is elected by his or her fellow party members.

Major segments of the British industry include energy, **mining**, manufacturing and **construction**. One of the strongest components of the British industry is the energy sector. The United Kingdom is a net exporter of energy. In addition to oil, the Kingdom has **abundant** reserves of natural gas, coal, and atomic power. Most of the kingdom's energy resources are concentrated in the North Sea.

The UK has a strong manufacturing tradition that goes back to the origins of the Industrial Revolution. In the XIX century the UK was a world leader in producing key materials associated with the Industrial Revolution: coal, steel, textiles, steam engines and ships. The most important manufactured products today are machinery, fuels, chemicals, food, **beverages**, tobacco. The UK is also the major supplier of vehicles, aerospace products, electrical and electronic equipment. The country is responsible for 10 % of the world's export of services, including banking, **insurance**, **stockbroking**, **consultancy** and computer programming. The main export partners are The USA, Germany, France, Ireland, the Netherlands, Belgium and Spain.

Agriculture in The UK is today intensive, highly mechanized and efficient, producing about 60 % of food needs with only 2 % of the labour force. Around two thirds of production is devoted to **livestock**, one third to arable crops. The livestock products include **poultry**, cattle and sheep, milk, meat, eggs and wool. Farmers grow wheat, barley, oats, potatoes, oilseed rape and sugar beets. British farming corresponds to the world's tendencies in agriculture: farmers have to adopt more environmentally friendly methods such as organic farming. It does not use artificial chemicals that can **damage** the environment and human health. There are several types of farming practiced in the UK: arable farming (growing of crops and cereals), pastoral farming (rearing and production of animals) and mixed farming (the combination of arable and pastoral farming). There is also market gardening which is the production of fruits and vegetables.

The United Kingdom of Great Britain and Northern Ireland is one of the most powerful nations and strongest economies in the world. It occurred to be among the world's first industrialized countries.

**V. Fill in the table below.**

| | |
|---|---|
| Official name | *The United Kingdom of Great Britain and Northern Ireland* |
| Capital | |

| | |
|---|---|
| Major cities | |
| Area | |
| Population | |
| Political divisions | |
| Climate | |
| System of government | |
| Segments of industry | |
| Agricultural products | |
| International partners | |

**VI. Find equivalents to the following Russian word combinations in the text.**

a) уникальная страна
b) сухопутная граница
c) расположение недалеко от океана
d) с обильными осадками круглый год
e) чрезвычайно изменчивы
f) нынешний монарх
g) выполнять различные официальные и представительские обязанности
h) законодательный орган
i) обсуждение текущих вопросов
j) товарищи по партии
k) богатые запасы природного газа, угля и атомной энергии
l) электрическое и электронное оборудование
m) экспорт услуг
n) высокомеханизированный
o) экологически чистые методы

**VII. Match the words to form word combinations. Find Russian equivalents to them.**

| | |
|---|---|
| environmentally | country |
| interesting | force |
| Atlantic | programming |
| making | changeable |
| temperate | sector |
| mixed | rainfall |
| industrialized | friendly |
| energy | climate |
| financial | laws |
| computer | current |
| plentiful | farming |
| intended | policy |
| weather | fact |
| extremely | centre |
| labour | conditions |

**VIII. In the sentences below fill in the appropriate part of speech derived from the word on the right.**

| | |
|---|---|
| 1) The weather in the UK is _____, isn't it? | BORE |

| | |
|---|---|
| 2) The United Kingdom consists of four _____ divisions. | POLICY |
| 3) The British Isles is a _____ of over 6,000 islands. | COLLECT |
| 4) High temperatures are _____ in the UK. | FREQUENT |
| 5) The weather on the islands is extremely _____. | CHANGE |
| 6) The British Constitution is based both on a parliamentary legislation and law _____. | DECIDE |
| 7) The two houses of Parliament check the work of the _____. | GOVERN |
| 8) The House of Commons is more _____. | POWER |
| 9) Employees join a trade_____in order to have their interests and goals better represented. | UNITE |
| 10) In _____, the Kingdom has reserves of natural gas and coal. | ADD |
| 11) The UK is one of the main _____ of aerospace products. | SUPPLY |
| 12) The UK occurred to be among the world's first_____ countries. | INDUSTRY |
| 13) Mixed farming is the _____ of arable and pastoral farming. | COMBINE |
| 14)Market gardening is the _____ of fruits and vegetables. | PRODUCE |

**IX. Read the text again and answer the following questions.**

1) What is the official name of Great Britain?
2) What are the four geographical and political parts of the UK?
3) What are the largest cities of the country?
4) How does the geographical position influence the weather of the British Isles?
5) Why is the UK often said to have an unwritten constitution?
6) Who is the political leader of the country?
7) Who is the official head of the state?
8) What are the functions of the Houses of Parliament?
9) What are the main political parties in the United Kingdom?
10) What are the major segments of the British industry?
11) What are the most important manufactured products in the UK?
12) What services does the country export nowadays?
13) Which types of farming are practiced in the UK?
14) What does the term 'organic farming' mean?

**X. Make a plan of the text: put the information below in the right order as it is given in the text. Discuss each point of the plan.**

1) Industry
2) Geographical position and population
3) Parliament and political parties
4) Agriculture
5) Political system
6) Official name
7) Climate

# THE ENGLISH CHARACTER

**I. Read and translate the text.**

Customs and traditions always reflect the character of the nation. It is a common knowledge that every nation has a reputation of this or that kind. Here are some views on the British character or the character of the people who live on the British Isles.

The British people are said to be very polite and well-mannered. "Please, thank you and Excuse me" are used very often in Britain. They are rather conservative and reserved. They are considered to be the world's tea drinkers.

Newspapers and TV form our opinion about different countries. So, what do you imagine when you think of Britain and its people?

What are the British like?

- friendly and polite
- conservative and well-mannered
- cold and reserved

People who live in Britain are called British. Many people think that 'English' is the same as 'British'. But England is only one of the four nations in the UK. The Scots, Welsh and Northern Irish are British too. They sometimes get angry when they are called 'English'.

There are also millions of British people whose parents first came to Britain in the 1950s and 1960s from the Caribbean, India, Pakistan, Hong Kong and other places. Their homes are mainly in the big English cities like London, Birmingham and Manchester.

Foreigners have many ideas what the English are like. For example, many people say that they are cold and reserved, friendly and well-mannered. You hardly find a person in England who dislikes tea drinking, home cooking and gardening. Their sense of humour is known all over the world.

As for other characteristics which are associated with the English, they are egoism, self-confidence, intolerance of outsiders, independence, love of comfort and a strong belief in private property. Moderation, the avoidance of extremes, the choice of middle way is among the essential qualities of the English.

The English have a strong sense of individualism which can be explained by the uniqueness of the British which was isolated from the European continent for a long time.

One thing never fails to confuse foreigners when they come to Britain and it is British meals. The English are used to certain food and seem never get tired of it. The legendary English breakfast is a hearty meal and a perfect start to a hard working day. This favourite meal consists of bacon, eggs, tomato, fried bread and a variety of sausages. It is usually finished off with slices of toast spread with orange marmalade and a cup of tea with milk (which is traditionally called English tea) or lemon.

The English are very fond of tea. They drink tea four or five times a day, but afternoon tea (which is usually taken at 4 or 5 p.m.) is a special treat.

Dinner is usually at 7 o'clock. It is the most substantial meal of the day and is a very formal one. Many people even wear special clothes for dinner.

The English are said to be a nation of stay-at-homes. Their famous saying "There is no place like home" is known all over the world. When the Englishman is free, he likes to be at home with the company of his wife and children. There is another saying which is typical for the English – "The Englishman's house is his castle."

Undoubtedly, the English are rather conservative. They are proud of their customs and are reluctant to change them in a way. Examples of the English conservatism, such as

eating traditional English food or reading a newspaper in the morning are well-known worldwide. On a large scale their conservatism is expressed through the attitude to the monarchy, for an example. The local conservatism can be easily noticed in private traditions observed at schools and societies. So, Britain is the country of traditions and they make a nation special.

Such are the English as we see them.

Englishmen are also known for their devotion to animals and pets. The English firmly believe themselves to be the only nation on the Earth that is really kind to its animals. Contrary to the English, the Scotts, the Welsh and the Irish are somewhat different.

The Scotts are rather kind, but at first glance not as friendly as the English perhaps. They like extremes. Sometimes, they seem to be gloomy and grey, whereas quite often they are highly coloured and extravagant. The Scotts are probably best known to the world for their traditional costume, the kilt, the short skirt worn by men. It has been the dress of Highlanders since old-times and has been very suitable for going through the wet, moorland country.

Wales is the place where national spirit and national pride are more intense than in any other part of the UK. The Welsh eagerly wear their national dress on festival occasions. The Welsh language is still preserved and taught in schools side by side with English. The Welsh are known for their highly developed artistic sense, as well as a distinguished record in the realm of poetry, singing and drama.

In the Northern Ireland the pace of life is slightly different from the whole of the country. Everything moves slowly, and people are usually not much in a hurry. Most of the Irish are considered to be hard-headed, business-like, self-conscious and very superstitious. Another national feature is that they are desperately afraid of being laughed at.

It is may seem difficult to tell an Englishman from an Irishman or a Scottish person and in this case a surname may help. If their surnames start with‘Mac’ or ‘Mc’ (for example, McDonald), this person is sure to come from Scotland or Ireland. The surnames that start with ‘O’ (for example, O’Brien) are always Irish.

**II. Sometimes GB is called a strange island because some customs and manners differ from those accepted in other countries.**

Choose what is usual for Britain.

- to queue in a line waiting for a bus
- to greet a friend as many times as you meet him during a day
- to shake hands each time you meet your friends
- to take off shoes as soon as you enter someone’s home
- to keep a distance talking to a person (to stay at least an arm’s length away)
- to jump the queue waiting for a bus
- to bump into another person

**III. There are some stereotypes about national characters. Translate the sentences into Russian. Use Complex Subject.**

- The Irish are said to be great talkers.
- The Scots are thought to be careful with money.
- The English are considered to be great tea-drinkers.
- The Russians are believed to be lazy.

Which of the statements are stereotypes?

**IV. Make up sentences about the manners in your country. Use the sentences and the example.**

- Take off your shoes entering someone's home.
- Make way for a girl or older people.
- Give up your seat in favour of older people or other people who need it.
- Say "Good appetite" to people that are having a meal.
- Greet your friends each time you meet them during the day.
- Jump the queue waiting for a service.

**V. Some older people think that today young people are bad-mannered. What makes them think so? What rules do the young people sometimes break? What manners do you consider to be good or bad? Do you always follow these "rules of good behavior"?**

**VI.Can you explain the proverb "When in Rome do as Romans do"? Give the equivalent of the proverb in your language.**

## WHAT I KNOW OF THE COUNTRY THE LANGUAGE OF WHICH I STUDY

**I. Pronounce the following words correctly and learn their meaning:**

1.refer [r'ɪfə:] –относиться, иметь отношение
2.occupy ['ɔkjupaɪ] –занимать
3.influence ['ɪnfluəns] –влияние, влиять
4.mild [maɪld] –мягкий
5.refresh [rɪ'freʃ] –освежать
6.explorer [ɪks'plɔ:rə] – исследователь
7.monarch ['mɔnək] – монарх
8.powerful ['pauəful] –сильный
9.division [dɪ'vɪʒən] –деление
10. delay [dɪ'leɪ] – откладывать, задерживать
11. defeat [dɪ'fi:t] –отменять
12. support [sə'pɔ:t] –поддерживать
13. emerge [ɪ'mə:dʒ] –появляться
14. appoint [ə'pɔɪnt] –назначать
15. pick [pɪk] –выбирать
16. oppose [ə'pəuz] – выступать против
17. fellow ['feləu] –товарищ
18. salary ['sælərɪ] –жалованье, оклад
19. criticize ['krɪtɪsaɪz] –критиковать
20. survive [sə'vaɪv] –пережить, уцелеть
21. resource [rɪ'sɔ:s] – ресурсы, возможность
22. harvester ['ha:vɪstə] –уборочная машина
23. drillingmachine ['drɪlɪɳ] [mə'ʃi:n] –сверлильный станок
24. householdappliances [haushəuld] [ə'plaɪənsɪz] –бытовая техника
25. remain [rɪ'meɪn] –оставаться
26. join [dʒɔɪn] – присоединяться

**II. Read the text.**

The United Kingdom is a country in northwestern Europe. The nation's official name is the United Kingdom of Great Britain and Northern Ireland. When people refer to the country, most of them shorten its name to the United Kingdom, the U.K., Great Britain, or Britain. The United Kingdom consists of four political divisions - England, Scotland, Wales and Northern Ireland. London is the capital and the largest city. The United Kingdom occupies an area of over 244,000 sq km and has a population of over 58 million. About 90 percent of the population of the United Kingdom live in urban areas. The most important cities are London, Birmingham, Liverpool, Manchester, and Leeds.

The United Kingdom covers most of an island group called the British Isles. The British Isles consist of two large islands - Great Britain and Ireland - and thousands of small islands. England, Scotland, and Wales occupy the island of Great Britain. Northern Ireland occupies thenorth-eastern part of the island of Ireland. Britain's longest rivers are the Severn and the Thames. Bristol, Liverpool, London, and other cities are important ports.

The United Kingdom has a mild climate. The climate is influenced by the Gulf Stream, a warm ocean current that flows past the British Isles. Steady southwest winds blow across this current and bring warmth in winter. In summer, the ocean is cooler than the land. Winds over the ocean come to Britain as refreshing breezes. The sea winds also bring plentiful rain. The United Kingdom has rain throughout the year, and rarely is any section of the country dry for as long as three weeks.

The United Kingdom has a rich history. The British started the Industrial Revolution, a period of rapid industrialization that began in the 1700 s. They founded the largest empire in history. They have produced some of the world's greatest scientists, explorers, artists, and political leaders.

The United Kingdom is a constitutional monarchy. Queen Elizabeth II is the head of the state, but the cabinet of senior politicians called ministers actually governs the country. The prime minister is the head of the government.

The Constitution of the United Kingdom is not one document, as are the constitutions of many other countries. Much of it is not even in writing, and so the country is often said to have an unwritten constitution.

Parliament makes the laws of the United Kingdom. The British Parliament has been called the Mother of Parliaments because many of the world's legislatures have copied features from it.

Parliament is the chief lawmaking body. It consists of the monarch, the House of Commons, and the House of Lords.

Of the two houses that make up Parliament, the House of Commons often called simply the Commons, is by far the more powerful. The House of Commons has 651 members, elected from the four divisions that make up the United Kingdom. A general election must be held at least every five years.

The House of Lords, often called the Lords, was once the strongest house of Parliament, but today it has little power. It can delay, but not defeat, any bill that the Commons is determined to pass. The House of Lords has about 1,200 members. The people do not elect them.

The two largest political parties in the United Kingdom are the Conservative Party and the Labour Party. The Conservative Party developed from the Tory Party, which began in the late 1600's. It has always been one of the main parties in Britain. The Labour

Party began in 1900.Much of its support comes from labor unions, called trade unions.

For many years, another party, called the Liberal Party, was the Conservative Party's chief opponent. It developed from the Whig Party, which emerged in the late 1600's. But by the mid-1930's, the Liberal Party had become much smaller than either the Conservative or the Labour party. The Prime Minister is usually the leader of the political party that has the most seats in the House of Commons. The king or queen appoints the prime minister after each general election. The prime minister selects about 100 ministers. From them, the prime minister picks a special group of about 20 ministers to make up the Cabinet. The largest political party in the House of Commons that opposes the party in power is called Her (or His) Majesty's Opposition. The head of that party is the leader of the opposition. The leader is elected by his or her fellow party members but is paid a salary from the government funds. The opposition has the duty of criticizing the government in power and standing ready to set up a new government. For this reason, the leading members of the opposition party are popularly referred to as the Shadow Cabinet.

The United Kingdom is an important manufacturing and trading nation. In factBritain can survive only by manufacturing and trading. The country's farms produce only about two-thirds of the food needed by the people. Except for coal, natural gas, and oil, Britain has few natural resources. The country must import about a third of its food and many of the raw materials it needs for manufacturing.

The country is one of the world's largest producers of tractors. Other products include cranes, earth movers, road graders, harvesters, and drilling machines. British factories also make railway equipment, household appliances, and machine tools.

The Industrial Revolution began in Britain's textile industry. Today Britain remains an important producer of cotton and woolen textiles.

Many British farmers practice mixed farming – that is they raise a variety of crops and animals. Britain's most important crops are barley, potatoes, rapeseed, sugar beets and wheat. Sheep are Britain's chief live-stock. Farmers in almost every part of the country raise sheep for meat and wool. British farmers also raise beef cattle, dairy cattle, and hogs. Chickens are raised mainly in special mass-production plants.

Most of the United Kingdom's trade is with other developed countries. France, Germany, and the United States are Britain's leading customers and suppliers. A growing proportion of the country's trade is with themembers of the European Community, which the United Kingdom joined in 1973. Other trade partners include Canada, Ireland, Japan, Norway, Saudi Arabia, Sweden and Switzerland.

**III. Find one synonym to the first word in each row.**

1. powerful– influence – strong – refresh

---

2. delay – postpone – occupy – refer

---

3. support – defeat –mild – help

---

4. emerge – leave – appear – appoint

---

5. pick – join – take – oppose

---

6. salary – fellow – explorer – payment

---

7. resource – wealth – harvester – division

---

**IV. Find the suitable meaning to each of the words.**

1. survive – a) dividing or being divided
2. remain – b) assembly which makes laws
3. division – c) continue to live or exist
4. plentiful – d) higher in rank, authority
5. rapid – e) In large quantities
6. senior – f) moving, happening with great speed
7. legislature – g) be still present

**V. Translate the sentences into Russian. Pay attention to the Infinitive.**

Example: The country is often said to have an unwritten constitution. Часто говорят, что в стране нет конституции в письменном виде.

1. A general election must be held at least every five years.
2. The House of Lords can delay, but not defeat, any bill that Commons is determined to pass.
3. From them, the prime minister picks a special group of about 20 ministers to make up the Cabinet.
4. Much of it is not even in writing, and so the country is often said to have an unwritten constitution.
5. His duty is to inform everybody immediately.
6. The opposition has the duty to criticize the government in power and standing ready to set up a new government.
7. Britain can survive only by manufacturing and trading.

**VI. Complete the following sentences:**

1. The United Kingdom is a country in _____.
2. The U.K. occupies an area of over _____.
3. The U.K. covers most of an island group called_____.
4. The British Isles consist of two large islands – _____.
5. The U.K. has a _____.
6. The sea winds also bring _____.
7. The U.K. has a _____.
8. The country must import _____.
9. A general election must be held at least _____.
10. Many British farmers practice _____.

Possible answers: north-western Europe; 244 000 sq km; plentiful rain; mild climate; rich history; the British Isles; Great Britain and Ireland; a third of its food; every five years; mixed farming.

**VII. Insert the missed parts of the sentences:**

1. Great Britain covers most of an _____ called the British Isles.
2. The U.K. has _____ throughout the year.
3. The British started the _____ in the 1700s.
4. A cabinet of senior politicians called ministers actually _____ the country.

5. The Constitution of the U.K. is not one _____, as are the constitutions of other countries.

6. Parliament makes the _____ of the country.

7. The House of Lords was once the _____ of Parliament.

8. The Prime Minister is usually the _____ of the political party that has the most seats in the House of Commons.

9. The king or queen appoints the _____ after each general election.

10. The U.K.is an important _____ and trading nation.

Possible answers: Industrial Revolution; rain; island group; manufacturing; prime minister; leader; strongest house; laws; document; governs.

**VIII. Answer the following questions:**

1. What is the official name of Great Britain?
2. Where are the British Isles situated?
3. What are the four political divisions of the United Kingdom?
4. Why does the United Kingdom have a mild climate?
5. What can you say about the state organization of the United Kingdom?
6. Why is the British Parliament called the Mother of Parliaments?
7. What are the main political parties in the United Kingdom?
8. What is the ruling political party in Great Britain at present?
9. Who is the prime minister in the United Kingdom nowadays?
10. Who was the first woman to hold the office of prime minister of the United Kingdom?
11. Does the United Kingdom rank among the top industrial countries?
12. What British industry did the Industrial Revolution begin in?

**IX. Discuss the following points of the text in the form of a dialogue.**
**Use all types of questions.**

Example:
1. Does the United Kingdom consist of four political divisions?
2. Where is the UK situated?
3. What country occupies an area of over 244,000 sq km?
4. Do the British Isles consist of two or three large islands?
5. Britain's longest rivers are the Severn and the Thames, aren't they?

1. The geographical position and population.
2. The country's history and state system.
3. The political parties.
4. The industry of the country.
5. British agriculture.
6. The country's trade.

**X. What do you think the authors meant by the following statements? Doyou agree or disagree? Give reasons to support your opinion.**

1. When people say England, they sometimes mean Great Britain sometimes the United Kingdom, sometimes the British Isles, - but never England (George Mikes, Hungarian-born British writer, 1912-87).

2. But of all nations in the world the English are perhaps the least a nation of pure philosophers (Walter Bagehot, British economist and journalist, 1826-77).

3. England is... a country infested with people who love to tell us what' to do, but

who very rarely seem to know what's going on (ColinMacInnes, British novelist, 1914-76).

**XI. Read the article and say in 2-5 sentences what it is about.**

London Celebrates 150 Years of the Tube

On January 9th 1863the London Underground opened for the first time. Now the Tube is a central part of life in the British capital.

On January 9th, 1863, a steam-powered train left London's Paddington Station. Packed with passengers, it snaked three and a half miles under the soil of London to Farringdon, a station close to the city's financial heartland. Today, the same journey takes place thousands of times every year.

The first half of the 19th Century was a boom period for industrializationand London was changing radically: trade traffic packed the streets, pollution filled the air and the population more than doubled.

Now, as it celebrates its 150th anniversary, the Tube incorporates eleven lines and 270 stations. Some 527 trains each travel 114,500 miles every year, carrying over one billion passengers.

During World War II platforms and stations functioned as makeshift bunkers, where nearly 200,000 slept as bombs rained down on London. By the middle of the Blitz, 2,400 gallons of tea and cocoa were served underground every nightand washrooms, libraries and 22,000 bunk beds had been installed.

But the Tube is not always regarded with affection. When the Circle Line opened in 1884 the Times newspaper claimed thata journey on it was 'a form of mild torture which no person would undergo if he could conveniently help it'. Todaytemperatures in some parts of the network can reach 32°C - too hot to legally transport animals - and the air quality is so bad that one twenty minute journey is deemed the equivalent of smoking a cigarette.

**Answer the following questions:**

1. How many lines, stations and trains does the London Underground have now?
2. How was the London Underground used during World War II?
3. Does the London Underground make a positive contribution to people's quality of life?

**XII. Speak about Great Britain with your groupmate in the form of a dialogue.**

**XIII. Read the text. Use the dictionary to look up unfamiliar words.**

The UK Economy

The economy of the United Kingdom is highly developed and market-orientated. It is the sixth-largest national economy in the world measured by nominal gross domestic product (GDP), ninth-largest by purchasing power parity (PPP), and twenty second-largest by GDP per capita, comprising 3.3% of world GDP. In 2016, the UK was the tenth-largest goods exporter in the world and the fifth-largest goods importer. It also had the second-largest inward foreign direct investment, and the third-largest outward foreign direct investment. The UK is one of the most globalised economies, and it is composed of England, Scotland, Wales and Northern Ireland. The country's gross domestic product is $2.743 trillion in 2019.

Service industries account for about two-thirds of the United Kingdom's gross domestic product. More than 70 percent of British workers are employed in service indus-

tries. The country's service industries are concentrated in and near its largest cities, especially London.

Finance, insurance, and real property is the most important service industry in Britain. This industry accounts for a larger portion of the United Kingdom's GDP than any other industry. Most of the country's financial companies operate in London, one of the world's leading financial cities. Major financial institutions in London include the Bank of England (1), the United Kingdom's national bank, the London Stock Exchange (2), and Lloyd's of London insurance society (3).

Community, social, and personal services rank second among the service industries in the United Kingdom. This industry employs more British workers than any other service industry. It includes such activities as education and health care, and advertising and data processing.

Wholesale and retail trade is the third most important service industry in Britain. The most valuable wholesale trading activities include the distribution of petroleum and textiles. Aberdeen and London are important centres of petroleum refining and distribution. Leeds is the chief centre of the British clothing industry. Retail trade is centred in London, which has thousands of small shops and attracts millions of tourists yearly. Tourism is another of Britain's important service industries. It is a growing source of income and employment. Other large service industries in the United Kingdom include government, transportation and communication, and utilities.

The United Kingdom is a leading industrial nation. Most British industries are in central England, the London area, the Scottish Central Lowlands, the Newcastle upon Tyne area, and southern Wales. Britain ranks as an important steel producer. It exports nearly half of its finished steel. The rest is used in Britain to make hundreds of products. Much steel is used in automobiles, buses, trucks, and motorcycles. Britain also produces heavy machinery for industry, farming, and mining. The country is one of the world's largest producers of tractors. Other products include cranes, earth movers, road graders, harvesters, and drilling machines. British factories also make railway equipment, household appliances, and machine tools. The city of Sheffield is famous for its high-quality knives and hand tools.

British Aerospace makes a wide range of jet aircraft. It is the largest aerospace company in Europe. Rolls-Royce is world famous for airplane engines as well as luxury automobiles. Space satellites and weapons defense systems are also produced in Britain. Aerospace equipment and heavy machinery are major British exports.

An increasing percentage of Britain's manufactured goods consists of sophisticated electronic equipment. Much of this equipment is exported. Factories produce such items as cable television equipment, data processing equipment, fibre-optic communications systems, radar devices, and undersea telephone cables.

The chemical industry in Britain produces a variety of products – from industrial chemicals to plastics and soap. Britain is the fourth largest exporter of pharmaceuticals. The country's pottery industry is centred in Stoke-on-Trent. Outstanding names in British pottery include Worcester, Spode, and Wedgwood.

The United Kingdom is one of the world's chief centres of printing and publishing. British companies print paper money and postage stamps for many countries. Books published in Britain are exported to countries throughout the world.

The Industrial Revolution began in Britain's textile industry. Today, Britain remains an important producer of cotton and woollen textiles. British manufacturers also make synthetic fibres and fabrics. England's east Midlands region is a centre for the production of

lace and knitwear. Cotton and wool are produced in northern England. Scotland produces knitwear and is famous for its fine woollen products. Northern Ireland has a world-wide reputation for its linen goods.

Britain has one of Europe's largest clothing industries. The biggest centres are Leicester, Leeds, London, and Manchester. British clothing has long been famous for its quality. But today, Britain imports more clothing than it exports because many countries with lower labour costs can produce clothing more cheaply than the British can.

Processing of foods and beverages ranks as one of Britain's major industries. Most processed foods and beverages are consumed in Britain. But some are exported. Scotch whisky has a large world market. Other British industries manufacture bricks and cement, furniture, leather goods, glassware, and paper.

Britain imports about a third of its food supply. The imports include avocados, bananas, oranges, peppers, pineapples, and other items that cannot be easily grown in Britain's climate.

The United Kingdom has about 240,000 farms. About two-thirds of Britain's farmers own the farms on which they live. The rest rent their farms. About half the people who operate or work on farms do so on a part-time basis. Many British farmers practice mixed farming – that is, they raise a variety of crops and animals. Methods of mixed farming vary from farm to farm.In the rough highlands of Scotland, Wales, and western England, grass grows much better than farm crops. There, farmers use most of their land for grazing. The land in southern and eastern England is drier and flatter, and it is more easily worked. Farmers in eastern England use most of their land for raising crops.

Britain's most important crops are barley, potatoes, sugar beets, and wheat. Farmers in southern and eastern England grow almost all the country's sugar beets, and wheat and most of its barley. Potatoes are grown throughout the United Kingdom. Farmers in southern England grow most of Britain's fruits and garden vegetables. One of the most productive regions is the county of Kent in south-eastern England. It is called the Garden of England and is famous for the beautiful blossoms of its apple and cherry orchards in springtime. Farmers in Kent also grow hops, which are used in making beer.

Sheep are Britain's chief livestock. Farmers in almost every part of the country raise sheep for meat and wool. British farmers also raise beef cattle, dairy cattle, and hogs. Chickens are raised mainly in special mass-production plants.

The United Kingdom is a major world producer of petroleum, coal, and natural gas. These three fuels account for about 85 percent of the value of total mineral production in the country. Petroleum is Britain's most valuable mineral. British oil wells produce about 650 million barrels of petroleum a year. In the past, the country had to import petroleum to meet its needs. But during the 1970's, Britain began producing petroleum from wells in the North Sea. Today, Britain's oil wells provide nearly all the petroleum that the country uses and also supply petroleum for export.

Britain's largest coal-mining region lies near the River Trent in central England. Coal from this area is an important source of fuel for the country's electric power plants. Britain obtains natural gas from deposits below the North Sea. These deposits provide enough gas to meet most of the country's needs. Britain's next most important minerals, in order of value, are sand and gravel, limestone, and clays. The Southwest Peninsula has fine china clay, used in making pottery. South-eastern England has large deposits of chalk, used for cement. Other British minerals include sandstone and gypsum.

The United Kingdom ranks as a leading trading nation. Britain once imported chiefly raw materials and exported mostly manufactured products. However, manufactured

goods now account for about three-fourths of British imports and also about three-fourths of its exports. Britain exports aerospace equipment, chemicals and pharmaceuticals, machinery, motor vehicles, petroleum, and scientific and medical equipment. Its imports include chemicals, clothing, foods (especially fish, fruit, vegetables, meat, coffee, and tea), machinery, metals, motor vehicles, paper and newsprint, petroleum products, and textiles.

Most of the United Kingdom's trade is with other developed countries. France, Germany, and the United States are Britain's leading customers and suppliers. A growing proportion of the country's trade is with members of the European Union. Other trade partners include Canada, Ireland, Japan, Norway, Saudi Arabia, Sweden, and Switzerland.

The value of Britain's imports of goods usually exceeds the value of its exports. British banks and insurance companies make up part of the difference by selling their services to people and firms in other lands. Another important source of income is the spending by the more than 15 million tourists who visit the United Kingdom each year. The British merchant fleet also brings in money by carrying cargoes for other countries. The income from all these invisible exports exceeds $200 billion a year.

Roads and railways carry most passenger and freight traffic within the United Kingdom. An excellent system of high-speed motorways links major cities and towns. Bus systems provide local and intercity transportation. Lorries carry about 80 percent of the inland freight. An extensive rail network crisscrosses the United Kingdom. The railroads are owned by the government and provide excellent high-speed passenger service, as well as freight hauling.

Britain has a large merchant fleet. The ships in the fleet carry British-made goods to ports throughout the world and bring back needed imports. British ships also carry freight for other countries. There are about 80 ports of commercial significance throughout the United Kingdom. The country's inland waterways are used to carry freight, as well as for recreational boating. The Thames, which flows through London, is Britain's busiest river and one of the busiest in the world.

British Airways, the United Kingdom's largest airline, operates flights to all parts of the world. Smaller airlines provide service within Britain and to other countries. Britain's largest airports are Heathrow and Gatwick, both near London, and those at Birmingham, Glasgow, and Manchester.

Britain has about 100 daily newspapers. About 15 have nation-wide circulation. Their main offices are in London. The Sun and the Daily Mirror have the largest circulations. Other leading papers include The Times, The Guardian, The Daily Telegraph, and The Independent.

The British Broadcasting Corporation (BBC), a public corporation, provides commercial-free radio and television service. The BBC is financed chiefly by yearly licenses that people must buy to own a television set. Television stations controlled by the Independent Television Commission and radio stations controlled by the Radio Authority broadcast commercials.

**1. Group the following words into nine synonymous groups.**

| | | | |
|---|---|---|---|
| aggregate | external | leading | national |
| cheap | foreign | low-cost | naval |
| chief | gross | low-priced | overseas |
| commercial | important | main | significant |
| complex | inexpensive | major | sophisticated |
| domestic | inland | marine | total |

entire internationalmercantile trading

**2. Read the following text and find synonyms for the highlighted words.**

The **leading** position of British commerce in world trade during the 18th and 19th centuries resulted largely from the geographical isolation of the British Isles from the wars and political troubles that afflicted the centres of trade on the European continent. The development of the great **trading** companies, colonial expansion, and **naval** control of the high seas were corollary factors. Before the 17th century the **foreign** trade of England was almost completely in the hands of foreigners; wool was the principal export, and manufactured goods were the chief imports. Under the **mercantile** system, which in Great Britain was the prevailing economic theory of the 17th and 18th centuries, the government fostered British **foreign** trade, the development of shipping, and trading companies. As British overseas possessions increased, the raising of sheep for wool and mutton became a major occupation in the colonies; the practice of exporting wool from England and importing manufactured woollen articles was gradually replaced by the import of wool and the manufacture and export of yarns and fabrics. Cotton textiles, iron and steel, and coal soon became **significant** British exports.

**3. Group the words that follow into six antonymous groups.**

| | | | |
|---|---|---|---|
| cheap | full-time | low | personal |
| expensive | high | national | public |
| foreign | invisible | part-time | visible |

**4. Fill in the blanks in this passage, using the words from the list.**

| | | |
|---|---|---|
| companies | goods | land |
| countries | government | petroleum |
| crops | imports | trade |
| economy | industry | workforce |

The United Kingdom has a developed mixed private and public-enterprise (1) __ that is largely based on services, especially international trade, and manufacturing. The (2) __ controls the production of coal, steel, and ships; it also runs certain utilities, the railways, and most civil aviation. The gross national product (GNP) is growing faster than the population, but only slowly. The GNP per capita lags behind those of most other western European (3) __.

Agriculture accounts for less than 2 percent of the GNP and employs some 2 percent of the (4) __. Farming is highly mechanized, though farms are not extremely large, and is dominated by the raising of sheep and cattle. Pastures cover about one-half of the land. Arable (5) __ is limited to less than one-third of the nation's land area, and the United Kingdom is not agriculturally self-sufficient. Chief (6) __ include barley, wheat, sugar beets, and potatoes.

The mineral (7) __ accounts for approximately 6 percent of the GNP but employs less than 1 percent of the workforce. Production from oil fields in the North Sea has allowed the United Kingdom to become virtually self-sufficient in (8) __. The United Kingdom's coal industry, despite its steady decline since the early 1950s, remains one of the largest and most technologically advanced in Europe.

Manufacturing industries account for one-fifth of the GNP and employ a similar proportion of the workforce. Small (9) __ predominate, though companies with 500 or more employees employ a larger percentage of the workforce. Major manufactures include

motor vehicles, aerospace equipment, electronic data-processing and telecommunication equipment, metal goods, precision instruments, petrochemicals, and other chemicals.

Exports of (10) __ and services account for as much as a third of the GNP, and the British merchant navy remains one of the world's largest. The European Union, which the United Kingdom joined in 1973, accounted for nearly half of the country's (11) __ before brexit. Exports to Commonwealth countries also represent a significant share of the United Kingdom's total exports and ordinarily exceed (12) __.

## GREAT BRITAIN: THE LAND OF INSPIRATION

**I. Read the text and be ready to discuss it.**

Although you may think of Britain as England, it is really three countries in one. Scotland in the North, and Wales in the West, were once separate countries. They have different customs, traditions, languages and, in Scotland's case, different legal and educational systems, all fought over with the English centuries ago, and even now not entirely resolved. Both the Scottish language Gaelic, and particularly Welsh, can still be heard spoken in each country, but nevertheless English is still their main language.

Britain is a deceptively large island and is surrounded by some varied – and very beautiful – coastline, which is worth exploring. Some of the best sandy beaches are found in Devon and Cornwall, where they are washed by shallow Atlantic seas and overlooked by craggy, granite cliffs.

Beyond London, Britain's landscape varies from the soft rolling hills of Southern England, through the flatter expanses of the Midlands, to the dramatic hills and lakes of Northern England, Wales and Scotland.

Historical towns abound in the south. Oxford is a world famous university town dating back to the 12$^{th}$ century. Bath is an elegant spa town built over the remains of a similar Roman settlement.

In the hub of England lies an area steeped in heritage, unspoiled countryside, bijou villages and lively cities competing for attention. This is an area of contrasting landscapes and architectural styles, with meandering rivers and picturesque market towns that have changed little with time. Stratford-upon-Avon, the birthplace of William Shakespeare, and Cambridge with its architectural glories and peaceful, unhurried atmosphere, Nottingham, home to the medieval outlaw Robin Hood and his merry men, must all surely merit a visit too.

Some of the country's most inspiring landscapes await you in the north of England. It is a peaceful and pastoral region boasting no less than five National Parks. In Cumbria you will find the Lake District, a stunning combination of mountains, lakes and rushing streams that have inspired countless poets, artists and writers, including Wordsworth and Beatrix Potter, who lived in the area. The spectacular views of the Lake District are a magnet to fell-walkers, climbers and watersports enthusiasts.

Scotland conjures up images of dramatic mountains, lochs, tartan, bagpipes and fine malt whisky. Scotland is all this and much more besides... it's a land rich in royal heritage, with turreted castles, Highland games and historical towns and cities

Landscapes in Scotland are breathtaking in their variety, and have sustained and inspired the unquenchable spirit of Scotland.

The soaring Highlands, with deep glens cradling jewel-like lochs attest to the drama and beauty of Scotland's landscapes. Southwards lie high moorland, green rolling hills and scattered abbey ruins of the Lowlands. The Scottish Isles – the Hebrides, the Orkneys and

the Shetlands – belong to another peaceful and idyllic world.

If mountains, glens and lochs embody the scenery of the Highlands; clans, tartans and bagpipes, porridge and whisky are its essence.

The cities are just as diverse as the landscapes. Edinburgh, the graceful capital, is dominated by an imposing 12th century castle. In contrast is the Georgian Edinburgh of attractive squares, tree-lined avenues and elegant shopping thoroughfares (renowned for their classic tartans and cashmere sweaters). The city's rich cultural heritage is highlighted by its spectacular International Festival.

Glasgow is the cultural centre of Scotland and its exuberant festivals are widely acclaimed. Housing some of the finest museums and galleries in Europe, the city is great for culture hunters.

Magnificent scenery with imposing castles on just about every vital hill top, a long and colourful history, a country where its people have maintained a separate identity, an ancient language and a passion for their song and poetry... this, unquestionably, is Wales.

You'll know you are in a different country as soon as you cross the border from England and see the road signs in English and Welsh. The Welsh word for their country is 'Cymru' meaning 'the land of comrades'. And it goes without saying that you'll find the Welsh open, friendly, and good at making people welcome.

The Welsh people with a rich and ancient culture that is instilled in everyday life even today, are famed for their love of poetry and song. The Welsh gift for singing in harmony is praised worldwide and male choirs can be found almost in every village. The best places to hear their song are at festivals of music, the best known of which is the Eisteddfod.

Yet this is not just a "Land of Song", it is also a land of mountains, a heaven for those invigorated by fresh air and open spaces. The rugged and untamed Snowdonia National Park lies to the north, a favourite with walkers and climbers.

Wales is also renowned for its enchanting castles. There are more castles to the square mile than in any other country in the world. These mighty fortresses and romantic ruins are reminders of historic battles. They were built by Welsh princes as a defence from their neighbours, then more castles were constructed by the Normans, and later still the English to keep the fiery Welsh at bay.

Cardiff, the capital of Wales, is a rich tapestry of culture and history. Wherever you walk in this truly cosmopolitan city you will discover art and architecture that echo many ages and ideals. One of the chief glories of the capital is the magnificent Cardiff Castle, started by the Romans, enhanced by the Normans and lavishly adorned more recently.

If you like impressive castles and nature at its most dramatic, have a love of poetry, song... and British team sports like rugby... Wales will not disappoint you.

Hardly 85 miles from top to bottom, Northern Ireland can be explored in just a week. The delightful variety of Northern Ireland's scenery - blue mountains, forest parks, island-studded lakes, and a spectacular coastline - is matched by the country's richly varied cultural inheritance. There are ancient tombs, Celtic crosses, early monasteries, and a range of exciting visitor attractions, which put this heritage into context.

Highlights of the northern coast include the extraordinary volcanic formations of the Giant's Causeway and the oldest licensed whiskey distillery in the world.

Belfast's lively cultural scene, with concert halls, theatres and world-class musical entertainment, draws in visitors from all over. The largest arts festival in the whole of Ireland is held in Belfast each November.

Discover the delightful beauty of Northern Ireland, and you soon realise that this is a

country just pretending to be small.

Britain is a land so rich in diversity that it is only the beginning of your journey of discovery. But we do hope that it is a pleasant start - and a taste of things to come!

## 2.1. SOIL

### SOIL

**I. Read and translate the text. Use a dictionary if necessary.**

Soil plays a vital and important role in the life of the world and mankind. It is in fact a highly organized physical, chemical and biological complex all of us are dependent on. As the supporter of vegetable life, the soil plays fundamental role in providing food for all animals and men.

Soils develop under the influences of climate, vegetation, slope and drainage, time, the nature of the parent material, and the culture. Climate influences plants, animals and soil directly. Plants influence plants, animals, soil and climate near the ground. Animals play a considerable role in soil development; the type of soil often influences the animals which are present in it, while the animals also influence the vegetation which is growing in the soil. Finally climate, through weathering, influences the rocks, which in time become part of the soil through the processes of soil formation.

Soils do not have the same utility, but man uses different soils in different ways. “Good” land for the production of food-stuffs must lie well and have good depth, for yields are dependent upon the ability of the soil to take up and use fertilizers and water. Man has done much to adapt crops to the soil and to provide various kinds of fertilizers for plant growth and development. Soils that are not good for the production of food-stuffs may be valuable in others ways. For example, podzols in high elevations are poor for crops but they comprise excellent forest soils.

Each soil series requires skilful handling if it is to produce to its maximum potential; but no two series make the same demands. From season to season conditions of temperature and moisture change, so the farmer must change his management to produce better drainage, improve tilth, prevent erosion, and test his soil to identify the proper kind and the correct proportion of fertilizer needed. Only by careful study of the soil, resulting in an understanding of the complexity of its nature and uses, will man be able to provide food for all the people who will inhabit the earth. The soil cannot reproduce itself. Therefore, man should improve it through good soil management and treatment so that future generations can farm more efficiently than their fathers and grandfathers have done. Man can improve the soil now in use and even discover how more kinds of soils can be utilized more productively.

So, the results obtained in soil science can be applied to practical problems in agriculture, horticulture, forestry, engineering, and in planning the future use of land.

**II. Match the words in Russian and their English equivalents.**

| | |
|---|---|
| 1. soil | a. горная порода |
| 2. fertilizer | b. подпочва |
| 3. vegetation | c. влажность, влагоемкость |
| 4. rock | d. осушение, дренаж |
| 5. yield | e. садоводство |

| | |
|---|---|
| 6. subsoil | f. удобрение |
| 7. drainage | g. растительность |
| 8. moisture | h. обработка почвы |
| 9. tilth | i. почва, грунт |
| 10. horticulture | j. урожай |
| 11. forestry | k. полезность, польза |
| 12. utility | l. лесоводство, лесничество |
| 13. to reproduce | m. воспроизводить, возобновлять, восстанавливать |

**III. Match the words similar in meaning.**

| | |
|---|---|
| 1) to supply | a) crop |
| 2) yield | b) food-stuff |
| 3) vegetation life | c) demand |
| 4) to absorb | d) land |
| 5) food elements | e) plants |
| 6) usefulness | f) skilful |
| 7) correct | g) to provide |
| 8) requirement | h) to take up |
| 9) soil | I) utility |

**IV. Find the words with opposite meaning.**

| | |
|---|---|
| 1) useful | a) simplicity |
| 2) absorb | b) useless |
| 3) complexity | c) deteriorate |
| 4) improve | d) give off |
| 5) different | e) dryness |
| 6) moisture | f) the same |

**V. Match the words and their definitions.**

| | |
|---|---|
| 1. climate | a. soil destruction |
| 2. weather | b. the average weather conditions through the year |
| 3. soil | c. the upper layer of land, the thickness of which varies from several centimetres to se-veral metres |
| 4. subsoil | d. the quantity of grain, vegetables, or fruit that is grown in one season |
| 5. erosion | e. the rock situated under the surface of land |
| 6. crop | f. the day-to-day conditions of atmosphere |

**VI. Find in the text and translate into Russian:**

a) word combinations that have the word “soil” in their composition;
b) words that denote human activities related to the soil;
c) words which denote factors that influence soil condition;
d) words which denote fields of soil science application.

**VII. Determine if statements are true or false.**

1. Different soils have the same utility.
2. Soil science is only of theoretical value.

3. To improve the soil one should study it thoroughly.

4. Soil requirements are always the same.

5. Soils that are not valuable for grain crops may be very good for some other purpose.

6. Climate is influenced by soil.

**VIII. Answer the questions:**

1) What is soil?
2) What factors influence the development of soils?
3) How do people use different soils?
4) Why must farmers change the management of their soils?
5) Can the soil reproduce itself?
6) In what fields can the results obtained in soil science be applied?
7) What should be taken into account to provide skilful handling of soils?
8) How can people improve the soil?
9) Why is it necessary for soils to be well managed?

**IX. Restore the plan of the text. Find in the text 2-3 sentences for each point in the plan. Make up a summary of the text using the following phrases:** as you can see from the title the text dwells upon…, according to the text…, as far as I can understand…, the text is (is not) on the subject I am greatly interested in…, the text will be noted by those who take interest in….

| | |
|---|---|
| *Factors that influence soil development.* | |
| *The application of soil scence.* | |
| *The use of soils.* | |
| *What soil is.* | |
| *Soil management.* | |

## PHYSICAL PROPERTIES OF SOILS

**I. Read and translate the text. Use a dictionary if necessary.**

The physical properties of a soil are determined largely by its texture, or the size of the particles of which it consists, and its structure, or the arrangement of these particles.

For a soil to be in good physical condition for plant growth, the air, water, and solid particles must be in the right proportions at all times. Every cubic foot of soil that supports plant life must be:

1) well enough aerated to permit all plant root cells to obtain oxygen at all times, but not excessively aerated to the point of preventing a continuous contact of roots with moist soil particles;

2) open enough to permit the right amount of rain-water or irrigation water to enter the soil, but not so open as to allow excessive loss of water and plant nutrients by deep percolation;

3) sufficiently retentive of moisture to supply roots with all needed water, but not so retentive as to create undesirable suspended water-tables.

Soil texture has to do with the fineness or coarseness of soil particles. Mineral particles which make up the bulk of soil vary greatly in size. The four principal size categories are “gravel”, “sand”, “silt”, and “clay”. Some soils, for example sand, consist largely of particles of approximately the same size. Most soils, however, have two or more groups, classified by size of particles, usually with one group dominant. Thus, in grouping soils into texture classes, the proportion of particles belonging to different size groups, as well as the particle sizes themselves, are important.

In most soils texture varies greatly from the surface downward. The subsoil usually contains more clay and other fine material than does the surface soil, although this is not always the case.

In soil classification, the texture of the surface soil seems more significant than that of deeper layers. Therefore, soils are usually classified according to the texture of a six- to eight-inch thick surface layer, approximately the “plow layer”. Six major texture groups are “sand”, “sandy loam”, “silt loam”, “loam”, “clay loam”, and “clay”. Each of these groups may be subdivided when it is useful to do so.

Many soil qualities are closely related to texture. Since fine-textured soils have greater pore space and larger surface area than coarse-textured soils, they provide greater storage space for water and better feeding zones for plant roots. Thus, in a broad way, relatively fine-textured soils are more productive agriculturally than are soils with coarse texture. Too fine a texture, however, adversely affects tillage. Sands and sandy loams are more easily tilled than clays and clay loams because the tilling of the former requires less power and is hindered less by wetness.

Soil structure refers to the manner in which the individual soil particles are arranged. Structure has much in common with texture, although structure is much more complex. As a property of soil, structure in some instances may be even more important than texture. Physical, chemical, and biological forces in nature work together arranging soil particles into a great variety of structural patterns.

Good structure is valuable in any soil. Some soils have structures that make them difficult to manage and render them practically worthless agriculturally. Because of structural differences, some soils require much more care than others. Preventive measures often check structural breakdowns, and careful management can restore deteriorated structures to normal.

Water is the most variable property of the soil. The functions of soil water are varied. Soil water is vital to plant life, since all nutrients that plants take from the soil are dissolved in it. Water aids in the decomposition of organic and mineral matter and in bringing about chemical changes within the soil.

Soil water is a very significant factor in planting, tilling, and harvesting cultivated crops. It often determines the time and the depth at which seeds should be planted for proper germination. Water may be so abundant in the soil as to restrict machine cultivation, thus making the control of weeds difficult. On the other hand, scarcity of water may make the soil hard, cloddy, and very difficult to plow. Too much soil water at harvest time often delays or completely prevents the use of harvesting machinery.

Soil range in colour from white to black, but the common colours are the different shades of red, yellow, and brown. These colours indicate the different degrees of hydration and the concentration of iron and aluminium oxides which stain the soil grains.

Dark-coloured soils are considered to suggest higher productivity than light-coloured ones, though it is not always the case.

**II. Match the words and their Russian equivalents.**

| | |
|---|---|
| 1. moist | a. дождевая вода |
| 2. rain-water | b. питательное вещество |
| 3. water-table | c. орошение |
| 4. irrigation | d. просачивание, фильтрация |
| 5. nutrient | e. влажный, сырой, водонасыщенный |
| 6. percolation | f. уровень грунтовых вод |
| 7. fine | g. слой, пласт |
| 8. coarse | h. ил |
| 9. silt | i. мелкозернистый, тонкозернистый |
| 10. gravel | j. глина |
| 11. sand | k. сорняк |
| 12. clay | l. собирать урожай |
| 13. layer | m. ухудшать (ся), разрушать |
| 14. loam | n. гравий |
| 15. pore | o.возделывать землю; культивировать |
| 16. tillage | p. суглинок |
| 17. to dissolve | q. прорастание, развитие |
| 18. to harvest | r. обработка почвы; вспахивание |
| 19. to cultivate | s. пористый |
| 20. weed | t. песок |
| 21. germination | u. растворять(ся) |
| 22. to deteriorate | v. крупнозернистый |

**III. Translate the following international words and word combinations into Russian.**

Texture, physical, structure, proportions, mineral, classification, normal, factor, zone, machine, cultivation, control, productivity.

**IV. Find a more general word in each row**.

1. a) white, b) black, c) red, d) colour
2. a) gravel, b) rock, c) clay, d) sand
3. a) pore, b) fine, c) texture, d) coarse
4. a) large, b) size, c) small, d) medium
5. a) property, b) size, c) structure, d) colour
6. a) old, b) ancient, c) young, d) age

**V. Form adjectives according to the given model.**

Model: fine + texture - fine – textured

| | | | | |
|---|---|---|---|---|
| white<br>dark<br>light | colour | | oval<br>square<br>round | shape |
| coarse<br>fine<br>pore | structure | | red<br>yellow<br>brown | shade |

**VI. Form the word according to the model and translate them into Russian.**

Model A: wet + ness ------ wetness

a) useful, fine, coarse, intensive, extensive;

Model B: use + less ------ useless

b) worth, colour, use, power, structure

**VII. Read and translate the following sentences into Russian paying attention to the infinitive constructions.**

1. Every cubic foot of soil must be well aerated to permit all plant root cells to obtain oxygen at all times.
2. Dark-coloured soils are considered to suggest higher productivity than light-coloured ones.
3. For a soil to be in good condition for plant growth, the air, water, and solid particles must be in the right proportions.
4. Every cubic foot of soil must be open enough to permit the right amount of rain-water or irrigation water to enter the soil.

**VIII. Find in the text the words the definition of which is given.**

1. Very small parts of soil. _____
2. The size of particles the soil consists of. _____
3. Soils with greater pore space and larger surface area. _____
4. Food elements needed for plant growth. _____
5. The arrangement of soil particles. _____

**IX. Complete the sentences.**

1. The physical properties of a soil are determined by….
2. For a soil to be in good condition … must be in the right proportion.
3. The main size categories of soils are ….
4. … varies greatly from the surface downwards.
5. The surface soil usually contains less clay and other fine material than does ….
6. Fine-textured soils have smaller ….
7. …are more productive agriculturally than….
8. Soil colours indicate ….

**X. Answer the questions**.

1. What are the physical properties of a soil determined by?
2. How does the texture of the subsoil differ from the texture of the surface soil?
3. What is the difference between soil texture and soil structure?
4. What are the major texture groups of soils?
5. How many size categories of soils are there?
6. What are the functions of soil water?
7. How does the structure of soils influence their management?
8. What do soil colours indicate?

**XI. Read the following text without a dictionary and find answers to the questions.**

1. What types of soils are there in practical farming?

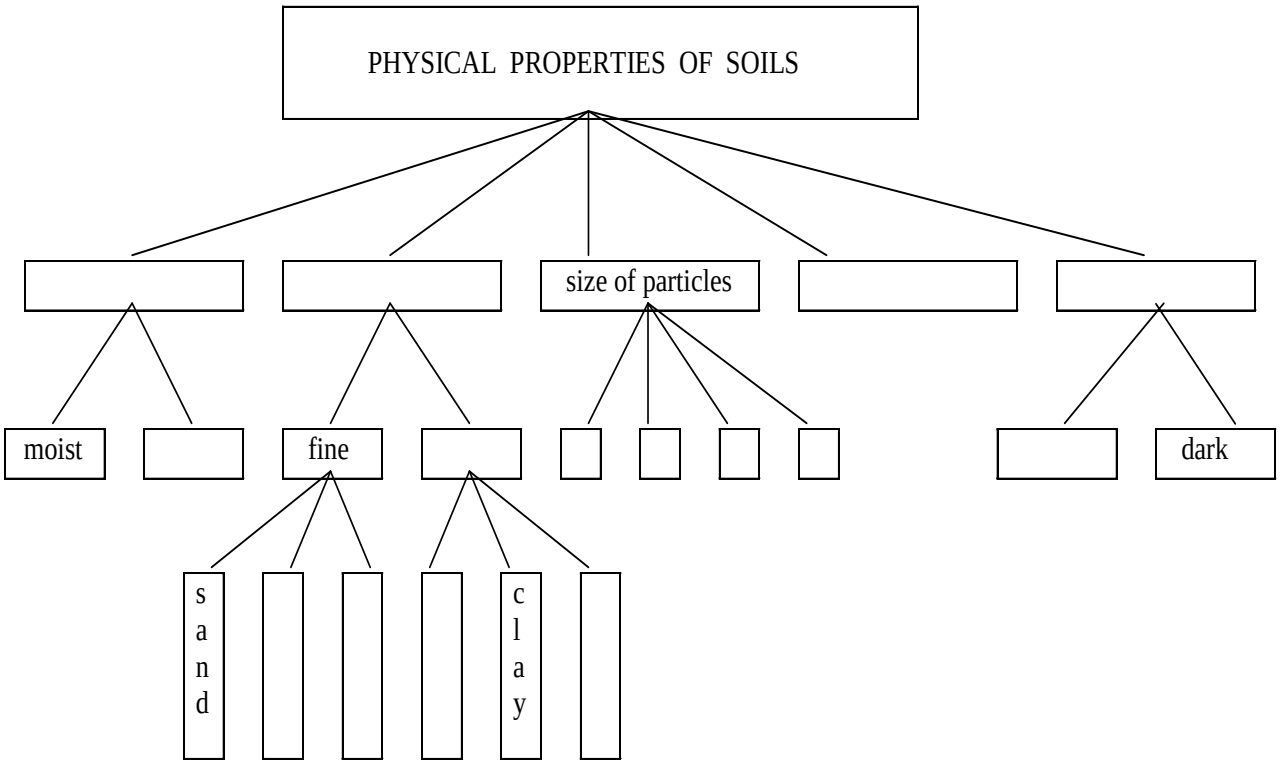
2. What is the difference between them?

Soil Types

In practical farming, the two main types of soil are light soils and heavy soils. Light soils are easy to work, need less power to cultivate, can be worked at most times of the year, and do not hold water so much. Sands and gravels belong to this group.

Heavy soils are more difficult to work, need much more power to cultivate, can only be worked at certain times when they are in the proper condition, and hold water. They are usually more productive and grow heavier crops. Heavy soils usually contain much clay.

**XII. Complete the table according to the contents of the text.**




## CHEMICAL PROPERTIES OF SOILS

**I. Read and translate the text. Use a dictionary if necessary.**

Soils vary greatly in their chemical make-up. This variation is due to the chemical composition of the parent materials and to the climate and plant and animal life under which the soil developed.

Soils contain most, if not all, known elements in varying amounts and many forms. Oxygen, silicon, aluminium, and iron are the most abundant. Rarely, if ever, does a soil show a deficiency of any of these four elements. However, many soils are deficient in several other elements that are critical to plant growth. These elements are referred to as "fertilizing elements", since they are known to be widely used in artificial fertilizers. Nitrogen, phosphorus, and potassium are the three most common. They are constituents of most commercial fertilizers, their proportions usually being 5-10-5 and 6-4-4.

A few elements essential in small amounts to many plants are contained in very small quantities in most soils. These have been referred to as trace elements, because the amounts present in the soil can neither be estimated nor determined very accurately.

Soil conditions range from acidity to alkalinity. Acidity and alkalinity are directly opposite conditions of soil. Neutral soils are neither acid nor alkaline. Soil water becomes

acid by absorbing carbon dioxide from the air and by absorbing acid products formed by the decomposition of mineral and organic matter.

In a broad sense, soils in humid climates tend toward acidity, whereas soils in dry climates tend toward alkalinity.

Most plants, particularly most cultivated crops, will not tolerate a high degree of either acidity or alkalinity. Since most agriculture is carried on in relatively humid climates, acidity is a troublesome and costly problem with many soils. Vast amounts of lime are used to neutralize soil acidity.

Chemically, a soil is acid if a water solution contains more acid ions (hydrogen) than basic ions (hydroxyl), and it is alkaline if the water solution contains more hydroxyl ions than hydrogen ions. If a solution contains the same number of hydrogen and hydroxyl ions, it is neutral.

The breaking down of water molecules into ions is known as ionization. As a matter of convenience, the concentration of hydrogen ions is usually expressed symbolically as pH. A pH scale with numbers ranging from 0 to 14 indicates relative concentrations. For example, at pH = 7, the midpoint, there are the same number of hydrogen ions and hydroxyl ions, and the solution is neutral. Any pH values below 7 indicate the presence of more hydrogen ions, or an acid condition; values above 7 denote the presence of more hydroxyl ions, or an alkaline condition.

Soils of different textures may not have the same pH values. The active hydrogen ions are in the water solution and naturally will react first when lime is added. The hydrogen molecules that have not yet ionized are held to the surfaces of the solid particles of clay und organic matter. Since clays and organic matter have large surface areas, the potential acidity would be greater among such fine-textured soils. Sandy soils with a small content of clay and organics would have a lower total acidity than the clay soils. A good application of lime to these soils may be effective for several years.

**II. Match the words and their Russian equivalents.**

| | |
|---|---|
| 1. make-up | a. химический состав |
| 2. solution | b. существенный, необходимый |
| 3. chemical composition | c. кислотность |
| 4. constituent | d. кислород |
| 5. fertilizer | e. разложение; распад, гниение |
| 6. alkaline | f. структура |
| 7. acidity | g. известь |
| 8. oxygen | h. составная часть |
| 9. silicon | i. поглощать |
| 10. to absorb | j. содержать, вмещать |
| 11. essential | k. раствор |
| 12. hydrogen | l. уровень, значение pH |
| 13. decomposition | m. щелочной |
| 14. lime | n. кремний |
| 15. surface | o. поверхность |
| 16. to contain | p. удобрение |
| 17. pH value | q. водород |

**III. Translate the following international words and word combinations into Russian.**

Chemical, variation, material, climate, elements, forms, aluminium, proportions, neutral, mineral, organic, ions, basic, molecules, concentration, symbol, texture, active, react, potential, effective.

**IV. Find the word which is similar in meaning to the word at the beginning of each row.**

| | | | |
|---|---|---|---|
| 1. make-up | a) texture | b) structure | c) system |
| 2. decomposition | | a) decay | b) condition c) development |
| 3. essential | a) effective | b) efficient | c) necessary |
| 4. to range | a) to establish | b) to vary | c) to determine |
| 5. to absorb | a) to take up | b) to feed | c) to contain |
| 6. substance | a) solution | b) element | c) fertilizer |
| 7. amount | a) quality | b) variation | c) quantity |

**V. Find the word the translation of which is given at the beginning of each row.**

| | | | |
|---|---|---|---|
| 1. кислотный | a) alkaline | b) essential | c) acid |
| 2. водород | a) hydrogen | b) oxygen | c) aluminium |
| 3. раствор | a) substance | b) convenience | c) solution |
| 4. поглощать | a) to vary | b) to absorb | c) to form |
| 5. степень | a) degree | b) amount | c) range |
| 6. содержать, вмещать | a) to denote | b) to contain | c) to indicate |
| 7. удобрение | a) lime | b) crop | c) fertilizer |
| 8. поверхность | | a) surface | b) soil c) matter |

**VI. Complete the sentences.**

1) Factors that influence the chemical make-up of soils are ….
2) If a water solution contains more hydrogen than hydroxyl it is … .
3) … are widely used in artificial fertilizers and are known as fertilizing elements.
4) Trace elemnts are …
5) Lime is one of the affective neutralizers of … .
6) The potential acidity is greater among such fine-textured soils as … .
7) If … then the solution is neutral.
8) The variation of soils in their chemical make-up is due to … .
9) A soil is alkaline if … and it is acid if ....
11) Soils in humid climates are …, soils in dry climates are ….
12) Any pH values below 7 indicate … condition; values above 7 denote … condition.

**VII. Categorize the sentences into three groups:**

*a) Elements contained in soils;*
*b) Soil conditions;*
*c) Methods of reducing soil acidity.*

1. Acidity is greater among fine-textured soils. 2. Nitrogen, phosphorus and potassium are referred to as fertilizing elements. 3. Soil conditions range from acidity to alkalinity. 4. Any pH values below 7 indicate an acid condition. 5. A good application of lime to the clay soils may be effective for several years. 6. Those elements that are contained in vary small quantities in most soils are referred to as trace elements. 7. Neutral soils are nei-

ther acid nor alkaline; there is the same number of hydrogen ions and hydroxyl ions. 8. A soil is alkaline if a water solution contains more basic (hydroxyl) ions than hydrogen ions. 9. Soils in humid climates tend toward acidity, whereas soils in dry climates tend toward alkalinity. 10. The active hydrogen (acid) ions are held to the surfaces of the solid particles of clay and organic matter and they react first when lime is added.

**VIII. Make up a summary of the text "Chemical Properties of Soils".**

## GEODESY AS A SCIENCE

**I. Pronounce the following words correctly and learn their meanings.**

1. accurately [ˈækjərətlɪ] - точно, правильно
2. shape [ʃeɪp] - форма, очертание
3. circumference [səˈkʌmf(ə)r(ə)ns] - окружность
4. shadows [ˈʃædəʊ] - тень
5. essential [ɪˈsenʃ(ə)l] - необходимый , существенный
6. application [æplɪˈkeɪʃ(ə)n] - применение
7. precise [prɪˈsaɪs] - точный, определённый
8. sobriquet [ˈsəʊbrɪkeɪ] - прозвище, кличка, прозвание
9. extraterrestrial [ˌekstrətəˈrestrɪəl] - внеземной
10. crustal [ˈkrʌstl] - земная кора
11. investigate [ɪnˈvestɪgeɪt] - исследовать; изучать
12. inherent [ɪnˈhɪər(ə)nt] - неотъемлемый
13. water vapor [ˈwɔːtə ˈveɪpə] - водяной пар
14. glacier [ˈglasɪə] - ледник
15. ice sheet [aɪs ʃiːt] - ледяной покров
16. rotation [rə(ʊ)ˈteɪʃ(ə)n] - вращение
17. shoreline [ˈʃɔːlaɪn] - береговая линия
18. determine [dɪˈtɜːmɪn] - определять, устанавливать
19. boundary [ˈbaʊndrɪ|] - граница, черта
20. surface [ˈsɜːfɪs] - поверхность
21. surveying tool [səˈveɪɪŋˈtuːl] - геодезические инструменты
22. measure [ˈmeʒə] - измерять, мерить
23. consistent [kənˈsɪst(ə)nt] - совместимый, последовательный
24. point [pɔɪnt] - точка, место
25. capture [ˈkæptʃə] - поймать, фиксировать
26. ellipsoid [ɪˈlɪpsɔɪd] - эллиптический, овальный
27. smooth [smuːð] - гладкий, ровный
28. valley [ˈvælɪ] - долина, впадина
29. additional [əˈdɪʃ(ə)n(ə)l] - дополнительный
30. exist [ɪgˈzɪst] - существовать

**II. Read and translate the text.**

Geodesy is the science of accurately measuring and understanding the Earth's geometric shape, orientation in space, and gravity field. This field of study dates back to ancient Greece, when Eratosthenes measured the circumference of the earth using shadows. Today, geodesy is essential for modern navigation – GPS relies upon accurate geodetic measurements – as well as climate research and many other applications.

Every day, without knowing it, people use technology that depends upon precise geodetic measurements.

Observations and measurements are at the heart of geodesy. Measurements of the static Earth aimed at understanding its size, shape, and motion have been made for many centuries, earning geodesy the sobriquet of "oldest Earth science." In the last half-century, space techniques using extraterrestrial components and measurements have revolutionized the research and applications of geodesy, hence the term "space geodesy." Space geodetic observations are used today to measure global, regional, and local crustal deformation and gravity variability associated with a wide variety of geophysical processes; to investigate mass motions inherent in the global water cycle; to monitor atmospheric water vapor and temperature; to study the dynamics and kinematics of glaciers and ice sheets; and to study changes in the planet's moment of inertia and rotation. Due to the wide application of space geodetic observations, space geodesy has today become the most interdisciplinary branch in all of the geophysics.

Many organizations use geodesy to map the shoreline, determine land boundaries, and improve transportation and navigation safety. To measure points on the Earth's surface, geodesists assign coordinates (similar to a unique address) to points all over the Earth. In the past, geodesists determined the coordinates of points by using Earthbased surveying tools to measure the distances between points. Today, geodesists use space-based tools like the Global Positioning System (GPS) to measure points on the Earth's surface.

Geodesists must accurately define the coordinates of points on the surface of the Earth in a consistent manner. A set of accurately measured points is the basis for the National Spatial Reference System, which allows different kinds of maps to be consistent with one another. To measure the Earth, geodesists build simple mathematical models of the Earth which capture the largest, most obvious features. Geodesists have adopted the ellipsoid as the most basic model of the Earth. Because the ellipsoid is based on a very simple mathematical model, it can be completely smooth and does not include any mountains or valleys. When additional detail of the Earth is needed, geodesists use the geoid. A geoid has a shape very similar to global mean sea level, but this exists over the whole globe, not just over the oceans.

**III. Find one synonym to the first word in each row.**

1. investigate - own - find - explore
2. essential - minor - crucial - terrifying
3. boundary - scope - shadow - border
4. capture - apply - research - catch
5. measure - assign - use - evaluate
6. extraterrestrial - similar - ethereal - depend
7. point - glacier - rotation - place

**IV. Find the suitable meaning to each of the words.**

1. accurately
2. sobriquet
3. surveying tools
4. ice sheet
5. surface
6. ellipsoid

7. smooth

a) continental-scale masses of ice that rest on land
b) having an even and regular surface
c) closed surface of which all plane cross sections are either ellipses or circles
d) in a way that is correct, exact, and without any mistakes
e) the exterior or upper boundary of an object or body
f) instruments for calculating the angles and the distances between points
g) typically a familiar name used in place of a real name without the need of explanation

**V. Complete the following sentences.**

1. Geodesy is the science of accurately measuring and understanding_____.
2. This field of study dates back to _____.
3. Today, geodesy is essential for _____.
4. Observations and measurements are at the heart of _____.
5. Measurements of the static Earth aimed at understanding its _____.
6. The ellipsoid can be completely smooth and does not include any mountains or _____.
7. When additional detail of the Earth is needed, geodesists use_____.

Possible answers: size, shape, and motion; geodesy; the Earth's geometric shape; valleys; the geoid; ancient Greece; modern navigation.

**VI. Insert the missed parts of the sentences.**

1. Eratosthenes measured _____of the earth using shadows.
2. People use technology that depends upon _____ geodetic measurements.
3. Geodesy earned the sobriquet of "_____ science."
4. Space techniques use _____ components and measurements.
5. Space geodetic observations are used today to measure global, regional, and local _____deformation.
6. Geodesists must accurately define the coordinates of points on the surface of the Earth in _____ manner.
7. A set of accurately measured _____ is the basis for the National Spatial Reference System.

Possible answers: precise; crustal; oldest Earth; a consistent; points; the circumference; extraterrestrial.

**VII. Answer the following questions.**

1. What is geodesy?
2. Where the field of geodesy dates back to?
3. What is essential for modern navigation?
4. Observations and measurements are at the heart of geodesy, aren't they?
5. What is the application of space geodetic observations today?
6. Which tools the geodesists of the past used to determine the coordinates of points?
7. What is the shape of the geoid?
8. Many organizations use geodesy to map the U.S. shoreline, determine land boundaries, don't they?

**VIII. Share your point of view on "What is the importance of geodesy in the modern world?" Imagine our live without geodesy as a science. How it would be?**

# MODERN DIRECTIONS OF GEODESY

**I. Pronounce the following words correctly and learn their meanings.**

1. allow [ə'lau] - позволять, разрешать
2. represent [ˌreprɪ'zent] - изображать; представлять
3. precision [prɪ'sɪʒ(ə)n] - точность
4. division [dɪ'vɪʒ(ə)n] - деление, разделение
5. consider [kən'sɪdə] - рассматривать, обсуждать
6. survey ['sɜːveɪ] - обзор, опрос
7. distribute [dɪ'strɪbjuːt] - распределять
8. satellite ['sæt(ə)laɪt] - передавать по спутниковой связи
9. investigate [ɪn'vestɪgeɪt] - изучать, исследовать
10. temporal ['temp(ə)r(ə)l] - временной
11. fluctuation [ˌflʌkʧu'eɪʃ(ə)n] - качание, колыхание
12. ongoing ['ɔnˌgəuɪŋ] - непрерывный, постоянный
13. observable [əb'zɜːvəbl] - наблюдаемый
14. feature ['fiːʧə] - особенность, черта
15. dimension [daɪ'men(t)ʃ(ə)n] - размеры, величина

**II. Read and translate the text.**

In recent years there has been the development of a set of disciplines called geodetic sciences, which allow measuring, representing and analyzing geographic space with high precision. These sciences are Cartography (the oldest), Topography, Position Astronomy, Photogrammetry, Remote Sensing and Geodesy.

The term geodesy was first used in Ancient Greece, by Aristotle, and means geographical divisions of the earth, or the act of dividing the earth.

It is considered at the same time a branch of Engineering and Geosciences, which deals with the survey and representation of the shape and surface of the Earth. Mathematics and physics also study geodesy, as a way to determine the measurement of curved surfaces, using methods similar to those used on the curved surface of the Earth. We can divide geodesy into two major branches:

- Superior Geodesy or Theoretical Geodesy

It's divided between physical and mathematical geodesy, tries to determine and represent the figure of the Earth in global terms.

The research of the working group of Theoretical Geodesy is mainly focused on the areas of analytical and numerical techniques as basis for Theoretical Geodesy applications. Particularly, the processing of globally distributed satellite data to determine Earth's gravity is a priority objective.

In addition, the working group is also investigating the temporal changes in Earth's gravity, which are caused by mass transport due to ocean tides, sea level changes, or groundwater fluctuations. The aim of the working group is the linking of scientific knowledge from highly accurate (satellite) data of gravity field missions with the ongoing research activities in other geosciences such as oceanography, hydrology, glaciology and geophysics. The observable and measurable mass variations of the gravity field of the Earth System are of essential importance for various kinds of geophysical processes and can be directly linked to parameters of the Earth's climate.

- Lower Geodesy, Practice or Topography

Topography is the study and description of the physical features of an area, for ex-

ample its hills, valleys, or rivers, or the representation of these features on maps.

Is the part that studies and represents smaller portions of the Earth where the surface can be considered “flat”.

If we are based on the study of the earth, according to a mathematical concept, geodesy studies both the shape and the dimensions of the earth, however, according to the definition of the concept of geodesy, the field of gravity and its temporal variations are also studied. These last two concepts are within the field of physics.

**III. Complete the following sentences.**

1. The development of geodetic sciences allows measuring, representing and analyzing geographic space with high_____.
2. The term geodesy was first used in Ancient Greece, by_____.
3. We can divide geodesy into two major branches_____.
4. A priority objective to determining the Earth's gravity is_____.
5. They are caused by mass transport due to ocean tides, sea level changes, or groundwater _____.
6. Topography is the study and description of the physical_____.
7. Is the part that studies and represents smaller portions of the Earth where the surface can be considered _____.

Possible answers: “flat”; superior and topography geodesy; precision; the processing of globally distributed satellite data; Aristotle; fluctuations; features.

**IV. Find the synonym to the first word in each row.**

1. allow – prevent – enable – forget
2. represent – hide – devide – portray
3. survey – subject – feature – poll
4. distribute – allocate – halt – investigate
5. satellite – detain – spread – restore
6. ongoing – abandoned – temporal – current
7. fluctuation – precision – feature – instability

**V. Find the suitable meaning to each of the words.**

1. precision
2. consider
3. survey
4. investigate
5. observable
6. feature
7. division

a) look closely at or examine someone/something
b) a distinctive attribute or aspect of something
c) adapted for extremely accurate measurement or operation
d) capable of being observed; noticeable; visible
e) the action of separating something into parts or the process of being separated
f) to observe or study by close examination and systematic inquiry
g) think carefully about something, typically before making a decision

**VI. Insert the missed prepositions in each sentence.**

1. In recent years there has been the development ___a set __disciplines called geodetic sciences.
2. Mathematics and physics also study geodesy, using methods similar ___those used on the curved surface ___ the Earth.
3. If we are based ___ the study ___ the earth, according ___a mathematical concept, geodesy studies both the shape and the dimensions ___ the earth.
4. It is considered at the same time a branch of Engineering and Geosciences, which deals ___ the survey and representation ___ the shape and surface __ the Earth.
5. The research __ the working group __Theoretical Geodesy is mainly focused __the areas __ analytical and numerical techniques as basis __Theoretical Geodesy applications.
6. We can divide geodesy ___ two major branches.
7. The observable and measurable mass variations __ the gravity field __ the Earth System are of essential importance __ various kinds __ geophysical processes and can be directly linked __ parameters __ the Earth's climate.
8. The working group is also investigating the temporal changes __ Earth's gravity, which are caused __ mass transport due __ocean tides, sea level changes, or groundwater fluctuations.

Variants of possible answers: of; in; by; with; for; into; to; on

**VII. Answer the following questions.**

1. What geodetic sciences allow us to do?
2. Which geodetic sciences do you know?
3. Mathematics and physics also study geodesy, don't they?
4. Which branches of geodesy do you know?
5. The research of the working group of Theoretical Geodesy is mainly focused on the areas of analytical and numerical techniques, isn't it?
6. What is the priority objective of theoretical geodesy?
7. What is the notion of topography?
8. Geodesy studies both the shape and the dimensions of the earth, doesn't it?

**VIII. Make a plan "Modern Directions of Geodesy" and report to your groupmates.**

## 2.2. SOURCES OF WATER

## SOURCES OF WATER

**I. Read and translate the text. Use a dictionary if necessary.**

In practice, there are four general sources of water available to man: surface water, ground water atmospheric water and the oceans. The most important of these is surface water in the form of rivers, streams and lakes. Of the other three sources, ground water is increasing rapidly in importance, particularly in those areas which lack surface drainage. The use of pure water derived artificially from the atmosphere and the oceans may become significant if and when technological advances make it available on a sufficiently large scale and at an economic cost.

Ground water or, as it is sometimes called, underground water occurs below the surface of the ground in a zone of saturation, that is, the zone in which permeable rocks are saturated with water under hydrostatic pressure. Water moves down from the surface by

gravity to enter this zone, the upper surface of which is called the water-table or phreatic surface; for this reason, ground water is sometimes called phreatic, subsurface or subterranean water. The lower limit of the zone is the point at which the underlying rock formation becomes so dense that water cannot penetrate it. It may vary in depth from a few feet to hundreds of feet and there are isolated examples or porous rock having been found at depths of more than a mile. The zone of saturation is very important because it supplies all wells and maintains the normal, relatively uniform flow of streams. It acts as a gigantic reservoir which retains water during wet periods, causing a rise in the water-table.

Ground water has been laid down very unevenly beneath the surface and moves towards the oceans like surface water, only much more slowly.

The chief uses of ground water are for irrigation and domestic purposes. It is of no direct importance for the generation of hydroelectricity but of considerable indirect importance in the flow of streams is primarily sustained by it.

Atmospheric water, or water vapour, has two major advantages over water contained in the oceans: it is to be found everywhere above the surface and it is free of salt. Unfortunately, no large-scale, successful, economic method has yet been devised to trip this water-supply and direct it to places where it is most needed. One serious initial obstacle lies in the fact that clouds are not necessarily water-bearing and may be dry. If, however, they do contain appreciable amounts of water vapour, this may either dry out or condense and fall as rain or snow. The most that we have been able to do is to cause a particular humid cloud – one that would almost certainly sooner or later have precipitated – to shed its moisture at a time and place of our choosing.

This is achieved in one or two ways. The first method involves the "seeding" of clouds from aeroplanes or rockets with small particles of various chemicals, which cause water-droplets to form and precipitation to take place. The second method is to create artificial convection currents by heating a large air mass near the ground. The air thereupon rises rapidly into the cloud, upsets the equilibrium, and causes precipitation. Some local successes have been achieved by these methods, but both are expensive and both depend upon the presence of water-filled clouds.

The oceans remain by far the largest potential source of water and together with the island seas contain 92.7 per cent of the earth's water. This water could be made potable if its saline content were reduced from about 35,000 parts per million to 500 parts per million or less. We have known for a long time that it is possible to produce fresh water by heating salt water and so promoting distillation. It is only recently, however, that such processes have been developed on a large scale.

Each of these processes depends upon the use of energy, which may be thermal, mechanical or solar. They each suffer from the disadvantage that the cost of desalination is very high.

It is clear therefore that although a great deal of water is available for use by man, the supply is not infinite. While it is likely that the quantity of usable water will be increased by desalination and the creation of artificial precipitation, it is certain that for some time to come the greater proportion of our water supply will be derived primarily from surface runoff and to a lesser extent from subterranean sources.

Water is put to a great variety of uses: for irrigating crops, for the generation of hydroelectricity, for canals and water ways, for controlling pollution and as a source of food. All these uses are interdependent. For example, the construct ion of a modern dam promotes irrigation, the generation of hydroelectricity, flood control and recreation. Frequent-

ly, however, the uses of such natural resources as water may be mutually exclusive and a choice must sometimes be made between one use and another.

**II. Match the words with their Russian equivalents.**

| | |
|---|---|
| 1. equilibrium | a. сеять, засевать |
| 2. irrigation | b. орошение, ирригация |
| 3. drainage | c. пористый |
| 4. to derive | d. испарение |
| 5. significant | e. сток |
| 6. surface water | f. сила притяжения |
| 7. ground water | g. существенный |
| 8. saturation | h. водоснабжение |
| 9. permeable | i. равновесие, баланс |
| 10. gravity | j. опреснение воды |
| 11. humid | k. происходить, брать начало |
| 12. precipitation | l. насыщение; фильтрация |
| 13. vapour | m. грунтовые воды |
| 14. porous | n. выпадение осадков |
| 15. to upset | o. проницаемый |
| 16. runoff | p. влажный, сырой |
| 17. desalination | q. поверхностные воды |
| 18. to seed | r. водоносный |
| 19. water-supply | s. осушение |
| 20. water-bearing | t. нарушать |

**III. Read and translate the followinginternational words.**

gigantic, reservoir, atmosphere, general, zone, form, the process of distillation, in practice, chemicals, drainage, method, energy, thermal, hydrostatic, isolation, dam, convection, period

**IV. Translate the following words into Russian.**

a) interdependent process, subsurface water; underlying rock; uneven surface, water filled clouds; water-bearing layers; usable water; infinite process; to a lesser extent; desalinized water

b) significant, artificial, sufficient, successful, significantly, initially, sufficiently, successfully, artificially, initial, particularly, particular, considerably, fortunate, appreciably, considerable, appreciable, fortunately

**V. Match the words similar inmeaning.**

| | |
|---|---|
| A.rapidly | B. subterranean water |
| water-table | to support |
| humid | important |
| to involve | to make |
| to maintain | to break |
| to produce | to include |
| zone | to invent |
| to upset | moist |
| significant | quickly |

| | |
|---|---|
| to devise | phreatic surface |
| ground water | area |

**VI. Match possible word combinations with the words from columns A и B.**

| A. | B. |
|---|---|
| interdependent | process |
| subsurface | clouds |
| uneven | runoff |
| artificial | energy |
| humid | vapour |
| water | resources |
| solar | precipitation |
| natural | water |
| surface | surface |

**VII. a) Find the adjective opposite in meaning to the words in the first column.**
**b) Find the noun that can be used with both of them.**

Model:

| Adjective | Opposite | Noun |
|---|---|---|
| high | low | cost |

| Adjective | Opposite | Noun |
|---|---|---|
| ground | large | scale |
| gigantic | dry | methods |
| wet | small | water |
| dry | saline | cost |
| artificial | water-bearing | periods |
| high | finite | resources |
| dense | natural | reservoir |
| expensive | porous | clouds |
| small | surface | rock formation |
| free of salt | cheap | precipitation |
| infinite | low | |

**VIII. Match the words and their definitions.**

| | |
|---|---|
| 1. the most important source of water | a. energy |
| 2. the upper surface of the zone of saturation | b. distillation |
| 3. a gigantic reservoir which supplies all wells and maintains the normal flow of streams | c. water-table |
| 4. the largest potential source of water | d. ground water |
| 5. it may be thermal, solar or mechanical | e. the oceans |
| 6. heating salt water to produce fresh water | f. surface water |

**IX. Say if the following statements are true or false.**

1. There are four sources of water available to man.
2. The importance of ground water is increasing rapidly in humid regions.

3. Surface water is sometimes called phreatic water.

4. The lower limit of the zone of saturation is the point at which the underlying rock formation becomes porous and water can easily penetrate it.

5. Surface water moves towards the oceans much more quickly than ground water.

6. The "seeding" of clouds with salt causes water-droplets to form and precipitation to take place.

7. Artificial convection currents can be created by heating a large water mass in the oceans.

8. Fresh water can be produced by desalination.

**X. Ask your groupmates and let them answer.**

1) how many sources available to man exist;

2) what surface (ground, atmospheric) water is;

3) if water can't penetrate the underlying rock formation in the lower limit of the zone of saturation;

4) where water is saturated with permeable rocks;

5) what supplies all wells and maintains the normal flow of streams;

6) if causing a humid cloud can be achieved in two or four ways;

7) what the process of desalination means;

8) what he / she knows about advantages and disadvantages of the methods of increasing the quantity of usable water.

**XI. Make a summary of the text "Sources of Water".**

## THE SUPPLY OF WATER

**I. Read and translate the text.**

The total amount of water contained in our planet is constant and invariable and can neither be increased nor diminished. It assumes a variety of forms, such as the oceans, moisture vapour, fresh water, lake water of varying degrees of salinity, and ice. As most of this water is locked away in the oceans, in snow fields, ice caps and glaciers, only a small proportion is available in a form readily usable by man. Moreover, a great deal of the water in and on the land is polluted by minerals or by industrial waste and so frequently rendered unusable.

Of the water contained in the oceans, a very small proportion daily changes its form and composition and is moved to the land, where it can be used by man and from where it returns to the oceans. This process, which has no beginning and no end, is known as the hydrologic cycle. It comprises a gigantic system operating in and on the land and oceans of the earth and in the atmosphere surrounding it. It is estimated that something like 80,000 cubic miles of water are evaporated each year from the oceans, together with approximately 15,000 cubic miles of water evaporated from the lakes, rivers, canals and land surfaces of the continents. This total global evaporation is exactly balanced by the total precipitation, of which approximately 24,000 cubic miles in the form of waterfall on the land surfaces and the rest on the oceans. This cyclical movement of water is divisible into three main stages. Firstly, solar radiation, acting upon the surface of the oceans, heats the surface layers and causes evaporation and the diffusion of water vapour upwards into the atmosphere.

The water vapour, which at this stage is pure, is then transported great distances by the winds. During its movement across the oceans and over the land, it may become pollut-

ed in a variety of ways: by atmospheric dust, by particles of radio-active material or by industrial and domestic smoke and soot.

In the second stage of the cycle, the air masses containing the water vapour are suddenly cooled. This cooling, which may occur for a number of reasons, though primarily as a result of the air masses being forced to rise over high ground, causes condensation to take place and rain or snow to be precipitated. Of this precipitation, some falls directly into the oceans, out of man's reach and some is too heavily polluted to be usable.

The third and final stage is that in which the water moves back, over and under the land, into the oceans from which it came of the water which falls upon the land, some flows over the surface, some sinks into the soil, and some is taken up by the roots of vegetation to be used by plants and subsequently released into the atmosphere by transpiration. If, for example, an average of thirty inches of rainfall reaches the land surface each year, approximately twenty-one inches will evaporate directly or be transpired by vegetation. Of the remaining nine inches, most will run directly to the oceans as surface runoff or permeate the rock materials beneath the surface to form underground water and, at a later stage, indirectly reach the oceans. Water which began in the oceans sooner or later returns to them. The only stage in the cycle at which man can, at present, intervene and make use of the water on a large scale is the third, and only then if the water is comparatively pure.

**II. Match the words with their Russian equivalents.**

| | |
|---|---|
| 1. glacier | a. проникнуть, просочиться |
| 2. to evaporate | b. впитываться |
| 3. precipitation | c. испарение |
| 4. waterfall | d. сток |
| 5. to sink into | e. ледник |
| 6. hydrologic cycle | f. впитывать, поглощать |
| 7. transpiration | g. испаряться |
| 8. rainfall | h. выпадение осадков |
| 9. runoff | i. водопад |
| 10. to permeate | j. количество осадков |
| 11. to intervene | k. вмешиваться |
| 12. to take up | l. круговорот воды в природе |
| 13. industrial waste | m. минерализация, соленость |
| 14. salinity | n. промышленные сточные воды |

**III. Read and translate the following word combinations.**

the **total** amount; **minerals** of our **planet**; **hydrological cycle**; solar **radiation**; **diffusion** of water; **radio-active material**; **industrial** smoke; the **stages** of the cycle; **atmospheric** dust; **global** evaporation; **final** stage; **gigantic system**; to **balance** condensation; the **ocean** of air

**IV. Find synonyms.**

to take place, to return, to occur, to come back, to cause, to comprise, to use, to make use of, to involve, to force, average, upwards, under, beneath, downward, part, upward, downwards, the rest, proportion, the remainder, quantity, mean, amount

**V. Find antonyms.**

to increase, little, pure, rarely, usable, to cool, approximately, condensation, to fall, initial, to condensate, beginning, sooner, gradually

**VI. Read the definitions and say what words are meant.**

1. total measurable supply of water of all forms of falling moisture;
2. total precipitation that appears in natural or artificial surface streams

**VII. Arrange the nouns in the order corresponding to the hydrological cycle.**

runoff; precipitation; evaporation; infiltration and ground water; stream flow; reprecipitation

**VIII. Ask 6 questions to the text "The Supply of Water". Let your groupmates answer them.**

**IX. Make up a plan of the text.**

**X. Read and translate the text.**

*Answer the question:* "Why is the knowledge of hydrology necessary for reclamation engineers?"

Hydrology is science dealing with waters of the earth in rivers, streams, lakes, in or below the land surface, in the atmosphere in all its states – their occurrence, distribution and circulation through the unending hydrologic cycle of precipitation, consequent runoff, stream flow, infiltration and ground water, evaporation and reprecipitation. It is concerned with the physical, chemical and physiological reactions of the water with the rest of the earth and its relation to the life of the earth.

## STORAGE AND DISTRIBUTION OF WATER FOR IRRIGATION

**I. Read and translate the text.**

The regime of most great rivers is irregular. Frequently they carry their greatest volumes of water in spring and in late autumn and winter, they may be reduced to mere trickles of water. To control these rivers and to regularize their regimes by storing water in the dry seasons, dam and reservoirs are constructed.

Dams, known also as barrages and weirs are barriers built across rivers or streams to control the flow of water. Today most dams have several functions, which may include the storage and diversion of water for irrigation, the raising of water for generating hydroelectricity, and the provision of flood control. Dams have been constructed for thousands of years, at first of earth and later of stone.

Sometimes the source of water may be lower than the area to be irrigated, especially if the river runs in a canyon, and the water itself often has to be transported considerable distances from the river to the fields. In such cases, complex systems of pumping stations and canals may be necessary to lift and move the water from the reservoir to the fields.

A large-scale system of irrigation requires a complex network of dams, pumping stations and canals. In addition to the main dam, whose reservoir is the main storage unit, smaller diversion dams are needed to direct the water into an intricate canal system. The water is led from the dams into broad canals by gravity, and where these major canals, because of local physical conditions, are unable to receive their required water by gravity, pumping stations may be installed. These plants frequently receive their power from energy generated from power stations at the main storage dam.

From the main canals, water is diverted into a system which will distribute it throughout the farm. The most common means by which this is done is with open ditches or laterals, and the flow of water into them is controlled by head gates or regulators. They are frequently earth ditches, which may suffer from excessive losses owing to seepage and evaporation, especially in arid regions or in areas of porous, sandy or gravelly soils. To eliminate such wastage, the use of tubing in place of open ditches to carry water from the canal to the land has recently been introduced. Tubing also prevents the loss of land otherwise used for ditches.

Leading from the permanent open ditches are secondary or field ditches. They are ploughed in at the end of the growing season, as they would otherwise act as obstacles during harvesting. Water is delivered from these ditches to the areas to be irrigated by means of check structures or turn-outs. Increasingly, however, water is being transferred from the ditch over the ditch bank into individual fields or furrows by means of siphons. These may be plastic, metal or rubber, and depending upon the size and volume of the water supply, may have flow capacities from as little as one gallon per minute to over 1,000 gallons per minute.

A very efficient way of conveying and distributing irrigation water is by means of pipelines. This method has many advantages: it practically eliminates losses due to evaporation and seepage; it reduces maintenance work, makes water control easier, eliminates the problem of weeds which grow along the banks of the open ditches, and makes it possible for water to be carried by gravity or under pressure.

Such pipelines may be permanent installations or portable. The former usually consists of buried concrete supply and distribution lines, while the latter consists of metal or flexible surface pipes. Because of the very high cost of installation, however, pipelines are still relatively uncommon, and they are generally found in areas where water is scarce and crops are valuable.

**II. Match the words with their Russian equivalents.**

| | |
|---|---|
| 1. flood | a. ров, канава; открытая дрена |
| 2. trickle | b. трубопровод |
| 3. open ditch | c. отвод, отклонение; забор воды |
| 4. lateral | d. просачивание, течь; фильтрация |
| 5. to convey | e. боковой канал; отвод |
| 6. seepage | f. борозда, жёлоб; канава |
| 7. furrow | g. переправлять, доставлять по трубам |
| 8. pipeline | h. струйка |
| 9. head gate | i. паводок, наводнение; поток |
| 10. diversion | j. насосная станция |
| 11. pumping station | k. водохранилище |
| 12. storage unit | l. шлюз-регулятор |

**III. Read and translate the following word combinations.**

regular, irregular, regularize, regime, barrier, control, canyon, function, generation, to generate, siphon, concrete, to concrete, regulator, to regulate, regulation, structure, problem, gallon, complex, plastic, to list

**IV. Read and translate the following words.**

1) distant, important, permanent, dependent, efficient, different;

2) recently, considerably, frequently, practically, increasingly;
3) storage, seepage, wastage, advantage;
4) provision, diversion, erosion;
5) primary, necessary, secondary;
6) regularize, modernize, mechanize

**V. Translate into English.**

дамба, орошение, насосная станция, водоснабжение, испарение, чрезмерный, объем, преимущество, сокращать, сорняки, установка, скудный, предотвращать, почва, состоять из

**VI. Read and translate the following sentences with the Infinitive.**

1. To control these rivers and to regularize their regimes by storing water in the dry seasons, dam and reservoirs are constructed.
2. Sometimes the source of water may be lower than the area to be irrigated, especially if the river runs in a canyon, and the water itself often has to be transported considerable distances from the river to the fields.
3. To eliminate such wastage, the use of tubing in place of open ditches to carry water from the canal to the land has recently been introduced.
4. In addition to the main dam, whose reservoir is the main storage unit, smaller diversion dams are needed to direct the water into an intricate canal system.
5. Water is delivered from these ditches to the areas to be irrigated by means of check structures or turn-outs.
6. This method makes it possible for water to be carried by gravity or under pressure.

**VII. Answer the questions.**

1. What are the main functions of dams?
2. What purposes are dams constructed for?
3. What does a large-scale system of irrigation require?
4. What are the advantages of conveying and distributing irrigation water by means of pipelines?
5. What do pipelines consist of?

**VIII. Reproduce the contentents of the text.**

## WATER AS A NATURAL RESOURCE

**I. Pronounce the following words correctly and learn their meanings.**

1. glacier – ледник
2. to absorb – поглощать
3. capillarity – капиллярная система
4. circulation – циркуляция, распространение, круговорот
5. to evaporate – испарять(ся)
6. evaporation – испарение
7. to fall – падать, выпадать
8. ground water – грунтовые воды
9. to penetrate – проникать, пробивать

penetration – проникновение, распространение, проницаемость
10. plant root – корень растения
11. pores – поры
12. rainfall – дождь, количество атмосферных осадков, ливень
13. to run off – стекать, сбегать
14. to sink – оседать, проходить, проникать, впитывать(ся)
15. soil – почва
16. stream – ручей, поток, струя, течение
17. to vary – варьировать(ся), отличать(ся)

**II. Read and translate the text.**

Water seems the most renewable of all the Earth's resources. It falls from the sky as rain it surrounds us in the oceans that cover nearly three-quarters of the planet's surface and in the polar ice caps and mountain glaciers. It is the source of life on Earth.

The most significant use of water is to produce hydropower by harnessing its energy. Compared to other resources that are used to produce energy and power water is considered renewable as well as having the least solid waste during energy production.

About 97% of all water is salt (saline) water of the oceans, and the remaining 3% is fresh water. The majority of fresh water, about 69%, is locked up in polar glaciers and icecaps, mainly of Greenland and Antarctica; and the rest is ground water. No matter where on Earth we stand, chances are that, at some depth, the ground below is saturated with water. Of all the fresh water on Earth, only about 0.3% is contained in rivers and lakes, known as surface water. Considering that most of the water we use in everyday life comes from rivers, we make use of a tiny portion of the available water supplies.

As for ground water, this is the water contained underground in the pores of soil and rock. When rain falls on the earth some evaporates, some is absorbed by plants, some runs off in streams and the remainder sinks into the earth to become ground water.

The amount that sinks into the ground depends on various factors. It is much to the point to inquire how much of the rainfall soaks into the ground, how much evaporates, how much is used by plant life, and how much runs off into the streams. It is certain that there is water in the ground in some places and there are good reasons to suppose that water may penetrate the rocks to a depth of a dozen miles.

The total amount of water varies greatly from place to place, and even from time to time in the same place.

Water which sinks into the earth moves not merely downward, but sideways and even back to the surface. Thus, there is a sort of circulation of underground water which is kept up fundamentally by gravity, and assisted by such agencies as capillarity and plant roots.

**III. Match the words from column A with their definitions from column B.**

| A | B |
|---|---|
| 1. to absorb | a. water that flows naturally along a fixed route formed by a canal cut into rock or ground, usually at ground level; |
| 2. stream | b. the movement of air or water in a space or system; |
| 3. capillarity | c. the material on the surface of the ground in which plants grow; |
| 4. soil | d. the process of a liquid changing to a gas, especially by |

| | |
|---|---|
| | heating; |
| 5. circulation | e. to flow, especially in a steady stream; |
| 6. to sink | f. underground water that is held in the soil and rocks; |
| 7. evaporation | g. the ability of a liquid to move through a second liquid due to attraction; |
| 8. to run off | h. to move into or through something; |
| 9. ground water | i. to take in a liquid, gas, or chemical; |
| 10. to penetrate | j. to go down below the surface or to the bottom of a liquid or soft substance. |

**IV. Decide if the following statements are true or false.**

1. Water is a non-renewable resource on the Earth.
2. The most significant use of water is to produce hydropower by harnessing its energy.
3. Ground water is the water contained underground in the pores of soil and rock.
4. Water cannot penetrate the rocks to a depth of a dozen miles.
5. The total amount of water doesn't vary greatly from time to time.
6. There is a sort of circulation of underground water which is kept up fundamentally by gravity.

**V. Fill in the gaps using the words from task 3 (column A). Change the form if necessary.**

1. These toxins can … food and cause health problems.
2. Water resources – surface and … water used or can be used in economic activities.
3. Physical properties such as density or texture cannot … infrared light either.
4. This technique stops the vertical … that forms in the soil during dry periods.
5. The thin water … that travels at high speed cuts the material quickly.
6. At lower temperatures, … is typically too slow to be noticed.
7. The stones were laid at a slight angle, lower on the outside than the inside to allow water to … … .
8. There is a natural water … which consists of natural movement and mixing of water.
9. Restoring … lost by erosion is slow.
10. The diver could inflate or deflate the balloon so that they could … or come to the surface easily.

**VI. Answer the following questions according to the text.**

1. What is ground water?
2. What happens to the rain water when it reaches the ground?
3. In what direction does water move when it sinks into the earth?
4. What agencies make the circulation of ground water possible?

**VII. Make a summary of the text (see task 2).**

## THE WATER (HYDROLOGIC) CYCLE

**I. Pronounce the following words correctly and learn their meanings.**

1. hydrosphere /ˈhaɪ.drəʊ.sfɪə/ – гидросфера
2. hydrological cycle / water cycle /ˌhaɪ.drəˈlɒdʒ.ɪ.kəl ˈsaɪ.kəl/ – гидрологический цикл
3. to condense – конденсировать(ся), сжимать

4. condensation – конденсация, конденсат
5. water vapor – водяной пар
6. to infiltrate – просочиться, проникнуть
7. infiltration – инфильтрация, просачивание
8. runoff – сток
9. to seep – просачиваться, проникать
10. seepage – просачивание, утечка, инфильтрация
11. to soak – впитывать(ся)
12. soakage – просачивание
13. to solidify – затвердевать, застыть, укреплять
14. solidification – затвердевание, застывание, кристаллизация
15. solid – твердый, прочный
16. transpiration – транспирация, испарение
17. to transport – транспортировать, переносить
18. transportation – транспортирование, перемещение
19. drinking water – питьевая вода
20. fresh water – пресная вода
21. to be composed of – состоять из
22. to include – включать в себя
23. moist – влажный, сырой, мокрый
24. moisture – влага, влажность, сырость
25. ongoing – постоянный, непрерывный

**II. Read the text.**

The hydrosphere is composed of all of the water on or near the earth. The total stock of it is approximately 1400 million $km^3$. This includes all forms of water in the oceans, rivers, lakes, and even the moisture in the air. Ninety-seven percent of the earth's water is in the oceans while the remaining three percent is fresh water for which three-quarters of the fresh water is solid and exists in ice sheets.

The water cycle, also known as the hydrological cycle, describes the continuous movement of water on, above and below the surface of the Earth. It includes the processes of evaporation, condensation, precipitation, infiltration, runoff, and subsurface flow.

Solar radiation provides the necessary energy for evaporation of water from the surface of the ocean. As moist air is lifted, it cools and water vapor condenses to form clouds. Moisture is transported around the globe until it returns to the surface as precipitation. Once the water reaches the ground, some of the water returns rather rapidly to the atmosphere by evaporation or transpiration from plants. The remainder either flows over the land surface as runoff in streams, or soaks into the ground by infiltration to form groundwater. Groundwater either seeps its way to into the oceans, rivers, and streams, or is released back into the atmosphere through transpiration. Groundwater is the second largest reserve of fresh water (0.76%) after glacial ice (1.76%), and represents an important source of drinking water along with surface water from streams and lakes (0.14%). Finally, most water eventually reaches the ocean, where ongoing evaporation completes the cycle.

Water on the Earth is constantly on the move, recycling over and over again. This process proves the necessity of every person to take responsibility for saving the most precious resource - water - for the future generations.

**III. Match the terms with their definitions.**

1. evaporation
2. condensation
3. precipitation
4. infiltration
5. runoff
6. transpiration

a) It's the process where water vapors change into very tiny particles of ice/water droplets.
b) It's the process of water movement through a plant and its evaporation from aerial parts, such as leaves, stems and flowers.
c) It's the process of a substance in a liquid state changing to a gaseous state due to an increase in temperature and/or pressure.
d) It's the process by which water soaks into subsurface soils and moves into rocks through cracks and pore spaces.
e) It's the process where water runs over the surface of earth.
f) It's the falling of water from the sky in different forms.

**IV. State what part of speech the following words belong to and translate them into Russian.**

vapor – evaporate – evaporation – evaporating – evaporated;
solid – solidify – solidification;
transport – transportation – transporting – transported;
condense – condenser – condensation – condensed;
infiltrate – infiltrated – infiltration;
form – formed – forming – formation;
deposit – deposition – deposited – depositional;
penetrate – penetration – penetrating;
seep - seepage – seeping;
soak – soakage – soaking.

**V. Translate the following sentences paying attention to the words ending in –ed. Define their role in the sentences.**

1. In time, a layer of sediment *deposited* on the sea floor becomes buried under another layer. 2. Sediment is *deposited* when the transporting agent loses its carrying power. 3. The dark-colored country rock is shale *deposited* in a marine environment. 4. The igneous rock, being out of equilibrium, may then undergo weathering and erosion, and the debris *produced* is *transported* and *deposited* (usually on a sea floor) as sediment. 5. Weathering products *transported* to the sea by rivers as dissolved solids make seawater salty and serve as nutrients for many marine organisms. 6. *Transported* soils do not develop from locally *formed* rock. 7. Because of wetter climate in the past, large lakes *formed* in now arid regions of the United States. 8. Wind from the Gobi Desert carried the silt and clay that *formed* these deposits. 9. A striking but rare feature *formed* by long shore drift is a tombolo, a bar of sediment connecting a former island to the mainland. 10. Transportation is the movement of *eroded* particles by agents such as rivers, waves, glaciers, or wind. 11. Finally, the stream (the Colorado River) *eroded* its way through the rock, carving the Grand Canyon. 12. Rock debris *eroded* from above covers red beds (*красноцветные отложения)*.13. Fiords are evidence that valleys

*eroded* by past glaciers were later partly submerged by rising sea level. 14. Sedimentary rocks are *formed* from *eroded* mineral grains, minerals *precipitated* from lowtemperature solution, or consolidation of the organic remains of plants. 15. As the water evaporates beneath the land surface, salts are *precipitated* within the soil. 16. Tsunami *generated* by submarine earthquakes may cause tremendous damage to the coastal environment. 17. An earthquake is a trembling or shaking of the ground *caused* by the sudden release of energy *stored* in the rocks beneath Earth's surface.

**VI. Answer the questions.**

1. What is the hydrosphere?
2. What percentage of the earth's water is salt water and fresh water?
3. What are the main steps of the water cycle?
4. What is the role of plants in the water cycle?
5. *Which process is the most important component in the water cycle?
6. *Can we influence the water cycle for benefit of human being?

**VII. Describe the water cycle.**

## HYDRAULIC STRUCTURES
## FROM THE HISTORY OF DAM CONSTRUCTION

**I. Pronounce the following words correctly and learn their meanings.**

1. to harness – использовать, задействовать, запрягать
2. dam – дамба, плотина
3. reservoir – резервуар
4. to evolve – развивать, выделять
5. hydraulic mortar – гидравлический раствор (твердеющий в воде)
6. to percolate – просачиваться, фильтровать, проникать сквозь
7. overflow – вытекание через край, разлив
8. spillway – водослив
9. turbine – турбина
10. to utilize – использовать, утилизировать
11. durability – прочность, стойкость, длительность

**II. Read and translate the text.**

Dams have a history just as long as such branches of civil engineering as bridge building, road construction and the laying down of canals. Not only do dams represent some of the most impressive achievements of engineers over the centuries but their vital role in supplying water to towns and cities, irrigating dry lands, providing a source of power and controlling floods is more than sufficient to rank dam building among the most essential aspects of man's attempts to harness, control and improve his environment.

In antiquity dams were built as an essential part of the need to practice irrigation on which the production of food was based. It was not until the Romans came on the scene that the size of dams was increased and new uses were found, such as the application of dams to problems of flood control and protection. The most important contribution, however, was the reservoir dam which, to a large extent, was a result of the Roman's concern with the water supply to cities and towns. That they were able to build so many big dams, many of which have lasted for a very long time and survived, despite eighteen centuries of

use and neglect, was also a result of their evolving better methods of construction based on better materials, especially hydraulic mortar and concrete. Moreover, proper attention was paid to hydraulic problems to ensure that the water could not percolate through the dams and that when it overflowed them, spillways were provided.

The Industrial Revolution contributed to the further development of water resources not only for water supply purposes but also for water wheels, and, later, in the 19th century, for their logical successor-water turbines. In their mode of operation, particularly that of reaction turbines, it was a fundamentally new idea whose progress was closely linked with an improved understanding of hydrodynamics. The development of electric generators refers to the major scientific discoveries in the early part of the century, and one feature of electric power was of supreme significance, namely, that it is the only form of energy in a ready-to-use state which can be transmitted over long distances. One of the greatest advantages of a water-power station is that it utilizes an energy carrier which renews itself constantly and does not exhaust energy resources. This makes its maintenance costs relatively low.

With the discovery of a generator three separate seemingly diverse branches of engineering, those concerning dams, water turbines and electric generators, came together to found a new branch of power generation utilizing hydropower resources. All the three elements have undergone changes in the height, volume and efficiency. This progress places still greater responsibility on designers and engineers for ensuring durability and safety of the structures. The application of new devices-structural models and electronic computers-for stress analysis, research and calculations are of great help. The electronic computers handle the lengthy and time-consuming computations quickly and accurately. Model analysis, a technique for simulating the complex behaviour of a structure, a dam, for instance, promotes a reliable forecast in designing new schemes and in the transformation and modernization of the old ones to increase their efficiencies.

**III. Match the following words with their translations.**

| | |
|---|---|
| 1. близлежащий | a. water power engineer |
| 2. водонепроницаемость | b. demand for |
| 3. гидроэнергетик | c. to impound |
| 4. спрос на | d. failure |
| 5. шлюз | e. associated |
| 6. водослив | f. executed |
| 7. запруживать | g. stability |
| 8. уровень | h. go down in history |
| 9. устойчивость | i. steadily |
| 10. неуклонно | j. to withstand |
| 11. войти в историю | k. to occur |
| 12. выполненный | l. to call for |
| 13. разрушение | m. level |
| 14. связанный | n. to comprise |
| 15. происходить | o. water tightness |
| 16. требовать | p. nearby |
| 17. включать | q. spillway |
| 18. выдерживать | r. to harness |
| 19. использовать | s. lock |

**IV. Match the following words with their definitions.**

| | |
|---|---|
| 1. dam | a. to make sth certain to happen |
| 2. branch | b. a job or duty that you must do |
| 3. flood | c. to bring a good result |
| 4. application | d. very different from each other |
| 5. ensure | e. a wall built across a river to hold back the water and form a lake behind it |
| 6. contribution | f. smth that you give or do together with others |
| 7. advantage | g. one of the main parts of sth |
| 8. diverse | h. a large amount of water that covers an area which should be dry |
| 9. responsibility | i. the practical use |

**V. Fill in gaps with a suitable word below.**

*since; gorge; above; approaching; constructed; reinforced concrete; reliable; buildings; built; constructions; provide; called.*

1. It is rather astonishing that the Romans only sparsely applied the arch in dam (1) …, a design otherwise so masterfully employed in their (2) … and bridges.
2. The Mongolians built the first arch dams (3) … the Romans.
3. The first true arch dam in Europe since the Roman times was (4) … from 1632 to 1640 near Elcho Spain.
4. The La Gage dam in France and the Tolls Dam in Corsica were both made exceedingly thin in order to (5) … a full-scale check on the validity of theoretical analyses when applied to dams (6) … the ultimate degree of slenderness.
5. Vaiont Dam in Italy, the second highest dam in the world, was built across a narrow (7) … on limestone foundations so that the crest 858 feet (8) … the valley bottom was only 623 feet in length.
6. The oldest dam still in use is the Almanza Dam in Spain, which was (9) … in the sixteenth century.
7. The first (10) … slab and buttress dam was built in the USA by Nils Ambursen in 1903 and this type of dam is often (11) … an Ambursen dam.
8. The first dam for which there are his (12) … records was built on the Nile River sometime before 4000 B.C.

**VI. Decide if the statements are true or false.**

1. There is only one type of dam constructed of concrete.
2. There are five branches of civil engineering.
3. Dam building is one of man's attempts to harness, control and improve his environment.
4. The size of dams was decreased and new uses were found, such as the application of dams to problems of flood control and protection.
5. The Romans used better methods of construction based on better materials, especially stone and marble.
6. They invented a generator, three separate new branches of engineering: canals, water turbines, and computers.
7. Thanks to the Romans modern engineers and designers learn model analysis, a technique for simulating the complex behavior of a structure, a dam.

**VII. Answer the following questions.**

1. What kinds of branches of civil engineering are there? What are they?
2. Why were dams built in antiquity?
3. What was the important contribution in water supplying to cities and towns?
4. How did the water turbines operate?
5. What is one of the greatest advantages of a water-power station?
6. What are the three diverse branches of engineering? What changes did they undergo?
7. How did the new devices help the engineers and designers?

**VIII. Speak about types of dams and their constructions.**

## 2.3. IRRIGATION

## IRRIGATION

**I. Read and translate the text.**

Irrigation is the artificial application of water to soil to assist in the production of crops. A reclamation engineer must have a good knowledge of the available water supply, its conservation and application to the land, the characteristics and needs of the different types of soil and the requirements of the various crops to be produced.

In general, irrigation is most extensively practiced in arid regions where agriculture without it is impracticable but it is also applied to lands of the semiarid regions to increase the yield and to special crops in humid regions such as rice, garden flowers and vegetables.

In fact, there are comparatively few regions so free from droughts that irrigation would not be profitable if it could be cheaply provided.

The surface of the earth is composed of land and water, the latter being roughly three-fourths of the area and not habitable by man. More than half of the remaining one-fourth of land area is either too cold or too rocky for cultivation and the major portion of the rest is too arid for production of crops.

Thus the area naturally available for cultivation is a very small proportion of the whole. Fortunately, man can increase the area for cultivation by artificially applying water to soil where nature fails to do this. A considerable portion of desert and semidesert soil is successfully reclaimed in some countries.

An irrigated region has certain advantages over a humid region. There is much advantage in being able to apply the water at the proper time and in the quantity needed. There is much advantage in being able to stop application of water at will.

The soils of arid regions are usually better supplied with the mineral plant foods which have not been washed out by excessive rains. Sunlight providing life and growth is more intense and constant in an arid than in a humid region. The yields under irrigation may be made far larger and more stable, than under natural precipitation, provided sufficient care and skill are applied.

Methods of applying irrigation water to arable lands vary with topography, soil conditions, crops grown, value of crop products available, water supply and other factors.

Very often drainage works are constructed together with irrigation development to discharge both excess water and excess salts. So drainage development parallels irrigation development especially in case of soil salinity.

*Notes:*

1. in general-вообще;

2. semiarid- полузасушливый; semi- приставка, означающая *полу*-, semiconductor- полупроводник;

3. in fact- фактически;

4. at will- по желанию;

5. salinity- засоление *(почвы)*

**II. Match the words and their Russian equivalents.**

| | |
|---|---|
| 1. application | a. влажный |
| 2. soil | b. полузасушливый |
| 3. arid | c. засушливый |
| 4. to increase | d. пустыня |
| 5. humid | e. атмосферные осадки; выпаде- |
| 6. to compose | ние осадков |
| 7. semiarid | f. применение |
| 8. desert | g. достаточный |
| 9. precipitation | h. полив |
| 10. sufficient | i. инженер-мелиоратор |
| 11. salinity | j. почва, грунт |
| 12. quantity | k. соленость, минерализация |
| 13. reclamation engineer | l. количество |
| 14. water application | m. увеличивать |
| | n. составлять |

**III. Translate into English.**

преимущество, орошение, требования, водоснабжение, засуха, засоление (почвы), сырой (влажный), снабжать, мелиорация, атмосферные осадки, устойчивый, остальное

**IV. Match the words opposite in meaning.**

expensive, increase, rough, inhabitable, success, shortage, advantage, arid, the latter, drainage, adequate, cheap, insufficient, disadvantage, failure, better, humid, profitable, few, habitable, decrease, uninhabitable, worse, excess, irrigation, the former, many, unprofitable, fine

**V. Translate into English.**

a) semi-desert, semi period, semitone, semiarid, semiautomatic, semiconductor, semicircle, semi-finished product

b) 1. to compare, comparative, comparatively, comparison;

2. to reclaim, reclaimed, reclaimable, reclamation;

3. to irrigate, irrigator, irrigated, irrigable;

4. to apply, application, applicable, applied;

5. adequate, adequately, inadequate, adequacy;

6. art, artificial, artificially, artist;

7. nature, natural, naturally, unnatural, naturalist;

8. success, successful, successfully, to succeed in;

9. available, unavailable, availability;

10. advantage, advantageous, advantageously, disadvantageously, to advantage;
11. to produce, producer, production, product;
12. special, specialist, speciality, especially, to specialize;
13. to exceed, excess, excessive, excessively;
14. skill, skilful, skilfully, skilled;
15. stable, stability, to stabilize, unstable

**VI. Math the words and their definitions.**
drought, irrigation, drainage, rainfall, precipitation, excess

1) Artificial application of water to soil to assist in the production of crops.
2) Removal of excess water end excess salt to make the land fit for cultivation.
3) A quality that is more than expected or needed.
4) The total amount of rain.
5) The total amount of all forms of falling moisture (rain, snow, hail, etc.)

**VII. Group the words in their logical sequence.**
1. a drop, an ocean, a stream, a river;
2. bad, excellent, good, satisfactory;
3. per minute, per hour, per year, per month, per week, per century, per second;
4. shortage, excess, adequacy;
5. inadequate, sufficient, excessive;
6. a fourth, two thirds, a fifth, whole

**VIII. Say if the following statements are true or false.**
1. Irrigation is the artificial application of water to soil to assist in the production of crops.
2. In general, irrigation is most extensively practiced in humid regions.
3. An irrigated region has certain advantages over a humid region.
4. The surface of the earth is composed of sand and water.
5. Sunlight providing life and growth is more intense and constant in an arid than in a humid region.

**IX. Ask questions to the following sentences.**
1. Irrigation is the controlled application of water to arable lands.
2. The growth of crops under irrigation is very important in countries with arid and semiarid lands.
3. In arid countries adequate food supplies cannot be produced without irrigation.
4. Irrigation developments have changed many unused lands into valuable agricultural regions.
5. In many countries successful agriculture depends on irrigation.
6. The history of irrigation began with the history of man.
7. Irrigation is the artificial application of water to soil to assist in the production of crops.

**X. Make up a plan of the text“Irrigation”.**

**XI. Summarize the contents of the text “Irrigation”.**

# IRRIGATION SYSTEMS

**I. Read and translate the text.**

An irrigation system, regularly servicing big areas, consists of the following sections:

a) head water intake unit with a regulating installation in the river's bed;

b) irrigation canals (permanent and temporary);

c) distribution system (sometimes also a drainage system);

d) hydrotechnical installations on the canals and network;

e) service and dwelling houses, hydrometric stations, communication lines (sometimes hydraulic stations), as well as other structures and arrangements for the operation of the system.

Rivers, lakes or man-made reservoirs, backed up by dams, are used as sources of water supply for an irrigation system.

Reservoirs may have the form of an open body of water, basins of the excavated-pond type and estuary basins. Surface and estuary basins are usually small in size and are used in waterworks as reservoirs of diurnal regulation. Surface basins, formed by damming up some stream, are also used for diurnal regulation at diversion hydro-electric power stations.

Dammed reservoirs are much bigger and make possible the seasonal and long-term regulation of discharge. They are most widely used in the practice of ameliorative construction.

The head section of hydrotechnical installations put up on this type of reservoirs has the following elements: a dam, water intake arrangements, flood gates, devices for sluicing the pumps if there are many of them.

The dam is the most important and responsible hydrotechnical structure among the head water intake installations.

Dams are classified according to their purpose-barrage and storage.

The barrage dams back up the water level usually to a small height with a view to creating more favourable conditions for water withdrawal, combating harmful drifts, utilization of water-power, for water transport and control of water-level above the irrigated area. Storage dams are tall structures, creating big reservoirs to regulate river discharge with a view to making better use of it in the national economy. Today, dams are built, as a rule, to accumulate big reserves of water and use them simultaneously for irrigation, watering, power generation, supplying the population and industry with water, meeting the requirements of the water economy.

The basic types of dams, with regard to material they are built of, are as follows:

1) earthen dams, put up by the fill or hydraulic fill methods;

2) rock-filled or of dry rock masonry;

3) concrete or of cemented rock;

4) reinforced concrete.

Furthermore, dams are distinguished by their design and ways of letting the water through them.

With regard to design, the dams are classified in the following way:

-dams, resembling in form natural barriers, chokes (earthen dams, rock filled dams with an earthen or reinforced concrete screen);

-massive, heavy dams, resisting the water's shearing forces by their friction forces along the foundation and adhesive power with regard to it (concrete gravity dams);

-buttressed dams, whose holding frictional force is created by the water pressing on the inclined face of the dam, and transmitted to the foundation via the buttresses; such dams are mostly built of reinforced concrete; they are comparatively light;

-arched, concrete or reinforced concrete.

They are classified in the following way with regard to water passage through the dam:

-dams without overflow, which do not let the water pass through them;

-spillway dams, which are designed to let the water overflow their crest;

-gate dams or spillway-gate dams, where water is passed through surface or under-water gates with shutters.

**II. Match the words and their Russian equivalents.**

| | |
|---|---|
| 1. dam | a. обводнение, увлажнение |
| 2. level | b. проектировать |
| 3. bed | c. состоять |
| 4. concrete | d. затвор; клапан |
| 5. water intake unit | e. установка |
| 6. to design | f. плавающий мусор |
| 7. to consist of | g. плотина; дамба, запруда |
| 8. installation | h. затвор катастрофического во-досброса |
| 9. water supply | i. водозаборное сооружение |
| 10. flood gates | j. русло (реки), дно (реки) |
| 11. body of water | k. водная масса; водный объект |
| 12. water withdrawal | l. водосливная плотина |
| 13. buttressed dam | m. водозабор с изъятием воды из источника |
| 14. spillway dam | n. плотина, усиленная с помощью контрфорсов |
| 15. gate dam | o. плотина с затворами; щитовая плотина |
| 16. shutter | p. земляная плотина |
| 17. drift | q. каменно-набросная плотина |
| 18. arched dam | r. водоснабжение |
| 19. earthen dam | s. арочная плотина |
| 20. rock-filled dam | t. уровень |
| 21. watering | u. бетон |
| 22. hydrometric station | v. водомерный пост |

**III. Translate into Russian.**

hydrometric station; hydraulic station; seasonal regulation; classification of dams; utilization of water power; to accumulate reserves of water; to regulate river discharge; national economy; types of dams; cemented rock; massive dams; natural barriers

**IV. Find in the text the words corresponding to the following definitions.**

a) the system by which water is made available for irrigation;

b) the barriers built across a river raising water to a small height to create favourable conditions for water withdrawal;

c) the barrier across a river creating big reservoirs to regulate river discharge

**V. Choose a more general word combination.**

a) head water intake, irrigation system, hydrotechnical installations on the canal, irrigation canal;

b) water intake arrangement, flood gates, a dam, a head section, devices for sluicing the pumps

**VI. Complete the following sentences.**

| their purpose, the material, their design, water passage, through the dam |
|---|

1. Dams are divided into barrage and storage dams according to … .
2. They are divided into rock filled, concrete and reinforced concrete dams according to … .
3. Dams may be divided into massive, buttressed and arched dams according to … .
4. They may be called spillway dams, gate dams or dams without overflow … .

**VII. Say if the following statements are true or false.**

1. Rivers, lakes or man-made reservoirs, backed up by dams, are used as sources of water supply for an irrigation system.
2. Surface and estuary basins are usually big in size.
3. The dam is the most important and responsible hydrotechnical structure among the head water intake installations.
4. Dams are classified according to their purpose-barrage and storage.
5. Dammed reservoirs are small and don't make possible the seasonal and long-term regulation of discharge.
6. Dams are distinguished by their size and ways of letting the water through them.
7. Reservoirs may have the form of an open body of water, basins of the excavated - pond type and estuary basins.

**VIII. Ask 5 questions to the text and let your groupmates answer them.**

**IX. Make up a plan of the text.**

**X. Summarize the contents of the text.**

## METHODS OF IRRIGATION

**I. Read and translate the text. Use a dictionary if necessary.**

The methods by which irrigation is applied to the land should depend on individual land features such as the slope of the land, the crops to be irrigated, the nature of the water supply and the ability of the soil to absorb and hold water.

There are four general methods of applying water:

1) by flooding, thus wetting all the land surface;
2) by furrows, thus wetting only part of the ground surface;
3) by sprinkling, in which the soil is wetted with a spray;
4) by subirrigation, in which the soil is wetted only a little, but in which the subsoil is saturated.

The first three methods come under the general heading of surface irrigation.

Flood irrigation generally requires large streams or canals, gentle topography and careful levelling of the land. In theory every part of the area to be irrigated absorbs the

predetermined amounts of water, but in practice some receive too much. For this reason flood irrigation is more suited to close-growing crops like rice.

Furrow irrigation is a method by which water is run in furrows, normally made by cultivating between crop rows. The earth is thrown up into ridges between the furrows and the seeds are planted in the centre of the ridges. Furrow irrigation is very common because it is adaptable to a great variety of land slopes and soil textures and can be used with either large or small streams of irrigation water.

Difficulties may arise with the use of furrow irrigation on unsuitable soils. If the soil is very pervious, the water running along the furrows may sink vertically into the soil without ever reaching the centre of the ridges where the seeds are sown. On the other hand, the soil may be so impervious that the water does not reach the centre of the ridge and the seeds do not germinate anyhow. A more general disadvantage of furrow irrigation is that to ensure that the whole of the irrigation area receives enough water, it is always necessary to overwater some parts.

Sprinkler or spray irrigation applies water to the surface of the soil in the form of a spray, and is a form of artificial rain. A common type of sprinkler head is the revolving one, which distributes water radially. This form of irrigation has advantages over other surface irrigation. It can be adapted for use on almost all types of soil, especially sandy soils which absorb water rapidly. It enables erosion to be controlled on steep land and can often be used on soils that are too shallow, too steep or too rolling to be irrigated by surface methods. Small streams of water can be used efficiently with this method, and it is adaptable to all the major crops with the exception of those, like rice, that require standing water. A uniform application of water is made possible, and the amount and timing of the irrigation can be easily controlled. Land is not needed for irrigation structures, and so larger areas are available for cropping.

There are, however, a number of disadvantages of sprinkler systems. The water distribution is easily affected by the wind, which may disturb the pattern of wetting so that some parts get too much water and some too little. The power requirements necessary to maintain the water pressure are usually greater than for other methods of irrigation, and the water used must be clean and free from debris. A constant supply of water is needed. Most important of all, the initial costs of installing such systems are very high.

It is especially popular as a form of supplemental irrigation in areas with adequate rainfall, as it requires the least alternation of normal techniques of cultivation.

Subirrigation or subsoil irrigation applies water beneath the ground rather than on the surface. By means of lateral ditches or mole or tile drains, a water table is maintained at some predetermined depth below the soil surface. From the water table the water seeps upwards to the plant roots through capillary action. This method of irrigation requires complete control of the elevation of the water table to ensure that the plant root zone in the soil is kept free from excess water. Lands suitable for this method of irrigation are rather limited, since it requires a special combination of natural conditions. It needs a layer of permeable soil immediately below the surface which should be approximately parallel to the water table.

**II. Match the words and their Russian equivalents.**

| | |
|---|---|
| 1. flood | a. водопроницаемый (о грунте) |
| 2. furrow | b. гребень, край |
| 3. to sprinkle | c. наводнение, разлив, половодье |
| 4. to saturate | d. количество осадков |

| | |
|---|---|
| 5. seeds | e. ров, канава |
| 6. ridge | f. борозда, жёлоб |
| 7. to germinate | g. поднятие, возвышение |
| 8. distribution | h. разбрызгивать, проводить по- |
| 9. rainfall | лив дождеванием |
| 10. ditch | i. дополнительный |
| 11. elevation | j. распределение |
| 12. supplemental | k. насытить, пропитать |
| 13. lateral | l. подпочвенное орошение |
| 14. steep | m. прорастать; давать всходы |
| 15. shallow | n. поверхностный, неглубокий; |
| 16. crop | мелкий |
| 17. debris | o. урожай; с/х культура |
| 18. water-table | p. крутой, отвесный |
| 19. subirrigation | q. осколки пород; обломки |
| 20. pervious | r. уровень грунтовых вод |
| | s. боковой канал, отвод |
| | t. семена |

**III. Translate into Russian.**

ideal conditions; individual features; economical use; a popular form; normal technique of cultivation; a special combination; capillary action; natural conditions; in theory; parallel to the water table; to sink vertically; to distribute water radially; in the centre

**IV. Translate into Russian.**

to overwater the area; to overestimate results; to underestimate the fact; subirrigation; subsoil irrigation; adaptation; an easily adaptable method; predetermined depth; approximately parallel

**V. Say which of the following adjectives and participles can be used with the word "soil".**

ideal, wet, wetter, close-growing, dry, pervious, impervious, sandy, lateral, suitable, permeable, approximate, special, saturated, artificial, standing, usual, available, light, heavy, hydraulic, shallow, steep, level

**VI. Name the word the defition of which is given.**

The moving of soil in preparing land for irrigation to produce a level or uniformly sloping surface.

**VII. Find the paragraph in which negative sides of sprinkler irrigation are mentioned.**

**VIII. Read the definitions and name the types of irrigation which they denote.**

1) watering plants by applying the water below the ground surface;

2) a method of irrigation in which water under adequate pressure is sprinkled over the land;

3) a method of irrigation in which water is made to cover the surface of the land to a considerable depth for a considerable period after which it is drawn off; normally one such flooding is enough for the whole growing period;

4) a method of surface irrigation in which water is run in furrows between crops.

**IX. Make up a summary of the text "Methods of Irrigation".**

**X. Read the following text and answer the question: "Why must sandy soils be irrigated more frequently than heavy soils?"**

Soil erosion is much less severe with sprinkler irrigation than with furrow irrigation. Even with sprinkler irrigation, however, serious erosion can occur particularly on a sandy soil that is kept cultivated. Sprinkled water may produce deep furrows and heavy sprinkling or rains may cause erosion on a bare soil.

The sandier or shallower the soil, the less moisture it holds after an irrigation. As plants seem to use water from a sandy soil at about the same rate as from a heavy soil, the sandy soil needs to be irrigated more frequently.

## AUTOMATION IN IRRIGATION METHODS

**I. Read and translate the text. Use a dictionary if necessary.**

In order to from one kilogram of dry matter, wheat draws out of the soil 300-400 litres of water, maize 200-300 litres and cotton 500-600 litres. With a cotton yield of 3.5-4.0 tons per hectare, 5,000-6,000 tons of water have to be delivered to every hectare of the plantation during the vegetation period. In those areas where cotton is grown, the summer is dry and all the water necessary for the harvest has to be delivered to the fields over a network of artificial canals and ditches. Many large hydrotechnical developments are fitted with devices for mechanizing and automating the gate controls. The operator has but to press a button on the control panel to make the water flow into the take-off canal.

The water that comes to the field must get to the roots of every plant. There are as many as 100,000 cotton shrubs, 3-5 million rice and wheat plants on a hectare of land. A great deal of effort was invested in the past decades to develop devices and machines for mechanizing and automating irrigation. There are machines operating on the rain principle. Water is elevated to the height of one or two metres and sprinkled over the plot. Such machines are adequate for supplying fields with small quantities of water - 300-400 cubic metres for every watering.

Many scientists and specialists worked hard at the problem of irrigation mechanization. A new system of a combined irrigation network has been developed by scientists. lt consists of permanent underground delivering and watering pipelines and of movable flexible watering hoses. The pipelines and hoses are made of polyethylene or similar material. The stationary watering pipelines may be made of asbestos cement.

The underground delivering pipelines are laid along the whole length of the plot to be watered. To both sides of the pipeline, watering pipes and movable watering hoses are provided. On a plot 2,000 metres long and 1,000 metres wide it is sufficient to have two delivering mains spaced 500 metres from each other.

Flexible watering hoses are attached to water hydrants of the delivering pipeline. The hoses and underground watering pipelines are perforated, the holes matching the row width. The furrow method of irrigation is the most suitable one for the combined irrigation network.

Water is fed from the canal directly into the underground delivering pipe-lines via the water take-off facilities. The necessary head is created in the network by taking advantage of the natural slope of the area.

In the elevated part of the plot, where there is no adequate head in the delivering pipeline yet, watering is carried out with the aid of movable flexible watering hoses placed on the field surface. In the lower part of the plot, it is sufficient to open the gates in the distributing wells to make the water rush into the underground watering pipelines. Flowing out of holes in these pipelines, the water finds its way through a 25-30 centimetres layer of soil, as little springs it flows into the furrows, moistens the soil around and reaches the roots of the plants.

The ends of the delivering and watering pipelines are fitted with special flushing valves which serve to free the pipelines of silt. When they are opened, the force of the water stream hurls the silt beyond the network.

The characteristic feature of the combined irrigation network is that it distributes water uniformly among the furrows through underground watering pipelines and flexible hoses.

A turn of the gate changes the spurt simultaneously in 300-500 furrows within a few minutes. Besides, fertilizers may be supplied to plants together with water. The combined watering system makes it possible to water a 10-15 hectare plot simultaneously. The production of a ton of cotton takes 15-20 per cent less irrigation water than with conventional watering methods.

A stable 15 per cent increment in cotton crop yields has been obtained on plots irrigated by the new system. And, last but not least, the soil is made fuller use of due to the removal of the temporary irrigation network and the efficiency of tractors is increased by 20-25 per cent.

**II. Match the words and their Russian equivalents.**

| | |
|---|---|
| 1. wheat | a. хлопок |
| 2. maize | b. разбрызгивать |
| 3. cotton | c. постоянный, неподвижный, закрепленный |
| 4. hose | d. шланг, оросительный трубопровод |
| 5. stationary | e. гибкий |
| 6. flexible | f. пшеница |
| 7. spurt | g. просверлить |
| 8. to sprinkle | h. струя, напор струи |
| 9. to perforate | i. кукуруза |
| 10. slope | g. склон, наклон |

**III. Find in the text synonyms of the following words and word combinations.**

growing, period, substance, amount, increase, at the same time, apparatus, thanks to, by means of, to work out, to irrigate

**IV. Translate the words into Russian. Find the words with opposite meaning.**

increment, decrease, permanent, movable, temporary, manual, beyond, new, stationary, automatic, conventional, within

**V. Translate the following words into Russian.**.

suitable, simultaneous, stationary, automatic, flexible, movable, conventional, fixed, not movable; that can be moved or carried from place to place; that will bend without breaking; correct for occasion; traditional, not new or original

**VI. Complete the following sentences according to the information of the text.**

1) In the elevated part of the plot watering is carried out by means of….2) In the lower part of the plot water is applied to the soil through….3) From the canal water is fed to the underground delivering pipelines via….4) To free the pipelines of silt delivering and watering pipelines are fitted with….5) The characteristic feature of the combined irrigation network is uniform…of water among the furrows. 6) One of the advantages of the system is that…may be supplied to plants together with water. 7) This method has several advantages over…irrigation methods. 8) Due to the removal of the temporary irrigation network the…of tractors is increased. 9) The combined irrigation system makes it possible to replace…irrigation methods by automatic ones.

**VII. Find and read aloud the paragraph about the advantages of the combined irrigation network.**

**VIII. Arrange the following sentences according to the order corresponding to the movement of water through the combined irrigation network**.

field furrow, canal, take-off, delivering pipeline, flexible watering hoses, roots of the plant

**IX. Ask 5 questions to the text and let your groupmates answer them.**

**X. Make up a plan of the text.**

**XI. Reproduce the contents of the text "Automation in Irrigation Methods''.**

## 2.4. ENGINEERING. MY FUTURE SPECIALITY AND ITS IMPORTANCE FOR THE ECONOMIC DEVELOPMENT OF THE REPUBLIC OF BELARUS

### ENGINEERING

**I. Pronounce the following words correctly and learn their meanings.**

1. ancient occupations – древние занятия
2. skill – умение, мастерство
3. broad field – широкий спектр
4. application – применение
5. to require – требовать, нуждаться
6. cast of mind – склад ума
7. imagination – воображение
8. testing – апробирование
9. to deal with – иметь дело с
10. automation process – автоматизированный процесс
11. device – средство, устройство, механизм
12. prime mover – первичный двигатель
13. engine – мотор
14. turbine – турбина
15. pumping machines – насосные машины
16. hydraulic apparatus – гидравлические приборы

17. air conditioning – кондиционирование воздуха
18. refrigerating equipment – холодильное оборудование
19. to comprehend – воспринимать
20. competence – компетентность, знания
21. current issue – современное понятие, проблема
22. to bridge a gap – ликвидировать разрыв
23. prolific solutions – плодотворные решения
24. to have at the command – иметь в распоряжении
25. sources of power – источники энергии
26. society – общество

**II. Read the text. Figure out the main concept of engineering professions.**

Engineering is one of the most ancient occupations in the history. The skills included into its broad field have led our civilization to the high level development at present days.

Engineering is often defined as making practical application of theoretical sciences such as physics and mathematics. Thus the work of engineer requires the analytical cast of mind and imagination. His main functions are designing, developing and testing products. At present the engineer may deal with the automation processes, so he can work in the designing office, in the lab and in the production field of engineering.

Mechanical engineering is one of its main divisions, which deals with the design, construction and operation of machines and devices of all kinds. Among these machines are prime movers such as engines and turbines, operating pumping machines and other hydraulic apparatus; air conditioning, refrigerating equipment and what not.

As for civil engineering its quality influences greatly industry, health, agriculture, commerce and communication. Civil engineers are people with vision, able to comprehend the forces and processes of nature and use them for the future well-being of mankind. A rapidly changing world demands the design competence which should be situated within knowledge of current issues, such as urban problems, the new environment of computer aided design, the Internet and the application of new materials and technology. The work of the architectural technologist bridges this gap between design theory and construction practice. Modern day architects are well qualified professionals with practical and creative skills who can analyze construction problems and find attractive, prolific solutions.

In the 21th century the people of engineering professions have at the command new sources of power. They are to work hard for developing different industrial branches and thus making a great contribution to the progress of our society.

**III. Answer the following questions.**

1. Why has the civilization achieved high level development?
2. What are the main functions of engineering?
3. What does the mechanical engineering deal with?
4. What kinds of prime movers do you know?
5. What is the purpose of civil engineering?
6. What does the up to date design competence require?
7. What are the necessary characteristics of the modern architects?
8. Why the work of engineer is highly demanded in the 21 century?
9. What for are engineers to work hard?

**IV. Agree or disagree with the statements.**

1. Engineering is the occupation, which has recently appeared.
2. Engineers can work only on the factories and plants.
3. Mechanical engineering deals only with repairing of machines.
4. Civil engineering has no influence on any side of peoples' lives.
5. Architects should possess knowledge concerning many aspects of life.
6. It's enough to sketch and draw well to become a skillful specialist in the field of architecture.
7. The work of engineer requires the analytical cast of mind and imagination.
8. In 21 century the people of engineering professions have to discover new sources of power.
9. Hard work of engineers is required in the society.

**V. Match tails and heads.**

| | |
|---|---|
| 1. The skills included into its broad field<br>2. Engineer's main functions are | a. the design, construction and operation of machines and devices of all kinds.<br>b. able to comprehend the forces and processes of nature and use them for the future well- being of mankind. |
| 3. As for civil engineering its quality<br>4. Mechanical engineering is one of its main divisions which deals with | c. have at the command new sources of power.<br>d. designing, developing and testing products. |
| 5. The work of the architectural technologist | e. influences greatly industry, health, agriculture, commerce and communication. |
| 6. In 21 century the people of engineering professions<br>7. Civil engineers are people with vision | f. have led our civilization to the high level development at present days.<br>g. bridges this gap between design theory and construction practice. |

**VI. Finish the sentences and write down the summary about your specialty.**

1. I study at … Faculty.
2. My future specialty is … .
3. It is connected with … Engineering.
4. I can't do without studying … in order to become skilled specialist.
5. After graduating from the university I'll be able to find a job at … .
6. I'll have to deal with … .
7. I think that my future profession is useful for the society because … .
8. My specialty is interesting too as … .
9. Besides my profession is sure to contribute to my future successful career because ….
10. I do hope that when I become a skilled professional … .

## AMELIORATION AND WATER SUPPLY ENGINEERING

**I. Read the text. Outline the main characteristics of water-supply engineering and sewage disposal.**

### Water-Supply Engineering and Sewage Disposal

Water-supply engineering is a branch of civil engineering. It is a complex of activities concerned with the supply of water to its various consumers – community, industrial enterprises, transport, etc.

This discipline based on various branches of technical sciences has a complex character. The complex character is determined by the necessity of solving a complex of complicated engineering tasks connected with design, construction and operation of water supply systems. These systems include various facilities providing acquisition, treatment and delivery of water in demanded quantities and of adequate quality to water consumers.

The study of the course in water-supply engineering is based on the knowledge of a number of general technical and specialized disciplines:

1. For solving the tasks of acquisition of water from natural water sources the knowledge of hydrology, hydrogeology (groundwater hydrology), hydrotechnics (hydraulic engineering) and drilling technology is needed.

2. The solution for problems of water treatment technology is possible with sufficient knowledge of water chemistry and hydrobiology.

3. Planning and designing of water-supply networks and water facilities based on the laws of hydraulics require profound knowledge of this discipline.

4. Design, construction and operation of water delivery structures require the knowledge of technical equipment: pumps, engines, electrical equipment, as well as control and measuring instruments.

5. For the work in design and construction of waterworks a water supply engineer must have good training in the sphere of building disciplines. Sewage disposal [waste disposal] is a complex of sanitary activities as well as a complex of engineering structures and facilities intended for the collection of wastewater, its disposal outside the city limits or industrial enterprises, its delivery to wastewater treatment plants, as well as its treatment, sanitation and disinfection before recycling or discharge into a body of water.

**II. Complete the following sentences according to the text.**

1. Water-supply engineering is … .
2. This discipline based on various branches of technical sciences has … .
3. A water-supply engineer solves a complex of complicated engineering tasks connected with … .
4. Water supply systems include various facilities providing … .
5. The study of the course in water-supply engineering is based on the knowledge of ….
6. Sewage disposal [waste disposal] is a complex of sanitary activities as well as a complex of engineering structures and facilities intended for … .

**III. Answer the following questions.**

1. What is water-supply engineering?
2. Does this discipline have a complex character? What is it deter- mined by?
3. What facilities do water supply systems include?
4. What is a water supply system?
5. What does a water supply system include?
6. What general technical and specialized disciplines is the study of the course in water-supply engineering based on?
7. What is sewage disposal?

**IV. Match the synonyms.**

| | |
|---|---|
| 1. acquisition | a. building |
| 2. branch | b. collection |
| 3. complex | c. complicated / difficult |

| | |
|---|---|
| 4. construction | d. deep |
| 5. hydrogeology | e. delivery |
| 6. hydrotechnics | f. designed |
| 7. intended | g. groundwater hydrology |
| 8. network | h. hydraulic engineering |
| 9. problem | i. sewage disposal |
| 10. profound | j. solving |
| 11. sewage | k. sphere/field/area/subdivision |
| 12. solution | l. system |
| 13. supply | m. task |
| 14. waste disposal water consumer | n. wastewater water user |

**V. Match the antonyms.**

| | |
|---|---|
| 1. adequate | a. impossible |
| 2. complicated | b. inadequate |
| 3. demand | c. inside |
| 4. high-quality | d. insufficient |
| 5. natural | e. low-quality |
| 6. outside | f. simple |
| 7. possible | g. supply |
| 8. sufficient | h. to admit |
| 9. to discharge | i. to exclude |
| 10. to include | j. unnatural |

**VI. Fill in the correct prepositions.**

1. a branch … civil engineering
2. a complex … activities concerned … the supply … water … its various consumers
3. to be based … various branches … technical sciences
4. to be determined … the necessity … solving a complex … complicated engineering tasks
5. to be connected … design, construction and operation … water supply systems
6. the course … water-supply engineering
7. acquisition … water … natural water sources
8. the solution … problems … water treatment technology
9. design, construction and operation … water delivery structures
10. … the sphere … building disciplines
11. a complex … engineering structures and facilities
12. to be intended … the collection … wastewater
13. … the city limits
14. … recycling or discharge … a body … water.

**VII. Match the English and Russian equivalents.**

| | |
|---|---|
| 1. water-supply engineering<br>2. sewage [wastewater / waste] disposal<br>3. water supply [delivery] | a. водоотведение, отведение сточных вод, отвод сточных вод, удаление сточных вод<br>b. водоочистная станция, станция водоочистки, станция очистки сточных вод, сооружения по |

| | |
|---|---|
| 4. water supply system [network]; water distribution system<br>5. water consumer [user]<br>6. water acquisition [collection]<br>7. water treatment [purification]<br>8. water facilities<br>9. sewage / wastewater<br>10. sewage [wastewater] collection<br>11. sewage [wastewater] treatment<br>12. sewage treatment plant [works], wastewater treatment plant [works]<br>13. sewage [wastewater] sanitation<br>14. sewage [wastewater] disinfection | очистке сточных вод<br>c. водопользователь, водопотребитель<br>d. водоснабжение *(отрасль инженерии)*<br>e. водоснабжение, снабжение водой, доставка воды, подача воды, водоподача, обеспечение водой<br>f. водохозяйственные сооружения<br>g. обезвреживание сточных вод<br>h. обеззараживание сточных вод<br>i. обработка воды, очистка воды<br>j. очистка сточных вод<br>k. сбор воды, водосбор, добывание воды<br>l. сбор сточных вод, прием сточных вод<br>m. система водоснабжения<br>n. сточные воды |

**VIII. Get ready to speak about water-supply engineering as a branch of civil engineering.**

**IX. Read the text below and pay attention to the peculiarities of water supply engineering profession.**

**Amelioration and Water Supply Engineering**

An amelioration and water supply engineer is a specialist engaged in the design, development, implementation and support of water supply systems and amelioration projects. The main task of such engineers is to ensure effective and sustainable management of water resources, including their distribution, use, protection and restoration. This profession is important for maintaining the balance of water resources, preventing droughts and floods, ensuring access to clean water and maintaining ecological balance. What does an amelioration and water supply engineer do? The amelioration and water supply engineer performs many tasks related to water resources management and amelioration. Their main functions include:

*Design and development:*

- Development of plans and projects for water supply and sanitation.
- Design of irrigation and drainage systems for agricultural land.

*Analysis and research:*

- Research and assessment of water resources to determine their quality and quantity.
- Analysis of the impact of hydraulic engineering and land reclamation works on the environment.

*Management and supervision:*

- Project management for the construction and reconstruction of hydraulic structures.
- Monitoring compliance with norms and standards in the field of water use and land reclamation.

*Technical support:*

- Maintenance and optimization of existing water management systems.
- Implementation of technical supervision over the condition and operation of hydraulic structures.

*Consultations and training:*

- Providing consultations on sustainable water resources management.
- Staff training and educational programs for the public on water use issues.

*Cooperation and coordination:*

- Interaction with government agencies, local communities and other stakeholders.
- Coordination of international and regional projects in the field of water management and land reclamation.

Amelioration and water supply engineers play a key role in ensuring sustainable development, rational use and protection of water resources, which is important for both the environment and the economy.

Amelioration and water supply engineers can specialize in various fields reflecting a wide range of tasks and goals related to water management. Some of the main specializations include:

- ✓ *Hydraulic engineering:* Specialization in the design and construction of dams, canals, reservoirs and other hydraulic structures.
- ✓ *Irrigation engineering:* Development and management of irrigation systems for agricultural needs, optimization of the use of water resources for irrigation.
- ✓ *Drainage and drainage of land:* Design and implementation of drainage and drainage systems to improve agricultural land and prevent flooding.
- ✓ *Water quality control:* Monitoring, analysis and management of water quality, development of measures to prevent pollution of reservoirs.
- ✓ *Ecological water management:* Specialization in the conservation of ecosystems, biodiversity of reservoirs and sustainable management of water resources.
- ✓ *Water risk management:* The work to prevent and minimize the consequences of floods, droughts and other water disasters.
- ✓ *Water supply and sanitation:* Design and operation of water supply and sanitation systems for urban and industrial needs.
- ✓ *Water resources management:* Development of strategies and plans for the effective allocation and use of water resources on a regional and national scale.

These specializations reflect the variety of tasks facing Amelioration and water supply engineers and emphasize their importance in modern society, where sustainable and efficient water resources management is a key factor in economic development and environmental security.

Amelioration and water supply engineers can find employment in various sectors where their knowledge and skills are used for the management, planning and operation of water resources. The main places of work include:

- ❖ *State and municipal institutions:* Work in ministries and departments dealing with water resources, agriculture, ecology and nature management.
- ❖ *Design and research institutes:* Employment in research institutes and design organizations developing new technologies and approaches in the field of water management and amelioration.
- ❖ *Municipal enterprises:* Work in organizations engaged in the operation of water supply and sanitation systems, management of sewer networks and sewage treatment plants.

❖ *Agricultural organizations:* Applying knowledge to the development and management of irrigation and drainage systems in the agricultural sector.

❖ *Construction companies:* Participation in the design and construction of hydraulic structures such as dams, canals, reservoirs.

❖ *Environmental organizations and non-profit organizations:* Work in the field of environmental protection, focus on sustainable management of water resources and conservation of aquatic ecosystems.

❖ *Private consulting firms:* Providing consulting services in the field of planning, management and operation of water resources.

❖ *International organizations:* Participation in international projects and programs on water management and amelioration, often within the framework of international assistance and development.

Water management and amelioration engineers play a key role in ensuring sustainable water management, which is especially important in the context of global climate change and growing water scarcity.

**X. Make your own presentation about your future career.**

## 2.5. DRAINAGE

## DRAINAGE

**I. Match the words in Russian with their English equivalents.**

| | |
|---|---|
| 1. drainage | a. достаточный, подходящий |
| 2. waterlogged | b. восстанавливать; производить |
| 3. sterile | мелиоративные работы |
| 4. sufficient | c. дренажная труба |
| 5. shortage | d. заболоченный, затопленный |
| 6. to reclaim | e. дренажный коллектор |
| 7. tile | f. избавиться от |
| 8. humidity | g. осушение, дренаж |
| 9. density | h. гидрологический режим |
| 10. consumption | i. плотность |
| 11. to dispose of | j. влажность; сырость |
| 12. collector ditch | k. потребление |
| 13. reclamation | l. мелиорация |
| 14. water regime | m. нехватка |
| | n. неплодородный |

**II. Read and translate the text. Use a dictionary if necessary.**

Getting the water onto the land is only part of the problem that faces the farmer; of almost equal importance is the disposal of water after use. Too much water in the soil can be worse than not enough, while inadequate planning and improper irrigation frequently result in salination and waterlogging. Salination occurs because the roots of the plants absorb the irrigation water but exclude most of the salt it contains. The salt remains in the soil zone upon which the plant depends for growth and eventually renders the soil sterile.

To prevent catastrophic consequences, which are too common in many areas, there must be complete and efficient control of irrigation water. It is difficult to overestimate the harm caused by salination and waterlogging; indeed, reclaiming lands ruined through faulty or misused irrigation is almost as important as bringing new lands under irrigation for the first time.

If reclamation is to be successful, the basic problem is to lower the water-table so that it is to be kept below the root zone. This may be achieved in a number of ways: a grid of deep ditches may be laid along the boundaries of the fields, or lines of tiles laid in the fields to collect the water and convey it to a collector ditch.

However, it is necessary not only to reclaim areas that have already been spoiled, but also to prevent further ruin. This can only be done by a more efficient use of water, and one way of ensuring this in the future will doubtless be by using automatic control systems. An irrigation canal is parted into separate sections, and in each section a stable water level is maintained automatically. It is held that this system will eliminate disastrous local shortages of water by maintaining stable levels of water in the irrigation canals serving a large area, such a system is very expensive, but it is claimed, doubtless under favourable conditions, that the capital costs can be regained in less than two years.

Ultimately, it is hoped that large canal systems will be controlled by computers. Data on the condition of the irrigated areas, including the humidity of the air and soil, the density of the soil and the nature of the crop, would be fed into a computer, which would then estimate the water requirements for given areas and select optimum water regimes for each section of each canal and for the system as a whole. The first results of recent experiments along these lines suggest that they bring about considerable savings both in the consumption of water and in the cost of irrigation.

To summarize, an efficient, modern irrigation system should properly perform the following functions: a) store water so that it is available in sufficient quantities whenever required; b) deliver water to all parts of the cultivated area, in amounts needed to meet crop demands during peak use periods; c) provide complete control of water; d) divide water into required amounts for use in different fields; e) dispose of waste water after use; f) allow for the free movement of farm machinery. Properly utilized, such a system allows for the most efficient use of water and makes irrigation possible without soil erosion, saline or alkaline accumulation, or waterlogging.

**III. Find in the text:**

*1) nouns corresponding to the following verbs:*

to compute, to consume, to erode, to move, to accumulate, to restore, to require, to reclaim, to demand, to drain, to dispose, to pump, to use, to experiment, to install, to grow

*2) verbs corresponding to the following nouns:*

maintenance, storage, delivery, performance, reclamation, division, elimination, disposal, selection

**IV. Choose the adjectives that can be used with the noun “drainage”.**

efficient, complete, adequate, arid, proper, humid, successful, expensive, automatic, convenient, normal, favourable

**V. Specify if the following statements are true or false.**

1) Getting the water onto the land is as important as the disposal of water after use.

2) Inadequate planning and improper drainage frequently result in salination and waterlogging.
3) The salt that remains in the plant zone upon eventually renders the soil fertile.
4) Reclaiming lands ruined through faulty or misused irrigation is almost as important as bringing new lands under irrigation for the first time.
5) Reclamation is successful if the water-table is kept below the topsoil.
6) Automated irrigation canals maintain a stable water level.
7) Computer-controlled large canal systems use the data on the condition of the irrigated areas, humidity of the air and soil, the density of the soil and the nature of the crop.
8) Computer-controlled systems do not bring about considerable savings in the consumption of water and in the cost of irrigation.
9) Modern irrigation systems should deliver water to all parts of the cultivated area, in amounts needed to meet crop demands all the year round.
10) Modern irrigation systems allow for the most efficient use of water and exclude most of the salt it contains.

**VI. Choose the correct variant.**

1. ... frequently result in salination and waterlogging.
a) Improper drainage
b) Improper irrigation
c) Improper fertilizing
2. ... occurs because the roots of the plants absorb the irrigation water but exclude most of the salt it contains.
a) Waterlogging
b) Salination
c) Erosion
3. If reclamation is to be successful, the basic problem is to lower the ... so that it is to be kept below the root zone.
a) subsoil b) water-table c) ground water d) dissolved nutrients e) the amount of fertilizers
4. Lowering the water-table may be achieved: ...
a) by laying a grid of deep ditches along the boundaries of the fields
b) by using automatic control systems
c) both: by laying a grid of deep ditches along the boundaries of the fields and by using automatic control systems
5. An irrigation canal is parted into separate sections, and in each section a stable water level is maintained ...
a) automatically
b) semiautomatically
c) manually
6. It is hoped that large canal systems will be controlled by ...
a) people.
b) computers.
c) ditches.
d) drainage and irrigation systems.
7. An efficient, modern irrigation system should ...
a) store water so that it is available in sufficient quantities whenever required.
b) deliver water to all parts of the cultivated area, in amounts needed to meet crop demands during peak use periods.

c) dispose of waste water after use.
d) allow for the most efficient use of water and make irrigation possible without soil erosion, saline or alkaline accumulation, or waterlogging.
e) all together.

**VII. Read the text. Answer the question posed by the title of the text and rearrange the following objects in the order corresponding to their sensitivity to salinity:**
1) human beings; 2) animals; 3) machines; 4) plants.

Who Demands Purer Water?

Since rain-water is very good for plants, and sea water is very bad, we may ask whether there is some intermediate kind of water that the plant will just tolerate.
The question is likely to be of great importance in arid regions where the only available irrigation water comes from underground sources. During its long staying and slow movement deep below the surface, the water dissolves minerals' salts from the rocks that surround it. Suppose this mineralized water is now offered to (1) human beings, (2) animals, (3) food-plants, and (4) machines; how will they respond?
Men will drink water containing 1 part in 1,000 of dissolved salt; animals will drink water that is much more saline, while food-plants demand purer water.
This is not only because the salt is harmful to the plant but mostly due to the fact that after long periods, the land irrigated with saline water becomes saturated with salt and in the end becomes unfit for cultivation. The water itself drains away or is transpired and the salt stays in the ground. The irrigation water should not be more than about one fifteen as salt as sea water, its mineral content should be much less than 1 part in 1,000. But if the local climate and the nature of the ground are favourable, some plants will grow on water that is much more saline than this.
As for machines, they demand water of the quality of rain-water.

*Notes:*
1. intermediate – промежуточный
2. to tolerate – терпеть
3. to respond – отвечать, реагировать

## LAND DRAINAGE

**I. Pronounce the following words correctly and learn their meanings.**
1. drainage – дренаж, осушение, водоотведение
2. ditch – ров, канава
3. drain – сток, слив, дренаж
4. dike – дамба, плотина
5. to pump – откачать
6. embanked area – территория, огражденная дамбой
7. marsh – болото, топь
8. water storage basin – водохранилище
9. feasibility – целесообразность, осуществимость
10. to take into account – учитывать, принимать во внимание
11. mitigation measures – меры по смягчению/уменьшению последствий
12. ecological security – экологическая безопасность
13. discharge rate – норма разгрузки

14. water-conductive capacity – водозаборная способность
15. plow layer – пахотный слой (земли)
16. drain ochering – обесцвечивание дренажа
17. trench – траншея, канавка
18. drain pipe – дренажная труба
19. slope angle – угол наклона
20. tillage operation – механическая обработка почвы
21. subsoiling – углубление пахотного слоя
22. slitting – продольная резка
23. landforming – формирование рельефа
24. soil liming – известкование почвы
25. fertilization – внесение удобрений

**II. Read and translate the text.**

Land drainage – the removal of excess water via open ditches, subsurface tile drains, vertical drains, or through the creation of dikes and pumping the water out from embanked areas – is widely used not only in agriculture but also in the forestry industry, municipal and industrial construction, the mining industry, the construction of sport facilities, and the organization of recreation zones.

Land drainage allows humans to bring low-productive areas (marshes, the sea bottom, inundated and waterlogged territories around water storage basins, etc.) into agricultural use and to raise the efficiency of farming. Land drainage has a long history: the first drainage systems were created in Ancient Egypt, China, and India as early as in the third millennium BC. Since that time drainage technology has improved considerably, in parallel with the general scientific and technical progress of our civilization.

Simulation methods are widely used for the scientific substantiation of modern drainage projects. A feasibility analysis of a drainage project should take into account not only economic but also environmental aspects of the problem. Modern drainage technologies apply the findings of many sciences, including physics, chemistry, mathematics, biology, ecology, soil science, and earth sciences. Environmental protection should be studied thoroughly during the development of drainage projects. It is necessary to predict negative impacts of the future drainage system on the environment, including wildlife, and to suggest adequate mitigation measures. These measures should ensure the highest ecological security of drainage systems.

Land drainage is performed through the construction of open canals and subsurface plastic, ceramic, or tile drains. Land drainage projects are based on the results of topographic, soil, hydrologic, hydrogeologic, and other kinds of survey. The sizes of drainage canals and drainage parameters are calculated by special equations describing the hydraulic and filtration properties of soils.

The main criteria used in these calculations are the desired drainage depth (the projected depth of the groundwater table), the drainage discharge rate, and the water-conductive capacity of drains. Water budget equations are used to determine optimum drainage parameters.

Envelope filter materials (sand, copra) are used to protect drains from silting; simultaneously, these filters increase the water intake capacity of drains and provide the hydraulic connection of drains with the plow layer in heavy-textured soils with low natural infiltration capacity. The deposition of iron oxides on drain walls (drain ochering) is another

danger that decreases the efficiency of drainage. A system of preventive measures is required to minimize drain ochering.

Open canals are constructed with the use of heavy excavators. The construction of subsurface drainage is performed in trenches or without them, using flexible drain pipes and drain loaders. A crucial point in the construction of drainage systems is the driving of canals and drain pipes in strict accordance with the necessary slope angle.

This is achieved with the help of laser-based equipment.

Special tillage operations – subsoiling, slitting, landforming, and land planning – are used to increase the efficiency of drainage. The removal of shrubs and stones from the surface, soil liming, and fertilization are also performed during the construction of drainage systems.

**III. Match the words from column A with their definitions from column B.**

| A | B |
|---|---|
| 1. ditch | a. a pipe or canal that is used to carry away waste matter and water from a building, or an opening in the road that rain water can flow down; |
| 2. fertilization | b. a long wall that prevents water, esp. from the sea, from flooding a place; |
| 3. drain | c. any pipe used to facilitate the transfer of water from one place to another; |
| 4. tillage operation | d. a narrow hole that is dug into the ground; |
| 5. dike | e. an area of low-lying land that is flooded in wet seasons or at high tide, and typically remains waterlogged at all times; |
| 6. drain pipe | f. a systematically decomposed layer of soil; |
| 7. to pump | g. the action of spreading a natural or chemical substance on land or plants, in order to make the plants grow well; |
| 8. trench | h. to force liquid or gas to move somewhere; |
| 9. marsh | i. a long, narrow open hole that is dug into the ground, usually at the side of a road or field, used especially for supplying or removing water or for divid ing land; |
| 10. plow layer | j. the operation which changes the soil condition with a tool for the benefit of man. |

**IV. Decide if the following statements are true or false.**

1. Land drainage is widely used in the forestry industry, municipal and industrial-construction, the mining industry, the construction of sport facilities, and the organization of recreation zones.

2. Land drainage cannot raise the efficiency of farming.

3. The first drainage systems were created in Ancient Greece.

4. Modern drainage technologies apply the findings of physics, chemistry, mathematics, biology, ecology, soil science, and earth sciences.

5. Land drainage projects are based on the results of topographic, soil, hydrologic, hydrogeologic, and other kinds of survey.

6. The main criteria used in these calculations are the desired drainage depth and the water-conductive capacity of drains.

7. Today the deposition of iron oxides on drain walls (drain ochering) is not a danger anymore.

**V. Fill in the gaps using the words from task 3 (column A). Change the form if necessary.**

1. … … is usually white and is thinner than pipe used for water supply applications since it is not exposed to a pressurized liquid.
2. In order to prevent another disaster like this one, the … was built to hold in the waters of Lake Okeechobee.
3. Our latest machine can … a hundred gallons a minute.
4. The potential for soil erosion by water is affected by … … .
5. A shallow … must be dug for the pipe that will channel the laundry water to the plants.
6. She accidentally dropped her ring down a … in the road.
7. The people sinking in the … can't save each other.
8. The border here is marked by a stream, more like a roadside … .
9. A … … is created by repeated use of moldboard or disk plows at the same depth.
10. Proper … of land is of great importance for good quality food.

**VI. Complete the following ideas according to the text (see task 2). Expand them if necessary.**

1. Land drainage is … .
2. Land drainage allows … .
3. Land drainage has a long history: … .
4. Modern drainage technologies apply … .
5. Land drainage is performed through … .
6. The main criteria used in the calculations of the drainage canal sizes and drainage parameters are … .
7. Envelope filter materials (sand, copra) are used to … .
8. The construction of subsurface drainage is performed in … .

**VII. Work in small groups. Prepare a five-minute presentation about the construction of:**

1. open canals;
2. subsurface plastic drains;
3. subsurface ceramic drains;
4. subsurface tile drains.

## INTERESTING FACTS ABOUT CANALS

**I. Read the text below. What fact(s) about drainage canals is/are the most interesting from your viewpoint? Why?**

1. The best examples of canals for draining land are found in Holland, where much of the country is below sea-level. Dams are used to prevent flooding and since 1932 over 300,000 acres of land have been drained. In winter the Dutch people use the frozen canals for ice-skating.
2. In a hot dry country such as Egypt water is scarce, and to prevent the land from becoming dry long canals are built from dams. These canals must be continually kept open, for the Egyptian farms and cotton fields cannot exist without these life lines of water.

3. Many inland waterways are used for the transport of heavy goods by barges. This method of carrying materials is not so widely used now, for although it is cheaper, it has the disadvantage of being much slower. Speed is regulated by the number of bridges and locks which the barges encounter.

4. Two notable canals for ships in Europe are the Corinth Canal and the Kiel Canal. The former was built in 1893 across the solid rocks of the isthmus of Corinth. Bridges from the tops of the steep sides of the canal connect north and south Greece. The Kiel Canal, which also has no locks, was built two years later and it gives the countries of the Baltic Sea quicker access to the west.

5. Venice, at the Adriatic Sea, is one of the most beautiful cities in Europe, for it has many canals instead of streets. Long narrow boats with curved ends, called "gondolas", carry passengers and goods from one part of the city to another. The gondolas are supplied with lanterns, which at night make the canals very colourful and romantic. A peculiar custom of former days was that the Ruler of Venice used to throw a ring into the water each year to show that the city was wed to the sea.

6. One of the greatest arteries of world trade is the Suez Canal separating the two continents of Asia and Africa. As trade with India increased, the overland route across Suez became regular but very expensive. In 1859, the French engineer, Ferdinand de Lesseps, started to cut a passage through this flat desert country. Ten years later, the first sea-going ships passed through the canal, which is a hundred miles long and has no locks, thus completing a direct water route the North Atlantic to the Indian Ocean. The journey along the canal takes about fifteen hours and shortens the distance from Britain to the East by about 4,000 miles. The canal belongs to Egypt and is a vital waterway serving the merchants fleets of many nations.

7. The Great Lakes which lie between Canada and the United States have become part of the world's ocean highways for it is now possible for big ship to sail up the Saint Lawrence Canal to the ports of Toronto, Cleveland and Chicago. A 218 mile canal joins the Atlantic with these Great Lakes which contain half of all the fresh water in the world. There are seven locks, five on the Canadian side and two on the United States side. Bridges needed to be raised fifty feet to allow big ship traffic to pass and, indeed, from Montreal, these ocean-going vessels are raised 246 feet above the sealevel to Lake Ontario. The Saint Lawrence Canal takes the ships 2,200 miles inland, half-way across the North American continent and deep into the heart of Canada.

**II. Find any other interesting facts about natural channels, man-made or drainage canals.**

## ANCIENT CANAL BUILDERS

**I. Read and translate the text, use a dictionary if necessary.**

Irrigation was extensively practiced by the earliest civilizations known. Ruins of dams, canals and other structures can be found in many countries. Much of this irrigated agriculture failed to achieve full success and ultimately disappeared because of problems arising from excessive applications of water. Unfortunately in some recently established irrigation projects these same problems continue to reduce crop yields and may ultimately cause the failure of the project.

In the Salt River Valley (Southern Arizona) there are ruins of an extensive irrigation system. It is known to have been over 240 km in length. It consisted of several main ca-

nals, each having many branch canals and ditches. Intakes of the main canals were far enough upstream to provide sufficient "fall" for successful irrigation of respective areas. Many of these canals reach depths of 10 feet or more. Erosion and salting destructed the branches long ago. Some of these canals are still in use and contribute to the present irrigation facilities of the Salt River Valley.

Who were the ancient canal builders? When the first white men came into the region and asked the native Indians this question they received the reply "Ho-ho-kam" meaning nothing more or less than "those who have disappeared". As indicated by their numerous irrigation canals, the Hohokams were agriculturists. While little is left due to the destruction caused by time and the elements, their amazing system of irrigation canals, their utilization of clay, stone and other materials place them on an advanced plane of culture. The approximate period of their existence and the probable time and cause of their disappearance now are known. The Hohokams are believed to have come into Southern Arizona at the beginning of our era. They transformed the area arid by nature into a most fertile and productive region. Around 1400 A.D. they disappeared from the region.

In view of the fact than this transformation is due entirely to irrigation it may appear contradictory to suggest that irrigation was the principal cause of the ruin of the Hohokam peoples. Nevertheless it is so. The Salt River Valley is underlain with rock impervious to water.

One fifth of the total irrigation water in the valley enters the ground as seepage and creates the water-table at the rate of from 3 to 5 inches a year. The ancients had no drainage facilities, pumps or otherwise. They could not lower the water-table. The result was inevitable excessive water and salinity, waterlogged soil and decrease of productivity.

Today there remain only old canals and the ruins of once impressive structures.

**II. Match the words and their English equivalents.**

| | |
|---|---|
| 1. water application | a. глина |
| 2. branch canal | b. плодородный |
| 3. ditch | c. канава (дренажная), дрена |
| 4. plane | d. горная порода |
| 5. fall | e. полив |
| 6. fertile | f. засушливый |
| 7. clay | g. просачивание; инфильтрация |
| 8. arid | h. распределительный канал |
| 9. impervious | i. уровень |
| 10. rock | j. водонепроницаемый |
| 11. seepage | k. водозабор; впуск, подвод |
| 12. intake | l. напор (воды), падение водотока |

**III. Match the words and their definitions.**

| | |
|---|---|
| 1. clay | a. having little or no rain; too dry to support vegetation |
| 2. fertile | b. the solid mineral material forming part of the surface of the earth |
| 3. arid | c. a sticky fine-grained earth |
| 4. rock | d. an artificial waterway constructed to allow the passage of boats or ships inland or to convey water for irrigation |
| 5. canal | e. producing or capable of producing abundant vegetation or crops |
| 6. valley | f. a large natural stream of water flowing channel to the sea, a lake, or another stream |

7. river g. a low area of land between hills or mountains, typically with a river or stream flowing through it

**IV. Match the words with opposite meaning.**

| | |
|---|---|
| early | failure |
| success | to increase |
| to reduce | sterile |
| to appear | foreign |
| to construct | late |
| native | drainage |
| fertile | to disappear |
| irrigation | to destruct |

**V. Match the words with similar meaning.**

| | |
|---|---|
| fertile | yield |
| ancient | change |
| to reduce | productive |
| transformation | to decrease |
| crop | shortage |
| excess | old |

**VI. Choose the correct variant.**

1. The ancient canal builders were …
a) the inhabitants of the Salt River Valley;
b) the Hohokams;
c) the Americans

2. The word "Hohokam" means …
a) "those who built the first canal";
b) "those who live in Southern Arizona now";
c) "those who have disappeared"

3. The Hohokams disappeared from the region…
a) around 1400 A.D.;
b) around 800 A.D. ;
c) around 1400 B.C.

4. The Hohokam peoples couldn't lower the water table because …
a) they had no necessary facilities and equipment;
b) the Salt River Valley is underlain with hard rock;
c) they were lazy and didn't want to do anything

**VII.** ***Determine if the following statements are true or false. Correct the false ones.***

1. Irrigation wasn't practiced by the earliest civilizations.

2. Ruins of dams, canals and other structures can be found only in the Salt River Valley.

3. The earliest irrigated agriculture disappeared because of problems arising from waterlogged soil and decrease of productivity.

4. All the canals in the Salt River Valley were destructed by salting and erosion.

5. Irrigation helped Hohokam peoples to make their arid area more fertile and productive region but at the same time it was the principal cause of their ruin.

**VIII.** ***Answer the questions.***

1) What can prove that irrigation was extensively practiced by the earliest civilizations?
2) Why did much of irrigated agriculture faile to achieve full success?
3) what was found in the Salt River Valley in Southern Arizona?
4) What did the structure consist of?
5) Are any of these canals still in use?
6) What does the word "Ho-ho-kam" mean?
7) Who were the Hohokams?
8) When did they come and disappear from the region?
9) What was the principal cause of the ruin of the Hohokam peoples?
10) What was the result of the total irrigation? Why were the ancients not able to cope with it?

**IX. Reproduce the contents of the text.**

**X. Read and translate the following text without a dictionary.**

Differences in Drainage in Humid and Arid Areas

Drainage in humid areas has to do largely with excess water resulting from precipitation; in arid and semiarid areas, the need for drainage arises principally from irrigation, with foreign ground water an important source in some areas.

Surface-drainage systems may be required in either humid or in irrigated areas. Surface drainage ia usually an integral part of irrigation systems on slowly permeable soils or in areas of high precipitation rates.

The purpose of subsurface drainage is to lower the water table to a point where it will not interfere with plant growth and development. The minimum depth at which the water level should be maintained varies according to both the crop requirement and the soil. One of the principal factors in the height of the water table in arid areas is control of salinity and alkalinity in the soil and ground water. This is a major reason for theadifference in the subsurface drainage of humid and of arid climates.

The depth of drains in humid climates is generally 3 to 5 feet. Water is relatively pure, there usually is a natural excess of water over plant requirements, and there is a net downward movement of ground water.

Soils in semiarid or arid climates require subsurface drains at least 5 to 7 feet deep. Most of the water needed by the crop is added by irrigation. Usually ground water is somewhat saline because of salts in the soil, the irrigation water, or both. A water table as high as 24-30 inches below the surface, suitable in many humid areas, would create a harmful salt concentration in the root zone in arid areas.

## 2.6. BUILDING MATERIALS FOR AMELIORATION AND WATER SUPPLY CONSTRUCTION

## CONCRETE

**I. Pronounce the following words correctly and learn their meanings.**

1. concrete ['kɔŋkri:t] – бетон

2. property ['prɔpətɪ] – свойство
3. monolithic unit [ˌmɔnə'lɪθɪk 'juːnɪt] – монолитный блок
4. aggregate ['ægrɪgət] – заполнитель
5. limestone ['laɪmstəun] – известняк
6. clay [kleɪ] – глина
7. powder ['paudə] – порошок
8. raw materials [rɔː mə'tɪərɪəlz] – сырьё
9. obtain [əb'teɪn] – получать, добывать
10. blast furnace [blɑːst ˈfɜːnɪs] – доменная печь, домна
11. thoroughly ['θʌrəlɪ] – тщательно
12. artificial [ˌɑːtɪ'fɪʃ(ə)l] – искусственный
13. curing ['kjuə(r)ɪŋ] – затвердевание
14. grading ['greɪdɪŋ] – сортировка
15. fire-resistant ['faɪərɪ'zɪst(ə)nt] – огнеупорный
16. reinforced concrete [ˌriːɪn'fɔːstˌkɔnkriːt] – железобетон
17. steel [stiːl] – сталь
18. dam [dæm] – дамба, плотина, насыпь
19. dock-wall [dɒk wɔːl] – причальная стенка
20. girder ['gɜːdə] – балка, перекладина
21. beam [biːm] – балка, бревно
22. alkali-slag concrete [ˈælkəlaɪ slæg ˌkɔnkriːt] – щелочной-шлакобетон
23. slag [slæg] –шлак
24. sandy loam [ˈsændɪ ləʊm] – песчаный суглинок
25. conventional [kən'ven(t)ʃ(ə)n(ə)l] – обычный, традиционный
26. pavement ['peɪvmənt] – тротуар
27. acid-proof ['æsɪdpruːf] – кислотостойкий

**II. Read the text and find the key sentences in all the passages of the text.**

It is difficult to imagine modern structure without concrete. Concrete is the very building material which led to great structural innovations. The most important quality of concrete is its property to be formed into large and strong monolithic units. The basic materials for making concrete are cement, aggregate and water. Cement is the most essential material and the most important one for making concrete of high quality.

Cement is made of limestone and clay. It is burnt (calcined) at high temperature and ground up into powder. Depending on the kind and composition of the raw materials different types of cement are obtained. Portland cement, blast furnace cement are suitable for putting up marine structures.

Concrete is made by mixing cement, water, sand and gravel in the right amount. As soon as it is thoroughly mixed it is poured into forms that hold it in place until it hardens. The crystals forming in the process of making concrete stick together in a very hard artificial stone. Cement starts hardening one hour after the water has been added and the process of hardening lasts for about twenty-eight days. This process is called concrete curing.

The characteristics of concrete depend upon the quality of the materials used, grading of the aggregates, proportioning and amount of water. The most important requirements for concrete are: it should be hard, strong, durable, fire-resistant and economical.

Concrete can be divided into two classes: mass or plain concrete and reinforced concrete (ferro-concrete) where it is necessary to introduce steel. Plain or mass concrete can be used for almost all building purposes. Ferro-concrete is used in building bridges and

arches, dams and dock-walls, for structures under water, for foundations, columns, girders, beams. The use of concrete and ferro-concrete is almost universal.

Builders now produce two types of new building materials: alkali-slag concrete and silica concrete. In alkali-slag concrete cement is replaced by a mixture of granulated blast-furnace slags and sodium and potassium compounds. The fillers can be sand or sandy loam containing various amounts of clay, which usually cannot be used with conventional cement. The new material has been tested successfully and is now being used for irrigation systems, roads, pavements and other structures. Silica concrete is light, fire-resistant and acid-proof. It contains no cement whatever. Silica concrete is widely used in aviation and in under water constructions.

**III. Complete the following sentences.**

1. It is difficult to imagine modern structure without_____.
2. The most important quality of concrete is its property to be formed into large and strong_____.
3. Depending on the kind and composition of the raw materials different types of cement are _____.
4. The most important requirements for concrete are: it should be hard, strong, durable, economical and _____.
5. Concrete can be divided into two classes: mass concrete and _____.
6. Ferro-concrete is used in building bridges and arches, _____.
7. In alkali-slag concrete cement is replaced by a mixture of granulated_____.
8. Silica concrete is light, fire-resistant and _____.

Possible answers: acid-proof**;** obtained; fire-resistant; concrete; dams and dockwalls; reinforced concrete; blast-furnace slags; monolithic units

**IV. Find the synonym to the first word in each row.**

1. aggregate – booster – filler – magnifier
2. grading – assessment – level – sorting
3. conventional – ordinary – unusual – strange
4. thoroughly – quickly – elaborately – clearly
5. slag – scoria – chalk – stone
6. girder – sword – cord – beam
7. fire-resistant – fire-melting – impenetrable – liquid

**V. Find the suitable meaning to each of the words.**

1. concrete
2. limestone
3. clay
4. grading
5. obtain
6. girder
7. curing

a) the process of becoming hard or solid by cooling or drying or crystallization
b) the main horizontal support of a structure which supports smaller beams
c) to come into possession of something
d) a building material made from a mixture of broken stone or gravel, sand, cement, and

water
e) a stiff, sticky fine-grained earth that can be moulded
f) a rock that is formed chiefly by accumulation of organic remains
g) to classify or sort

**VI. Give the comparative and superlative degrees of the following.**

big, long, late, heavy, strong, dry, short, interesting, beautiful, pleasant, important, little, large, good, bad, well

**VII. Answer the following questions.**

1. Is it possible to put up modern structures using concrete?
2. Do you know what the most important quality of concrete is?
3. The basic materials for making concrete are cement, aggregate and water, aren't they?
4. What is the most essential material for making concrete?
5. Can we make cement if we take limestone and clay?
6. How is cement made?
7. What are Portland and blast furnace cement suitable for?
8. When does cement start hardening?
9. How long does the process of hardening last?
10. Can you tell us what process is called concrete hardening?
11. Are you able to say what the characteristics of concrete depend on?
12. Should concrete be hard, strong, durable, fire-resistant and economical?
13. What two classes can concrete be divided into?
14. Is the use of concrete and ferro-concrete most universal?
15. Do builders now produce two or three types of new building materials?
16. Where is silica concrete widely used?

**VIII. Make a plan of the text "Concrete" and report to your groupmates.**

## REINFORCED CONCRETE

**I. Pronounce the following words correctly and learn their meaning.**

1. reinforced concrete [ˌriːɪn'fɔːstˌkɔnkriːt] – железобетон
2. bar [bɑː] – прутья
3. mesh [meʃ] – сетка
4. embedded [ɪmˈbedɪd] – встроенный
5. tamp [tæmp] – утрамбовать
6. gain [geɪn] – получать, приобретать
7. evident [ˈevɪdənt] – очевидный
8. rigid [ˈrɪʤɪd] – твёрдый, жесткий
9. compression [kəmˈpreʃn] – сжатие
10. expose [ɪkˈspəʊz] – выявить, раскрыть
11. shrinkage ['ʃrɪŋkɪʤ] – сжатие, уменьшение
12. restraining [rɪsˈtreɪnɪŋ] – повторное окрашивание
13. tensile [ˈtensaɪl] – растяжимый, эластичный
14. homogeneity [həʊməʤɪˈniːɪtɪ] – однородность

**II. Read the text and identify the main properties of reinforced concrete.**

Reinforced concrete is a combination of two of the strongest structural materials,

concrete and steel. This term is applied to a construction in which steel bars or heavy steel mesh are properly embedded in concrete. The steel is put in position and concrete is poured around and over it, then tamped in place so that the steel is completely embedded. When the concrete hardens and sets, the resulting material gains great strength. This new structural concrete came into practical application at the turn of the 19th century. The first results of the tests of the reinforced concrete beams were published in 1887. Since that time the development of reinforced concrete work has made great progress. And the reasons of this progress are quite evident. Concrete has poor elastic and tensional properties, but it is rigid, strong in compression, durable under and above ground and in the presence or absence of air and water, it increases its strength with age, it is fireproof.

Steel has great tensional, compressive and elastic properties, but it is not durable being exposed to moisture, it loses its strength with age, or being subjected to high temperature. So, what is the effect of the addition of steel reinforcement to concrete?

Steel does not undergo shrinkage or drying but concrete does and therefore the steel acts as a restraining medium in a reinforced concrete member. Shrinkage causes tensile stresses in the concrete which are balanced by compressive stresses in the steel. For getting the best from reinforced concrete the following consideration should be kept in mind:

1. For general use the most suitable proportions of cement and aggregate are: 1 part cement, 2 parts sand and 4 parts of gravel.

2. Only fresh water free from organic matter should be used for reinforced work. Sea water is not allowed.

3. Homogeneity of the concrete is a very important requirement. Steel constructions with reinforced concrete have become the most important building materials invented in centuries and they have given modern architecture its peculiar features.

**III. What is the English for:**

1. применять термин; 2. заливать бетон; 3. набирать прочность; 4. быть опубликованным; 5. увеличивать, уменьшать прочность; 6. подвергаться усадке; 7. вызывать растягивающие усилия; 8. использовать железобетон

**IV. Complete the sentences using the English equivalents for the Russian words in brackets.**

1. The resulting material gains great strength when (он затвердевает).
2. At the turn of the 19th century new structural concrete (стал применяться).
3. Steel has great tensional, compressive and elastic properties but (со временем она теряет прочность).
4. Steel does not undergo shrinkage and therefore it acts (как сдерживающая среда).
5. Shrinkage causes tensile stresses in concrete which are balanced (сжимающими усилиями в стали).

**V. Find the synonym to the first word in each row.**

1. aggregate – booster – filler – magnifier
2. grading – assessment – level – sorting
3. conventional – ordinary – unusual – strange
4. thoroughly – quickly – elaborately – clearly
5. slag – scoria – chalk – stone
6. girder – sword – cord – beam
7. fire-resistant – fire-melting – impenetrable – liquid

**VI. Make up sentences using the following words.**

1. to combine – combination
2. strong – strength – to strengthen
3. hard – to harden – hardness
4. tension – tensional
5. compression – compressive
6. durable – durability
7. to apply – application
8. to shrink – shrinkage

**VII. Answer the following questions.**

1. Is reinforced concrete a combination of two of the strongest structural materials?
2. What is the process of making reinforced concrete?
3. When did this new structural concrete come into practical application?
4. Since when has the development of reinforced concrete work made good progress?
5. Can you name the properties of concrete?
6. Will you say a few words about the properties of steel?
7. Does concrete increase its strength with age?
8. What about steel?
9. Is it true that steel does not undergo shrinkage or drying but concrete does?
10. Shrinkage causes tensile stresses in the concrete, doesn't it?

**VIII. a) Write a summary of the text in English.**
**b) Write a review of the recent developments in your field or research.**

## PROPERTIES OF BUILDING MATERIALS

**I. Pronounce the following words correctly and learn their meanings.**

1. durable ['djuərəbl] - надёжный, прочный
2. fasten ['fɑːs(ə)n] - затвердевать
3. wood [wʊd] - древесина
4. decay [dɪˈkeɪ] - распадаться
5. porosity [pɔː'rɔsətɪ] - пористость
6. insulation [ˌɪnsjə'leɪʃ(ə)n] - изоляционный материал
7. refer [rɪ'fɜː] - относиться
8. crushed [krʌʃt] - дроблёный
9. labour ['leɪbə] - труд
10. lime [laɪm] - известь
11. auxiliary [ɔːg'zɪlɪ(ə)rɪ] - вспомогательный
12. bearing structure [ˈbe(ə)rɪŋ ˈstrʌkʧə] - несущая конструкция

**II. Read the text and identify the main properties of reinforced concrete.**

Materials that are used for structural purposes should meet several requirements. In most cases it is important that they should be hard, durable, fire-resistant and easily fastened together. The most commonly used materials are steel, concrete, stone, wood and brick. They differ in hardness, durability and fire-resistance. Wood is the most ancient structural material. It is light, cheap and easy to work.

But wood has certain disadvantages: it burns and decays. Stone belongs to one of the oldest building materials used by man. It is characteristic of many properties. They are mechanical strength, compactness, porosity, sound and heat insulation and fire-resistance.

Bricks were known many thousands of years ago. They are the examples of artificial building materials. Concrete is referred to as one of the most important building materials. Concrete is a mixture of cement, sand, crushed stone and water.

Steel has come into general use with the development of industry. Its manufacture requires special equipment and skilled labour.

Plastics combine all the fine characteristics of a building material with good insulating properties. It is no wonder that the architects and engineers have turned to them to add beauty to modern homes and offices.

All building materials are divided into three main groups: 1) Main building materials such as rocks and artificial stones, timber and metals. 2) Binding materials such as lime, gypsum and cement. 3) Secondary or auxiliary materials which are used for the interior parts of the buildings.

We use many building materials for bearing structures. Binding materials are used for making artificial stone and for joining different planes. For the interior finish of the building we use secondary materials.

**III. Insert the missed parts of the sentences.**

1. In most cases it is important that they should be hard, durable, fire-resistant and easily _____ together.
2. Plastics combine all the fine characteristics of a building material with good _____ properties.
3. Main building materials such as rocks and _____ , timber and metals.
4. Binding materials such as_____, gypsum and cement.
5. Secondary or _____materials which are used for the interior parts of the buildings.
6. Wood is the most ancient _____ material.
7. Such building materials as steel, concrete, stone, wood and brick differ in hardness, _____and fire-resistance.

Possible answers: structural; lime; auxiliary; insulating; fastened; durability; artificial stones

**IV. Find the suitable meaning to each of the words.**

1. fasten
2. labour
3. decay
4. auxiliary
5. insulation
6. bearing structure
7. durable

a) a material that slows or prevents the flow of heat
b) one that bears the weight of the floor or roof structure above it
c) productive work, physical toil done for wages
d) strong and lasts a long time without breaking or becoming weaker
e) to make something stay firmly in place

f) to undergo destructive dissolution
g) providing supplementary or additional help and support

**V. Role play the dialogs in pairs.**

Dialogue l

A.: Plastics have appeared comparatively recently, haven't they?
B.: It goes without saying that they have.
A.: Why is it that they've found a wide application in building?
B.: Not only in building. They've found a wide application in many industrial fields.
A.: How interesting! I'm sure its because of their inherent valuable and diverse properties. Don't you think so?
B.: You are quite right! Plastics possess valuable and diverse properties.

Dialogue 2

A.: How are plastics divided in respect to their properties?
B.: They are divided into rigid, semi-rigid, soft and plastic.
A.: And in respect to the number of constituents?
B.: You see, in respect to the number of constituents they may be classified as simple and complex.

**VI. Answer the following questions.**

1. What are the properties of the building materials?
2. What are the most commonly used building materials?
3. Do building materials differ from each other?
4. What can you say about the most ancient building materials?
5. What can you say about bricks?
6. Is concrete an artificial or natural building material?
7. Into what groups do we divide building materials?
8. Can you give an example of a binding material?
9. What artificial building materials do you know?
10. What natural building materials do you know?

**VII. a) Prepare a report "Properties of building materials". Highlight at list 5 kinds of building materials, their advantages and disadvantages.**

## FROM THE HISTORY OF CONCRETE

**I. Pronounce the following words correctly and learn their meanings.**

1. inert [ɪ'nɜːt] – неактивный, инертный
2. resist [rɪˈzɪstɪŋ] – сопротивляться, противостоять
3. tensile [ˈtensaɪl] - растяжимый
4. lack [læk] - отсутствие
5. reinforce [ˌriːɪn'fɔːs] – армировать
6. slab [slæb] - плита, панель
7. tensile ['ten(t)saɪl] - растяжимый; эластичный
8. aqueduct ['ækwɪdʌkt] – водопровод, труба
9. iron ['aɪən] - железо

10. rod [rɔd] - брус, рейка

**II. Read the text and identify the main properties of reinforced concrete.**

Concrete is an artificial stone. It is made by mixing a paste of cement and water with sand and crushed stone, gravel, or other inert material. After this plastic mixture is placed in forms, a chemical action takes place and the mass hardens. Concrete, although strong in compression, is relatively weak in resisting tensile and shearing stress which develop in structural members. To overcome this lack of resistance, steel bars are placed in the concrete at the proper positions, and the result is reinforced concrete.

In beams and slabs the principal function of the concrete is to resist compressive stresses, whereas the steel bars resist tensile stresses.

Mass or plain concrete dates from very early days. It was employed by the Egyptians, Romans and Greeks in the construction of aqueducts and bridges, in the construction of roads and town walls. Romans used it even in under-water structures some of which have survived till our time. A large part of the Great Chinese Wall (the 3$^{rd}$ century before our era) was also built of concrete.

The concrete remains of the foundations of buildings built several thousand years ago have been found in Mexico. As cement was not known in those times, concrete was made of clay and later of gypsum and lime Nowadays concrete is made in up-todate machinery with very careful regulation of the proportion of the mix.

The idea of strengthening concrete by a network of small iron rods was developed in the 19th century, and ferro-concrete was introduced into engineering practice.

**III. Complete the sentences:**

1. It is made by mixing a paste of cement and water with sand and crushed stone, gravel, or other _____.
2. The concrete remains of the _____.
3. To overcome this lack of resistance, steel bars are placed in the concrete at the proper positions, and the result is_____.
4. The idea of strengthening concrete by a network of small iron rods was developed_____.
5. It was employed by the Egyptians, Romans and Greeks in the construction of _____.
6. After this plastic mixture is placed in forms, a chemical action takes place and the mass _____.
7. A large part of the Great Chinese Wall (the 3rd century before our era) was also built of _____.

Possible answers: reinforced concrete; inert material; hardens; aqueducts and bridges; foundations of buildings; in the 19th century; concrete

**IV. Find the suitable meaning to each of the words.**

| | |
|---|---|
| aqueduct | a) capable of being drawn out or stretched |
| rod | b) a large, thick, flat piece of stone or concrete, typically square or rectangular in shape |
| reinforce | c) a strong, hard magnetic silvery-grey metal |
| tensile | d) without the action or effect of something |
| slab | e) strengthen or support (an object or substance), especially with additional material |

| | |
|---|---|
| iron | f) a thin straight bar, especially of wood or metal |
| resist | g) an artificial canal for conveying water |

**V. Role play the dialogs in pairs.**

Dialogue 1

A.: There's something I want to ask you. May I?
B.: Sure, you may! Why not? Go ahead!
A.: What is the most important component of concrete?
B.: Do you mean to say that you don't know?
A.: Honestly, I don't! Tell me, please!
B.: OK, listen. The most important component of concrete is cement.

Dialogue 2

A.: May concrete be considered an artificial conglomerate stone?
B.: Certainly, it may! Why not? A.: You know how it's made, don't you?
B.: Sure, I do. It's made by uniting cement and water into a paste.
A.: What about sand? Isn't sand used?
B.: Of course, sand is used! How can you make concrete without sand?

Dialogue 3

A.: Concrete has great compressive strength, doesn't it?
B.: Quite true, it has enormous compressive strength!
A.: Does it have great ability to withstand tension?
B.: Tension, you say? It has very little ability to withstand tension.

**VI. Answer the following questions.**

1. What are the properties of concrete?
2. Concrete, although strong in compression, is relatively weak in resisting tensile, isn't it?
3. How reinforced concrete is made?
4. What is the main function of concrete in beams and slabs?
5. What is the most ancient type of concrete?
6. Romans used concrete even in under-water structures some of which have survived till our time, didn't they?
7. What material remains of the buildings foundations built several thousand years ago in Mexico?
8. The idea of strengthening concrete by a network of small iron rods was developed in the 20th century, wasn't it?

**VII. Make a plan "From the history of concrete" and report to your groupmates.**

## METALS AND CONCRETE

**I. Pronounce the following words correctly and learn their meanings.**

1. ferrous metals [ˈferəs metlz] - чёрные металлы
2. nonferrous metals [nɒnˈferəs metlz] - цветные металлы
3. alloy ['ælɔɪ] - сплав
4. lustre ['lʌstə] - блеск

5. forge [fɔːʤ] - ковать
6. pull [pul] - вытягивать, растягивать
7. conductor [kənˈdʌktə] - проводник
8. cast iron [kɑːst ˈaɪən] - чугун
9. compress [ˈkɒmpres] - сжимать
10. load [ləʊd] - груз
11. impose [ɪm'pəuz] - облагать
12. partition [pɑːˈtɪʃn] - перегородка
13. reinforcement [riːɪnˈfɔːsmənt] - укрепление
14. corrosion-resistant [kəˈrəʊʒ(ə)nrɪˈzɪstənt] - антикоррозионный
15. stainless [ˈsteɪnlɪs] - нержавеющий
16. cutlery [ˈkʌtlərɪ] - столовые приборы
17. valve [vælv] - клапан, вентиль
18. ball-bearing [bɔːl ˈbe(ə)rɪŋ] - шариковый подшипник
19. conductivity [kɒndʌkˈtɪvɪtɪ] - проводимость

**II. Read the text and identify the main properties of reinforced concrete.**

All metals are divided into ferrous metals and non-ferrous metals. Ferrous metals include iron, steel and its alloys. Non-ferrous metals are metals and alloys the main component of which is not iron but some other element. Metals, in general, and especially ferrous metals are of good importance in variations.

Metals possess the following properties:

1) All metals have specific metallic lustre. 2) They can be forged. 3) Metals can be pulled. 4) All metals, except mercury, are hard substances. 5) They can be melted. 6) In general, metals are good conductors of electricity.

These characteristics are possessed by all metals but the metals themselves differ from one another. Steel and cast iron are referred to the group of ferrous metals. Cast iron is the cheapest of the ferrous metals. It is chiefly used in building for compressed members of construction, as the supporting members.

When an engineer designs a steelwork he must carefully consider that the steel frame and every part of it should safely carry all the loads imposed upon it. The steel framework must be carefully hidden in walls, floors and partitions. It is steel and metal that is employed as reinforcement in modern ferroconcrete structures. In the curriculum of the Institute there is a special course on metal structures.

*Steel.* There are different kinds of steel. Alloyed steel (or special steel) is corrosion-resistant steel. This kind of steel is widely used in building. Stainless steel is also corrosion-resistant steel. It is used for cutlery, furnace parts, chemical plant equipment, valves and ball-bearings.

*Non-Ferrous Metals*. Non-ferrous metals have the following characteristics: high electric and heat conductivity, high corrosion resistance, non-magnetic qualities, light weight.

*Aluminium*. This is the oldest and best known light metal. It is used in aircraft, automobile, chemical and some other industries.

*Copper*. Copper is the best conductor of electricity. There are different alloys with copper. An alloy of copper and tin is called bronze. This metal is often used for making various ornaments.

**III. Find the suitable meaning to each of the words.**

1. load

2. forge
3. conductor
4. compress
5. corrosion-resistant
6. alloy
7. cast iron

a) the ability of a material to withstand contact with ambient natural factors
b) to reduce in size, quantity, or volume as if by squeezing
c) hard, brittle, nonmalleable (i.e. it cannot be bent, stretched or hammered into shape) and more fusible than steel
d) make or shape (a metal object) by heating it in a fire or furnace and hammering it
e) a metal made by combining two or more metallic elements
f) fill (a vehicle, ship, container) with a large amount of something
g) a substance or material that allows electricity to flow through it

**IV. Complete the sentences using the English equivalents for the Russian words in brackets.**

1. All metals are divided into (черные и цветные).
2. Ferrous metals include (железо, сталь и их сплавы).
3. Copper, aluminium and some other metals are referred to as (цветные металлы).
4. Metals in general, and especially ferrous metals are of (большое значение в строительстве).
5. All metals have specific metallic (блеск).
6. All metals, except mercury, are (твердые вещества).
7. All metals are good conductors of (электричества).
8. (Сталь и чугун) are referred to the group of ferrous metals.
9. (Чугун) is the cheapest of the ferrous metals.

**V. Translate into English orally.**

1. Медь и алюминий относятся к цветным металлам.
2. Все металлы, кроме ртути, твердые вещества.
3. Сталь широко используется в строительстве.
4. Сталь используется как арматура в железобетонных конструкциях.

**VI. Answer the following questions.**

1. What do ferrous metals include?
2. Is iron the main component of non-ferrous metals?
3. What properties do metals possess?
4. Do the metals themselves differ from one another?
5. Is cast iron the cheapest of the ferrous metals?
6. What must an engineer carefully consider when he designs a steelwork?
7. Where must the steel framework be carefully hidden?
8. Is alloyed steel corrosion-resistant steel?
9. What is it used for?
10. Is aluminium the oldest and best known light metal?
11. What is the best conductor of electricity?
12. An alloy of copper and tin is called bronze, isn't it?

**VII. Speak about metals and concrete with your groupmates in the form of a dialogue.**

## 2.7. ENVIRONMENTAL PROBLEMS

## ECOLOGICAL PROBLEMS

**I. Read and translate the text. Use a dictionary if necessary.**

Since ancient times Nature has served Man, being the source of his life. For thousands of years people lived in harmony with environment and it seemed to them that natural riches were unlimited. But with the development of civilization man's interference in nature began to increase.

Large cities with thousands of smoky industrial enterprises appear all over the world today. The by-products of their activity pollute the air we breathe, the water we drink, the land we grow grain and vegetables. Every year world industry pollutes the atmosphere with about 1,000 million ton of dust and other harmful substances. Many cities suffer from smog. Vast forests are cut and burn in fire. Their disappearance upsets the oxygen balance. As a result some rare species of animals, birds, fish and plants disappear forever, a number of rivers and lakes dry up.

The pollution of air and the world's ocean, destruction of the ozone layer is the result of man's careless interaction with nature, a sign of ecological crises.

The most horrible ecological disaster befell Belarus and its people in the result of the Chernobyl tragedy in April 1986. About 18 per cent of the territory of Belarus was polluted with radioactive substances. A great damage has been done to the republic's agriculture, forests and people's health. The consequences of this explosion at the atomic power-station are tragic for the Belarusian nation.

Environmental protection is a universal concern. That is why serious measures to create a system of ecological security should be taken.

Some progress has been already made in this direction. As many as 159 countries – members of the UNO – have set up environmental protection agencies. Numerous conferences have been held by these agencies to discuss questions of ecologically poor regions including the Aral Sea, the South Urals, Kuzbass, Donbass, Semipalatinsk and Chernobyl. An international environmental research centre has been set up on Lake Baikal. The international organization *Greenpeace* is also doing much to preserve the environment.

But these are only the initial steps and they must be carried forward to protect nature, to save life on the planet not only for the sake of the present but also for the future generations.

**II. Match the words and their Russian equivalents.**

| | |
|---|---|
| 1. nature | a. небрежный |
| 2. source | b. вред |
| 3. environment | c. источник |
| 4. interference | d. последствие |
| 5. interaction | e. предотвращать |
| 6. by-product | f. защита, охрана |
| 7. to pollute | g. природа |

| | |
|---|---|
| 8. harmful | h. спасать |
| 9. careless | i. побочный продукт |
| 10. to prevent | j. принимать меры |
| 11. to upset | k. возрасти, увеличить (ся) |
| 12. substance | l. окружающая среда |
| 13. rare | m. забота |
| 14. destruction | n. вредный |
| 15. damage | o. нарушать |
| 16. consequence | p. загрязнять |
| 17. protection | q. вмешательство |
| 18. concern | r. взаимодействие |
| 19. to take measures | s. вещество |
| 20. security | t. разрушение |
| 21. to save | u. безопасность |
| 22. to increase | v. редкий |

**III. Form the words according to the model.**
Model: to protect – protection

| | |
|---|---|
| to pollute - | to destruct - |
| to prevent - | to organize - |
| to interact - | to absorb - |
| to produce - | to civilize - |
| to consider - | to limit - |

**IV. Find the words similar in meaning.**

| | |
|---|---|
| pollution | to break |
| to upset | to grow |
| consequence | to rescue |
| harm | to make dirty |
| careless | safety |
| rare | contamination |
| substance | uncommon |
| to save | negligent |
| security | matter |
| to increase | aftereffect |
| to pollute | damage |

**V. Find the word the translation of which is given at the beginning of each row.**

| | |
|---|---|
| 1. охрана, защита | a) security, b) nature, c) consequence |
| 2. окружающая среда | a) nature, b) damage, c) environment |
| 3. нарушать | a) to save, b) to upset, c) to prevent |
| 4. загрязнять | a) to prevent, b) to increase, c) to pollute |
| 5. последствие | a) protection, b) measure, c) consequence |
| 6. вмешательство | a) interference, b) interaction, c) increase |
| 7. вещество | a) environment, b) substance, c) security |
| 8. предотвращать | a) to prevent, b) to save, c) to create |

**VI. Match the words and their definitions.**

| | |
|---|---|
| 1. actions and things that cause pollution | a. ecology |
| 2. all the living and nonliving things surrounding an individual or a community | b. pollution |
| 3. the dirtying of the air, water, or soil by chemicals or waste products | c. environment |
| 4. the study of living organisms in relation to their environment | d. pollutants |

**VII. Translate into English words and word combinations in brackets.**

1. We have upset nature's sensitive equilibrium releasing (вредные вещества) into the air.
2. Pollution is the (последствие) of the development of civilization.
3. Water (загрязнение) can lead to shortages of safe drinking water.
4. For hundreds of thousands of years the human race has thriven in Earth's (окружающая среда).
5. The matters of people's great (заботы) nowadays are atmosphere and climate changes, freshwater (источники) and chemical (безопасность).
6. Environmental protection agencies take urgent (меры) to avoid ecological catastrophe.

**VIII. Complete the sentences.**

1. … of the activity of industrial enterprises pollute our water and land.
2. The result of air pollution is … .
3. Industry pollutes the atmosphere with about 1,000 million ton of dust and … .
4. Some rare species of animals, birds, fish and plants disappear in the result of …
5. … is the result of man's careless interaction with nature.
6. In the result of the Chernobyl tragedy Belarus … .
7. The consequences of the Chernobyl explosion are the following … .
8. Environmental protection is a universal concern, that's why … should be taken.

**IX.Answer the questions.**

1. What's the source of people's life?
2. People have never lived in harmony with nature, haven't they?
3. Has man's interference in nature increased with the development of civilization? What has it led to?
4. Why did some species of animals, birds, plants disappear from the Earth?
5. What is the result of man's careless interaction with nature?
6. What are the consequences of the Chernobyl tragedy?
7. What has been done to solve ecological problems?
8. Is international cooperation necessary to create a system of ecological security? Why do you think so?

**X. Using the information from the text speak on the following points.**

1. How the human race has upset the nature's equilibrium.
2. The impact of pollution on the life on the Earth.

3. Measures to improve the ecological situation.

**XI. Read the following text and say what new facts you have learnt from it.**

The Acute Problems of Ecology

Our ancestors considered the Earth's resources to be boundless and endless. We have no right to blame our ancestors for their ecological ignorance: they fought to live.

Even in the 19th century when the word "ecology" was born people continued to use nature as consumers, considering Man to be "lord and king" of nature and not the child.

In the 20th century with the rapid growth of science and technology human achievements in conquering nature became so great that man's economic activities began to produce an increasingly negative effect on the biosphere.

People's striving to reach an immediate objective, their consumer attitude to nature in disregard of natural laws break natural balance. According to the International Union for Protection of Nature 76 species of animals and some hundred species of plants have disappeared from the planet in the course of the last 60 years. 132 mammal and 26 bird species face extinction not so much due to hunting as due to the pollution of the biosphere.

The destruction of nature gradually led to the loss of the most essential element of existence, a healthy biological habitat. Environmental pollution increases the cases of disease, raises the cost of medical services, and reduces the life-span of a man. By now the pollution and poisoning of the soil, water and air have reached a critical level.

Environmental pollution has become a significant obstacle to economic growth. The discharge of dust and gas into the atmosphere returns to the Earth in the form of "acid rain" and affects crop, the quality of forests, the amount of fish. To this we can add the rise of chemicals, radioactivity, noise and other types of pollution.

Economic, social, technological and biological processes have become so interdependent that modern production must be seen as a complex system. It is wrong to see economy and ecology as diametrically opposed: such an approach inevitably leads to one extreme or the other.

## CHERNOBYL CATASTROPHE

**I. Read and translate the text. Use a dictionary if necessary.**

On the 26th of April 1986 a catastrophe broke out 12 kilometers off the Belarusian border. It was the major break-down of the power unit at the Chernobyl nuclear power station. It is the most severe catastrophe throughout the entire world history of the atomic energy use by its scale, complexity and long-term consequences.

As the result of the explosion of the failed reactor a huge amount of radioactive substances was released into the atmosphere. Later on they left the large fall-out "spots" on the ground surface. 23 % of the territory of Belarus, 4.8 % of the territory of the Ukraine and 0.5 % of the territory of Russia were contaminated.

The radiation situation was determined by radionuclides with the period of half-decay from 8 days till 24390 years.

After the Chernobyl accident Belarus has become the zone of the ecological disaster. The situation got worse because radioactive contamination coincided with the formerly existing zones of high chemical pollution. 260,000 hectares of agricultural lands are forbidden to use for farming purposes. Thousands of hectares of forests are contaminated with radioactive elements. The Chernobyl catastrophe has affected the destinies of millions of people. The radioactive contamination of the ecosystems has created the conditions for

making it impossible to conduct the agricultural production and manage forestry in the normal way for many decades.

In order to decrease the influence of radiation on the people considerable work was done during the post-accident period. Measures were taken to evacuate the people from the most dangerous districts, to provide for their medical check-up and treatment. Various measures were almost carried out – radioactive decontamination, agricultural treatment of soil, provision of clean food. However, these measures are not enough yet. And international co-operation in this field serves the interests of the entire mankind.

**II. Match the words and their Russian equivalents.**

| | |
|---|---|
| 1. break-down | a. обеспечивать |
| 2. to coincide | b. обработка; лечение |
| 3. complexity | c. авария |
| 4. considerable | d. совпадать |
| 5. disaster | e. полураспад |
| 6. explosion | f. энергоблок |
| 7. failed reactor | g. долговременный |
| 8. fall-out | h. аварийный, неисправный |
| 9. half-decay | реактор |
| 10. long-term | i. размер |
| 11. to provide | j. радиоактивные осадки |
| 12. scale | k. сложность |
| 13. power unit | l. бедствие |
| 14. treatment | m. взрыв |
| 15. to contaminate | n. значительный |
| 16. severe | o. заражать, загрязнять |
| 17. to exist | p. лесничество, лесоводство |
| 18. forestry | q. существовать |
| | r. тяжелый, жестокий |

**III. Insert the missing words.**

1. It was the major … of the … … at the Chernobyl nuclear power station.
2. Later on radioactive substances left large … "spots" on the ground.
3. The situation got worse because … … coincided with the … existing zones of high … … .
4. The Chernobyl … has affected the … of millions of Belarusian people.
5. Measures were taken to … the people from the most … districts, to … for their medical … and … .

**IV. Choose the correct variant.**

1. It is the most severe catastrophe throughout
a) the history of Belarus.
b) the entire world history of atomic energy use.
c) the entire world history of industrial development.

2. 260,000 hectares of agricultural lands
a) are forbidden to use for farming purposes.
b) are forbidden to use for hunting.
c) can be used for farming purposes.

3. The measures taken are
a) quite enough.
b) not enough yet.
c) unsuccessful.

**V. Answer the questions.**

1. When and where did the Chernobyl catastrophe break out?
2. Why is it considered to be the most severe catastrophe?
3. What are the consequences of the Chernobyl catastrophe in Belarus?
4. What was done in Belarus during the post-accident period to decrease the influence of radiation?
5. Are the measures taken quite enough?

**VI. Arrange the points of the plan in the correct order.**

1. Measures were taken to decrease the influence of radiation.
2. The catastrophe and its consequences.
3. Belarus is the zone of ecological disaster.

**VII. Using the information from the text speak about**

1. long-term consequences of the Chernobyl catastrophe;
2. the ecological situation in Belarus during the post-accident period;
3. the measures which were taken to decrease the influence of radiation.

## AIR POLLUTION AS THE MAJOR PROBLEM OF THE DAY

**I. Read and translate the text. Use a dictionary if necessary.**

Since the 19th century we are getting increasingly worried about industry polluting breathing air in densely populated cities where the great majority of people live.

Not all air pollutants are man-made. For billions of years the air has been polluted by volcanoes throwing out tons of ash and smoke, dust stirred by the wind, gases given off by growing plants or by rotting animal and vegetable matter, salt particles from the oceans, etc. However, having discovered fire man added much to natural pollutants by burning fossil fuels. Sherlock Holmes for example, observed London "pea-soupers", blanketing the city for days. That's because Londoners used soft coal for heating their houses.

Let us review what we know about combustion. All fossil fuels naturally contain hydrogen, carbon and sulphur, present in plants and animals. Uniting with oxygen during combustion these gases result in forming water and releasing carbon monoxide, carbon dioxide and sulphur dioxide. Besides, oxides of nitrogen are produced in the air whenever there are high temperatures, be it a car spark or a lightning stroke. These natural processes have far-reaching consequences.

The oxides reacting with water in the air produce carbonic, nitric, nitrous, sulphurous and sulphuric acids. Acid rains have damaging effects on materials and the environment. An excess of nitrogen in the air, greater than the ecosystems are able to absorb results in destructing the biological balance of the soils and water (eutrophication). In the layers of the air close to the ground photochemical (photo-oxidizing) pollution causes the formation of "bad ozone", called so because of its destructing effect on human health and vegetation. And vice versa, the "good ozone" protecting us from solar ultraviolet (UV) ra-

diation in the stratosphere is being depleted by NO (mainly from traffic) and by chlorofluorocarbons. The ozone layer depletion has damaging effects on human health and environment. The greenhouse effect consists in atmospheric gases ($CO_2$, $CH_4$, $O_3$, $N_2O$, CFCs) absorbing infrared (IR) radiation, reflected from the surface of the earth. When not reflected back into space the energy is absorbed and transformed into heat. Without the natural greenhouse effect the average temperature on the earth would be $-18^0$C. However, since the industrial revolution, the concentration of greenhouse gases proves increasing. Thus, today we are facing the prospect of global warming with all its unpleasant consequences.

**II. Match the words and their Russian equivalents.**

| | |
|---|---|
| 1. pollutant | a. ископаемое топливо |
| 2. man-made | b. преобразовывать |
| 3. fossil fuel | c. сгорание |
| 4. combustion | d. поглощать, впитывать |
| 5. to release | e. инфракрасное излучение |
| 6. far-reaching | f. парниковый, тепличный эффект |
| 7. acid rain | g. исчерпывать, истощать |
| 8. to destruct | h. загрязнитель |
| 9. ultra-violet radiation | i. выпускать |
| 10. infra-red radiation | j. искусственный; синтетический |
| 11. to absorb | k. кислотный дождь |
| 12. to transform | l. ультрафиолетовое излучение |
| 13. exhaust | m. разрушать |
| 14. greenhouse effect | n. имеющий серьёзные последствия |

**III. Find the words similar in meaning.**

| | |
|---|---|
| to destruct | to be worried |
| balance | to take up |
| depletion | becoming hotter |
| to absorb | damaging |
| harmful | equilibrium |
| to transform | to upset |
| concentration | destruction |
| to be concerned | to convert |
| warming | amount |

**IV. Use the words in their correct form.**

| | |
|---|---|
| 1. What can we do to reduce the …of the atmosphere. | Pollute |
| 2. The change in the climate has produced …floods. | Disaster |
| 3. Many rare species are threatened with…. | Extinct |
| 4. Many of the gases produced by factories are…to our health. | Harm |
| 5. Exhaust fumes have…effects on the environment. | Damage |
| 6. Protecting the environment is essential to our…. | Survive |
| 7. The…of the environment is everyone's responsibility. | Protect |

**V. Make possible word combinations.**

warming, effect, energy, fumes, fuels, waste products, rain, layer, changes, disaster, pollution, rain forest, transport, resources, gases

1. acid …
2. tropical …
3. exhaust …
4. global …
5. ozone …
6. nuclear …
7. public …
8. natural …
9. air …
10. sea …
11. solar …
12. finite …
13. greenhouse …
14. clean …
15. recycled …
16. noise …
17. renewable …

**VI. Supply the most suitable words from the box.**

| weather, exhaust, on, greenhouse, recycling, fuel, resources, environmental, atmosphere, energy |
|---|

In recent years, the number of (1)…problems has increased dangerously. One of the most serious problems is the change to the (2)…which has led to the (3)…effect; this is making most climates warmer. It is already affecting several areas of the world with unusual (4)…causing droughts of heavy storms. Cutting down on (5)…fumes from vehicles would help solve the problem. Natural (6)…such as oil and coal are not endless, so using other forms of (7)…such as wind, sun, water, and even sea waves would help preserve our planet. Very soon we will be able to drive cars in cities and towns that run (8)…electricity – a much cleaner (9)…than petrol. And we can also help to reserve finite resources by (10)…things made of glass, aluminium, plastic and paper.

**VII. Match the words and their definitions.**

| | |
|---|---|
| 1. acid rain | a. products (coal, gas and oil) that need to be burnt in order to create energy |
| 2. fossil fuels | b. rising temperatures around the world |
| 3. carbon monoxide | c. a highly poisonous gas that has no odour or colour |
| 4. chlorofluorocarbons | d. moisture in the form of snow, fog, rain and dew that carries air pollution back to the ground |
| 5. greenhouse effect | e. gases particularly harmful to high-level ozone and causing holes in the protective ozone layer |

**VIII. Say if the following statements are true or false.**

1. We are getting increasingly concerned about air pollution since the 20th century.
2. Large cities seem to be the most highly polluted places.
3. All air pollution is due to man's activities.
4. Smog is a combination of the words "smoke" and "fog".
5. The process of oxidizing is known as combustion.
6. Combustion causes problems because of the oxygen released into the atmosphere.
7. The acid in the moisture can kill fish, plants and forest trees; harm the soil and damage buildings.
8. The ozone layer is being damaged by CFCs (chlorofluorocarbons).

**IX. Complete the following table using the information from the text.**

| Problem | Pollutants | Cause | Consequences |
|---|---|---|---|
| | | | |

**X. Reproduce the contents of the text using the table from ex.9.**

**XI. a) Read the text.**

The Ozone Layer Depletion

Ozone (a molecule having three oxygen atoms) is the main component in the upper atmosphere at the altitude of 19-30 km. We depend on this "good ozone" absorbing UV radiation from the sun thus protecting us from the risks of skin cancer and genetic mutations.

An abnormal lowering in concentrations of ozone at the South Pole was discovered in 1980. At the end of the southern winter, when the sun returns, the ozone content is found depleting by 40 to 60%. Traffic releasing NO, oceans emitting methylene chloride causing the chlorine build-up, man producing chlorofluorocarbons (CFCs) by his daily activities result in creating "ozone holes", that affect the climate and biological systems.

The scientists believe in mending the holes. They object to releasing CFCs and other ozone-depleting gases into the atmosphere, the restrictions of the Montreal Protocol helping to achieve this aim. However, even after introducing a complete ban, it will be 50 years or more before pollutants levels reduce to their pre-ozone hole values.

**b) Answer the following questions.**

1. What is "good ozone"?
2. How are "ozone holes" created?
3. Can the ozone holes be mended?

## WATER POLLUTION

**I. Read and translate the text. Use a dictionary if necessary.**

Population growth and the rapid development of industry and transport lead not only to an increase in water consumption but also to increasing pollution of rivers, lakes and even the World Ocean.

Sources of water pollution include offshore oil drilling operations, transport, domestic and industrial sewage, toxics from the atmosphere, various solid waste products. Great rivers and lakes are more polluted than seas due to the amount of industrial and communal waste dumped into them. That's why many of the rivers flowing through the most densely populated areas have turned into open sewage canals.

Each person uses about 75 gallons of water every day for drinking, cooking, cleaning, and many other purposes. After the water is used, it is flushed or drained away. Where that waste water, or sewage, goes next is critical to good health. In most cities, it goes to a sewage treatment plant where it is cleaned. Then it is dumped back into a stream, river, lake, or ocean.

Sewage treatment plants can kill most infectious diseases that are found in water. But these plants are not so effective in getting rid of chemicals and other poisons. The use of chemicals in factories and in growing crops has caused serious water pollution problems.

Not all waste water goes through a sewage treatment plant. In some areas, sewage flows directly into a river or lake. For example, rain that falls on a farm may pick up chemicals used to kill insects. The water then seeps underground and flows slowly toward a river, carrying the chemicals with it. Snow melting on a city street may pick up road salt and other particles and run directly into a stream.

In many communities, public health officials test the water to see if it is safe for swimming or fishing. Drinking polluted water or eating seafood from polluted areas can cause serious health problems.

To avoid this, safety standards for the nation's water as well as the air must be set and ways to stop pollution coming from mines, farms, and underground sources must be found. Nowadays urgent measures to combat water pollution are being worked out in many countries. There are government decrees in the CIS on the protection of the Sea Azov, the Caspian and Black Seas which have a beneficial effect on water purity and fishery development.

Table 1 - Major Forms of Water Pollutants

| **Pollutant** | **Source** | **Environmental effects** |
|---|---|---|
| Industrial, chemicals, polychlorinated, biphenyls (PCBs) | Industrial and chemical plants | Poisonous to humans and wildlife |
| Pesticides | Insect control for crops | Poisonous to humans and wildlife |
| Inorganic salts | By-products of industry and irrigation | Dangerous to sea life and crops |
| Phosphates and nitrates | Waste water, detergents, and fertilizers | Overproduction of algae |
| Oil | Spills | Poisonous to sea life, soils, seashores |
| Mercury substances | Manufacture of chemicals and paper | Poisonous to humans and wildlife |

**II. Match the words and their Russian equivalents.**

| | |
|---|---|
| 1. to dump | a. выбрасывать |
| 2. domestic sewage | b. просачиваться |
| 3. treatment plant | c. станция очистки воды |
| 4. to get rid of | d. коммунально-бытовые сточные воды |
| 5. poison | e. избавляться |
| 6. to seep | f. промышленные сточные воды |
| 7. unsafe | g. небезопасный |
| 8. to avoid | h. избегать |
| 9. to combat | i. бороться |
| 10. industrial sewage | j. яд |
| 11. waste water | k. сине-зеленые водоросли |
| 12. mercury | |

| | |
|---|---|
| 13. wildlife | l. живая природа |
| 14. algae | m. сточные воды |
| | n. ртуть |

**III. Find the words with the similar meaning.**

| | |
|---|---|
| waste water | to fight |
| unsafe | contamination |
| to get rid of | dangerous |
| pollution | sewage water |
| impact | to purify |
| to clean | effect |
| to combat | to expose of |

**IV. Find the words with the opposite meaning.**

| | |
|---|---|
| health | to get rid of |
| safe | decrease |
| pollution | low |
| high | dangerous |
| to obtain | disease |
| to increase | purification |
| clean | dirty |

**V. Find the word the translation of which is given.**

| | |
|---|---|
| 1. избавляться | a) to get rid of, b) to take part in, c) to be worried about |
| 2. сточные воды | a) poison, b) sewage, c) particles |
| 3. избегать | a) to melt, b) to throw, c) to avoid |
| 4. выбрасывать | a) to seep, b) to dump, c) to purify |
| 5. влияние | a) poison, b) impact, c) sewage |

**VI. Say if the following statements are true or false.**

1. Waste water always flows directly into a river.
2. Sewage treatment plants can kill infectious diseases found in water.
3. Waste water is water used by people for domestic purposes.
4. Drinking polluted water can cause serious health problems.
5. Usually water is tested to see if it is safe for fishing.
6. There is no need to set up safety standards for the nation's water.

**VII. Study the table and speak about sources of water pollution and its consequences. Use the following expressions:** *as far as … is concerned… , as for … , the environmental effects are as follows … , as I know … , it is obvious that … .*

**VIII. Read the text, title it and find the answer to the question.**

What main problem is discussed in the text?

a. It is the problem of rapid growth of population.
b. It is the problem of the total volume of pollutants.
c. It is the problem of the Pacific Ocean.

d. It is the problem of the water quality.

San Francisco Bay is getting dirtier all the time despite efforts to clean it up. Thus far, the effects of rapid growth of both population and industry are overcoming anti-pollution effort. The volume of municipal and industrial waste water discharged directly into the bay is expected to jump from 880 mgd[1] in 1971 to more than 2 billion gal a day by 2020.

The total volume of pollutants contained in waste water discharges has increased despite large expenditures on new and improved municipal and industrial waste water treatment plants. Also, pollutant loadings from other major sources, such as agriculture and storm water runoff, have increased. The federal Environmental Protection Agency estimates that it will take nearly $2 billion to clean up the bay at present levels of waste water discharge.

There are 98 major municipal waste water outfalls in the bay area. About 70 discharge directly into the bay or tidal waters and the rest into the Pacific Ocean, streams, or land disposal facilities. Some 50% of the municipal discharges received primary treatment only, another 45% received primary and secondary treatment, and 5% went into irrigation, or was reclaimed.

Toxic materials and aquatic plant nutrients from municipal and industrial waste water are a major cause of water quality problems. Others are pesticides from agricultural waste water, and potentially dangerous bacteria in municipal waste water discharges.

*Notes:*

mgd (million gallons per day) - миллион галлонов в сутки

галлон = 3,78533 л (амер.)

## THE PEATLANDS ECOSYSTEM

**I. Read and translate the text. Use a dictionary if necessary.**

A peat bog contains 95% water and 5% organic material, mostly partly-rotted plants. Peat began to form Northern Ireland over 8,000 years ago; raised bogs are now mostly found on the lowland around Lough Neagh, along the Bann Valley and in counties Fermanagh and Tyrone.

The importance of peatlands

Peatlands are a unique habitat in which many rare and endangered species of plants and animals may be found. In environmental terms they are as precious to the European heritage as the tropical rainforests are to world heritage.

They play an important role in both the carbon and water cycles and they can act as carbon “sinks”, purifying both air and water.

Peatlands are areas of immense natural beauty – many boglands attract large numbers of visitors annually.

The absence of oxygen in the peat means that little decomposition takes place and peatlands have preserved many of Northern Ireland’s archaeological treasures. They are therefore as valuable as history books in keeping a record of past time.

The threat to peatlands

It is alarming that only 12% of Northern Ireland’s peat bogs remain. In the past they have been seen as wastelands, valued only as a source of fuel or horticultural peat, or have been reclaimed and the land used for agriculture or forestry. Machines used to harvest peat are creating “open wounds” in the peat, allowing it to dry out, reducing its drought-controlling ability and causing the natural habitat to collapse.

Protection

It is still possible to protect what remains of our peatland heritage. The British government has finally recognized that increasing public awareness is a vital step in its campaign to protect these fragile areas. Peatlands Park in Co. Armagh has been set up to educate the public about all aspects of peat ecology and exploitation. It is now recognized as a site of international importance. The purpose of the development at Peatlands Park is to combine education with the enjoyment of bogs and their unique flora and fauna. The government is trying to promote the value of the wilderness in an increasingly developed and managed countryside. Facilities open to the public include a narrow-gauge railway and a peatland information and exhibition centre.

Peatlands Park is not the only scheme to protect Northern Ireland's boglands. Special status as an ASSI (Area of Special Scientific Interest) and NNR (National Nature Reserve) protects bogs from further cutting. The Dutch are also helping by buying bogs and protecting them, to ensure that peatlands here will not be totally destroyed as they were in their own country.

However, as always there are conflicts of interest in the conservation of peat bogs. Farmers feel that they should have the right to supplement their falling incomes by letting their land out to peat harvesters. It is alarming to think that in just a few years such a valuable resource could become totally extinct in the United Kingdom.

**II. Match the words and their Russian equivalents.**

| | |
|---|---|
| 1. peat | a. естественная среда |
| 2. a peat bog | b. садоводческий |
| 3. to rot | c. лесоводство |
| 4. habitat | d. гнить, разлагаться |
| 5. to endanger | e. торф |
| 6. species | f. пустырь |
| 7. wastelands | g. подвергать опасности |
| 8. horticultural | h. торфяное болото |
| 9. forestry | i. засуха |
| 10. drought | j. вид, сорт |
| 11. rainforest | k. исчезающий, вымирающий |
| 12. water cycle | l. охрана, рациональное использо- |
| 13. extinct | вание |
| 14. conservation | m. тропический лес |
| | n. круговорот воды в природе |

**III. Translate the following words into Russian.**

ecosystem, natural, material, tropical, cycle, archaeological, campaign, ecological, ecology, flora, fauna, conservation, exploitation

**IV. Find in the text word combinations with the words "peat", "peatland"and translate them into Russian.**

**V. Choose the correct variant.**

1. A peat bog contains …

a) 95% organic material and 5% water;

b) 95% water and 5% organic material;
c) 59% water and 41% organic material

2. Peatlands play an important role in the carbon and water cycles because …
a) waterlogged peat stores carbon;
b) they streamline the process of releasing carbon into the air and plants;
c) they don't dissolve carbon compounds in water

3. For a long time peatlands have been seen as …
a) precious lands for forestry and agriculture;
b) wastelands, a source of fuel and precious material for agricultural purposes;
c) lands for pasture

4. Machines used to harvest peat …
a) help to preserve peatlands;
b) create good conditions for the development of the natural habitat;
c) reduce its drought-controlling ability and cause the collapse of the natural habitat

5. … is an important step to protect our peatland heritage.
a) the enjoyment of bogs;
b) educating the public about aspects of peat ecology and exploitation;
c) further cutting

**VI. Explain the statements from the text.**

| Statement from the text | Why? |
|---|---|
| 1. Peatlands are very precious to the European heritage. | |
| 2. It is alarming that only 12% of Northern Ireland's peatbog re-main. | |
| 3. Peatlands Parks are one of the measures to protect Northern Ireland's boglands. | |
| 4. There are always conflicts of interest in the conservation of peatbogs. | |

**VII. Make up a summary of the text.**

**VIII. Read the text and answer the following question.**
Why are toxic wastes and artificial radiation dangerous?

Toxic Wastes

Each year people produce amazing amounts of waste material. For instance, the average American produces up to one ton of it. Most of the waste produced is not harmful. However, some of the waste, especially materials produced by factories, is toxic.

For many years, toxic wastes were just buried in the ground in dumps around the country. Often they were not even put in protective containers. Some of these wastes have leaked into the soil and into water supplies. Some of the toxic wastes that were stored in containers have begun to leak out. People living near the Love Canal in Niagara Falls, New York, found out how dangerous toxic wastes could be. Toxic wastes that had been

dumped in the Love Canal leaked into the ground and into the community's water supply. People became sick. Some of the waste seems to have been mutagenic. A mutagenic substance is one that causes changes in genes leading to birth defects or miscarriages. Some years later only two of the twelve babies born to women living near the Love Canal were normal. People had to move from their homes to avoid further poisoning. Despite efforts to clean up the toxic wastes, some of the poison remains in the water supply.

Chemicals found in toxic waste can cause many health problems. Many are carcinogenic, or cause cancers. Scientists and public health officials are working to find safer ways of getting rid of toxic wastes. Cleaning up the most dangerous of the old dumps will also be necessary.

Another problem results from the disposal of radioactive wastes that give off radiation. Radioactive wastes from nuclear power plants, for example, are very difficult to dispose of safely because the radiation will last for thousands of years. Radiation can be a carcinogen or a mutagen, but it has no smell or taste and it cannot be felt or heard. Its presence may not be noticed until after its damage has been done.

## ACID RAIN

**I. Pronounce the following words correctly and learn their meaning.**

1. damage ['dæmɪʤ] - ущерб, урон
2. hazard ['hæzəd] - риск, опасность
3. precipitation [prɪsɪpɪˈteɪʃn] - выпадения осадка
4. dissolve [dɪˈzɒlv] - растворять
5. emissions [ɪˈmɪʃn] - излучение, выброс
6. fossil fuels [fɒsl ˈfjuːəlz] - ископаемые виды топлива
7. fumes [fjuːmz] - выхлопные газы
8. decay [dɪˈkeɪ] - распадаться, разлогаться
9. dissolve [dɪˈzɒlv] - растворять
10. droplets [ˈdrɒplɪtz] - капли, брызги
11. fraction [frækʃn] - крупица, частица
12. devastating [ˈdevəsteɪtɪŋ] - разрушительный
13. vulnerable [ˈvʌln(ə)rəb(ə)l] - уязвимый
14. loch [lɒk] - озеро
15. extinction [ɪksˈtɪŋkʃn] - вымирание
16. mortality [mɔːˈtælɪtɪ] - смертность
17. collapse [kəˈlæps] - разрушение, крушение
18. electric utilities [ɪˈlektrɪk juːˈtɪlɪtɪz] - электроснабжение

**II. Read the text.**

Damage caused by acid rain has been well-documented leading to it being labelled as an environmental hazard. Acid rain can be defined as precipitation that is abnormally acidic due to it containing dissolved pollutants, which make it capable of causing great environmental harm. Typical rain will have a pH of around 5.5 whereas the pH of acid rain is much lower at around 4.0 due to it containing dissolved sulphur dioxide or nitrogen oxides, which are acidic pollutants.

**How Does Acid Rain Affect the Atmosphere?**

The majority of the emissions of sulphur dioxide and nitrogen oxides come from human activities such as burning of fossil fuels or vehicle exhaust fumes. However, a

small fraction of emissions exist from natural processes such as decaying vegetation and volcanic activity.

These emissions of sulphur dioxide and nitrogen oxide diffuse into the atmosphere and dissolve in water droplets in clouds forming sulphuric acid and nitric acid respectfully. Clouds containing these acidic droplets can then be transported by winds before precipitation occurs, creating acid rain through a process known as wet deposition. Alternatively, some of the pollutant particles may not become dissolved in cloud water to form acid rain so instead return to Earth's surface through dry deposition.

**How Does Acid Rain Affect the Water Cycle?**

After being released from clouds as precipitation, acid rain reaches the Earth's surface and a large fraction of it is transported to rivers and lakes through surface runoff or by groundwater flow. Here, it mixes with the existing water and increases the acidity of the water body with this drop in pH being particularly dramatic when large volumes of rainfall enter a relatively small water body.

In addition to rainfall, acid rain can also be deposited from the atmosphere as acid snow when temperatures are cold enough. This form of acid deposition can be particularly devastating to the natural environment as it will accumulate on the ground before suddenly melting to release a large volume of acidic water into the surrounding landscape.

**How Does Acid Rain Affect Plant Growth and Ecosystems?**

Living organisms suffer directly from acid rain falling in their habitat with species living in confined aquatic environments being particularly vulnerable as they cannot migrate to less acidic waters. Whilst some species have a high tolerance to acidic conditions, others cannot survive even very small changes in pH. For example, the increased acidity in several lochs in Galloway, Scotland in the 1900s led to the local extinction of several of the local fish populations.

The waxy outer layer of plant leaves can also become damaged by acid rain and the inability to photosynthesise efficiently makes the plant weak with an increased chance of mortality. The initial loss of key species in an ecosystem due to their high sensitivity to acid rain can result in the subsequent loss of further species who were dependent on the key species for their own survival, and this may result in the collapse of entire ecosystems.

**How Does Acid Rain Affect Human Health?**

Acid rain and the pollutant particles of sulphur dioxide and nitrogen oxide that it is formed from have been linked to human health problems including asthma, heart disease and eye irritation. In addition to forming acid rain, nitrogen oxides are also known to be involved in a reaction which creates tropospheric ozone which is known to cause respiratory problems in humans.

In answering the question on how does acid rain affect the environment, one will discover a whole host of environmental problems and impacts on humans. To prevent further damage from acid rain, it is important that we identify the main sources of sulphur dioxide and nitrogen oxide pollution and cut these emissions to meet higher air quality standards. Cutting emissions from these polluting sectors such as electric utilities and vehicles requires cleaner technologies to be used which can scrub out the pollutant gases and prevent them from causing environmental damage.

**III. Complete the following sentences.**

1. Damage caused by acid rain has been well-documented leading to it being labelled as an environmental _____.

2. Acid rain can be defined as precipitation that is abnormally acidic due to it con-

taining _____.

3. The majority of the emissions of sulphur dioxide and nitrogen oxides come from human activities such as burning of fossil fuels or vehicle exhaust_____.

4. This form of acid deposition can be particularly devastating to the natural environment as it will accumulate _____.

5. Inability to photosynthesise efficiently makes the plant weak with an increased chance of_____.

6. The initial loss of key species in an ecosystem due to their high sensitivity to acid rain can result in the subsequent loss of _____.

7. To prevent further damage from acid rain, it is important that we cut the emissions to meet higher air quality_____.

Possible answers: fumes; hazard; on the ground; further species; standards; dissolved pollutants; mortality

**IV. Find the synonym to the first word in each row.**

1. dissolve – evolve – distribute – solubilize
2. damage – benefit – detriment – feature
3. decay – smolder – recover – freeze
4. vulnerable – devastating – strange – unprotected
5. emissions – purity – radiation – ambiguity

**V. Find the antonym to the first word in each row.**

1. droplets — splashes - drought – silence
2. fossil fuels – emissions – fumes – gas
3. mortality – lethality - death rate - birth rate
4. fraction – stone – grain - chunk
5. precipitation – sludge – aridity – vegetation

**VI. Answer the following questions.**

1. Can acid rain be defined as precipitation?
2. What is the pH acid rain?
3. How does acid rain affect the Atmosphere?
4. The majority of the emissions of sulphur dioxide and nitrogen oxides come from human activities, don't they?
5. How can clouds be transported by winds?
6. How does acid rain affect the water cycle?
7. Does large fraction of acid rain is transported to rivers and lakes through surface runoff?
8. Does acid rain can also be deposited from the atmosphere as acid snow?
9. How does acid rain affect plant growth and ecosystems?
10. The increased acidity in several lochs in Galloway, Scotland in the 1900s led to the local extinction of several of the local fish populations, didn't it?
11. How does acid rain affect human health?
12. What emissions should we cut to meet higher air quality standards?

**VII. Find the connectors in the text "Acid Rain'' and divide them into columns or schemes depending on their type.**

**VIII. Write an essay "Acid Rain and its impact'' using different types of con-**

**nectors.**

## SAVE THE PLANET

**I. Pronounce the following words correctly and learn their meaning.**

1. decisive [dɪˈsaɪsɪv] - решающий
2. clue up [kluː] - разгадка
3. long-haul [lɒŋ hɔːl] - долгий
4. biodiversity [baɪəʊdaɪˈvɜː(r)sɪti] - биоразнообразие
5. input [ˈɪnpʊt] - входные данные
6. grain [greɪn] - зерно
7. legume [ˈlegjuːm] - бобовые
8. struggle [strʌgl] - борьба
9. drastic [ˈdræstɪk] - радикальный
10. landfill [ˈlændfɪl] - свалка
11. drastic [ˈdræstɪk] - радикальный
12. marine [məˈriːn] - морской
13. upcycling [ʌpˈsaɪklɪŋ] - повторный цикл
14. estimate ['estɪmeɪt] - оценивать
15. leftover [ˈleftəʊvə] - остатки
16. consumer [kən'sjuːmə] - потребитель
17. decline [dɪ'klaɪn] - снижаться, уменьшаться
18. halte [hɔːlt] - останавливать
19. daunting [ˈdɔːntɪŋ] - пугающим
20. kickstart ['kɪkstɑːt] - толчок к действию
21. internship [ɪnˈtɜːnʃɪp] - стажировка

**II. Read the text**

We are the first generation to know we're destroying the world, and we could be the last that can do anything about it. Speaking up is one of the most powerful things you can do especially if it's to the right people. We've been promised a better world – but our leaders are not on track to deliver. We need decisive action now.

**1. Keep yourself informed**

One of the best things you can do is to keep yourself informed – the more you know the better. It leaves you better equipped to have those conversations with your friends and family and the people you want to influence. Get yourself clued up on the facts, stay up to date with recent news on the state of our natural world and work out what you can do. We have the world at our fingertips, so learn from influential people, keep up with the news and research organisations that are working to make our planet a better place.

**2. Travel responsibly**

One of the most efficient ways of lowering your environmental impact is by travelling responsibly. This means, whenever you can, choosing a more sustainable way to get from A to B - walk or cycle when you can.Transport is one of the most polluting sectors. But holidaying closer to home can make a big impact on your carbon footprint. One short haul return flight can account for 10% of your yearly carbon emissions, and long-haul flights can completely determine your carbon impact.

**3. Eat sustainably**

Food production is a major driver of wildlife extinction. What we eat contributes

around a quarter of global greenhouse gas emissions and is responsible for almost 60% of global biodiversity loss.

Farming animals for meat and dairy requires space and huge inputs of water and feed. Today, one of the biggest causes of forest loss is the expansion of agricultural land for animal feed production, such as soy. Producing meat creates vastly more carbon dioxide than plants such as vegetables, grains and legumes.

Moving away from a meat-dominated diet towards a more plant-based diet can lower your impact on the environment. Vegetarian and vegan foods are massively on the rise and becoming far more common in restaurants, cafes and supermarkets, so you'll rarely struggle.

Not only that, but cutting down on meat and dairy products can reduce your weekly food bills.

**4. Reduce your waste**

We need to make wasting our resources unacceptable in all aspects of our life. Every product we buy has an environmental footprint and could end up in landfill. The impact of plastic pollution on our oceans is becoming increasingly clear, having drastic impacts on marine life.

Recycling what we can reduces the amount of new materials we are making, and upcycling is a creative way to make old items into something more valuable. This could be reusing a jam jar as a candle holder, or using old tins as plant pots – the possibilities are endless!

It's not just the products we buy. It's estimated that a third of all food produced in the world is lost or wasted. Do your bit by eating up leftovers and use any ingredients you have spare to make interesting meals. Try to waste as little food as possible, and compost the organic waste you can't eat.

**5. Watch what you buy**

We can all do more to be more conscious about what we buy, and where we buy it from. Buying less will save you money, reduce waste and improve your environmental footprint. Living a less consumerist lifestyle can benefit you and our planet. Use your purchasing power and make sure your money is going towards positive change. By supporting eco-friendly products which are less damaging to the environment, you're encouraging companies to source and produce their products in a sustainable way.

**6. Find ways to donate**

Our amazing supporters are helping us to restore nature and tackle the main causes of nature's decline, particularly the food system and climate change.

There are lots of ways to give. Become a member of WWF, adopt an animal, take on a challenge for Team Panda or encourage your family and friends to donate by setting up a Facebook birthday fundraiser.

**7. Read the living planet report**

WWF's most comprehensive study to date, the Living Planet Report 2022, shows global wildlife populations have plummeted by 69% on average since 1970. This means that nature loss is not being halted, let along reversed. The solutions exist, but time is running out to act. We're now in a race to bring our world back to life - and we know it's a race we can win.

**8. Volunteer for your world**

Volunteering can be daunting, and expensive if you don't know where to look. But it doesn't need to be this hard to do good. Often local nature reserves or parks are looking for regular volunteers, which can give you practical conservation experience as well as

helping to restore nature your local area.

We want everyone to have the opportunity to help and kickstart a career in conservation. We have a network of youth internship schemes across the world where you can work on a placement with a WWF team or with one of our projects in the field. It's an exciting opportunity to be able to work in the front line of nature conservation.

**III. Insert the missed parts of the following sentences.**

1. One of the most efficient ways of lowering your _____is by travelling responsibly.
2. Transport is one of the most _____sectors.
3. One short haul return flight can account for _____of your yearly carbon emissions.
4. What we eat contributes around a quarter of global _____gas emissions.
5. Producing meat creates vastly more _____than plants such as vegetables, grains and legumes.
6. WWF's most comprehensive study to date, the Living Planet Report 2022, shows global wildlife populations have plummeted by ____ on average since 1970.
7. Often local nature reserves or parks are looking for regular _____, which can give you practical _____as well as helping to restore nature your local area.

Possible answers: polluting; 10%; carbon dioxide; greenhouse; environmental impact; 69%; conservation experience; volunteers.

**IV. Find the synonym to the first word in each row.**

1. clue up – key – shackle – earrings
2. marine – sandy – sea – windy
3. leftover – food – staff – garbage
4. biodiversity - similarity - variety – peculiarity
5. consumer – user – customer - follower

**V. Find the meaning to each of the words.**

1. drastic
2. upcycling
3. estimate
4. input
5. daunting
6. biodiversityto be involved in an activity or situation for a long time, rather than just a few days, weeks
7. long-haul
8. struggle
9. landfill

a) roughly calculate or judge the value
b) seeming difficult to deal with in prospect
c) be in something for the long haul
d) to try very hard to do, achieve, or deal with something that is difficult or that causes problems
e) likely to have a strong or far-reaching
f ) a system of trash and garbage disposal in which the waste is buried between layers of earth to build up low-lying land
g) the variety of plant and animal life in the world or in a particular habitat

h) to recycle (something) in such a way that the resulting product is of a higher value than the original item

**VI. Answer the following questions.**

1. What are the main steps to save the planet according to the text?
2. One of the most efficient ways of lowering your environmental impact is travelling responsibly, isn't it?
3. What is the main polluting sector?
4. What contributes around a quarter of global greenhouse gas emissions?
5. What leads to one of the biggest causes of forest loss?
6. The impact of plastic pollution on our oceans is becoming increasingly clear, having drastic impacts on marine life, isn't it?

## 3. РАЗДЕЛ КОНТРОЛЯ ЗНАНИЙ

### 3.1. ВИДЫ КОНТРОЛЯ

#### 3.1.1. ТЕКУЩИЙ КОНТРОЛЬ

Для текущего контроля знаний студентам предлагаются следующие виды работ:

– опрос на занятиях;

– проверка домашнего (внеаудиторного дополнительного) чтения;

– выполнение контрольных переводов;

– выполнение лексико-грамматическихтестов при прохождении грамматического материала;

#### 3.1.2. РУБЕЖНЫЙ КОНТРОЛЬ

Для рубежного контроля знаний студентам предлагаются следующие виды работ:

– выполнение итоговых упражнений по окончании прохождения тем учебно-профессионального общения;

– выполнение контрольных переводов текстов учебно-профессионального общения;

– выполнение контрольных тестов по окончании прохождения грамматического материала;

– выполнение лексико-грамматических работ или компьютерного тестирования в 1, 2 семестрах.

#### 3.1.3. ПРОМЕЖУТОЧНЫЙ КОНТРОЛЬ (УСТНАЯ И ПИСЬМЕННАЯ ФОРМА)

Промежуточный контроль:

– грамматические тесты;

– лексико-грамматические контрольные работы;

– словарные диктанты;

– тесты на аудирование;

– пересказ и письменное изложение аудио- и видеотекстов;

– эссе;

– сочинение;

– устные опросы/беседы по темам;

– презентация темы с использованием программы Power-Point.

#### 3.1.4. ТЕКУЩАЯ АТТЕСТАЦИЯ

ДЛЯ СПЕЦИАЛЬНОСТИ «МЕЛИОРАЦИЯ И ВОДНОЕ ХОЗЯЙСТВО» (для дневной формы получения высшего образования):

ТЕКУЩАЯ АТТЕСТАЦИЯ проводится в целях периодического контроля и оценки результатов учебной деятельности обучающихся по учебной дисциплине.

Текущая аттестация проводится в виде тестирования (в технической форме

через Google Classroom или на бумажном носителе).

Текущая аттестация включает:

– в первом семестре: выполнение двух тестов по темам 1.1-1.4, 2.1-2.2 учебной программы (Тест № 1 – темы 1.1-1.3; Тест № 2 – темы 1.4, 2.1-2.2);

– во втором семестре: выполнение двух тестов по темам 2.3-2.7 учебной программы (Тест № 3 – темы 2.3-2.5; Тест № 4 – темы 2.6-2.7).

ПРОМЕЖУТОЧНАЯ АТТЕСТАЦИЯ:

Обучающиеся допускаются к промежуточной аттестации по учебной дисциплине при условии успешного прохождения текущей аттестации, предусмотренной в текущем семестре.

Допуском к сдаче зачета в первом семестре является успешное выполнение 2/3 тестовых заданий (Тест № 1 и Тест № 2).

Допуском к сдаче экзамена во втором семестре является успешное выполнение 2/3 тестовых заданий (Тест № 3 и Тест № 4).

### 3.1.5. ИТОГОВЫЙ КОНТРОЛЬ

Форма итогового контроля знаний студентов в 1 семестре – **зачет**.

**Зачет состоит из:**

– обязательной зачетной лексико-грамматической контрольной работы или компьютерного тестирования;

– сдачи внеаудиторного чтения в полном объеме;

– работы в семестре, предусматривающей выполнение студентом всех требований к практическим занятиям**.**

Форма итогового контроля знаний студентов во 2 семестре – **экзамен**.

**Структура экзамена:**

1. Письменный перевод на русский язык отрывка текста экономического содержания со словарем. Объем текста – 1200–1400 печатных знаков. Время подготовки – 45 минут.

2. Передача содержания текста экономического содержания на иностранном языке (объем текста 1000–1200 п. зн.).

3. Монологическое высказывание по одной из тем социально-культурного и бытового общения за весь курс обучения.

2 семестр заканчивается написанием лексико-грамматической контрольной работы и итогового компьютерного теста по пройденным экономическим темам за весь курс обучения.

На зачете и на экзамене проверяется практическое владение иностранным языком в объеме требований программы по каждому этапу обучения.

Курсовая работа учебным планом не предусмотрена.

## 3.2. ТЕСТЫ И КОНТРОЛЬНЫЕ РАБОТЫ

### 3.2.1. АНГЛИЙСКИЙ ЯЗЫК

**TEST. SOIL**

**Do the test. Choose the correct variant.**

1. Soil is ...

a) a highly organized physical, chemical and vegetation complex we are dependent on.

b) a highly organized physical, chemical and biological supporter of vegetable life providing food for all animals and men.

c) a highly organized physical, chemical and biological complex that provides food for all animals and men.

2. Soils develop under the influences of ...

a) climate, vegetation, slope and irrigation, time, the nature of the parent material, and the culture.

b) climate, vegetation, slope and drainage, time, the nature of the parent material, and the culture.

c) climate, vegetation, slope and drainage, time, the nature of the rocks, the culture.

3. ... through weathering, influences the rocks, which in time become part of the soil through the processes of soil formation.

a) Plants

b) Climate

c) Animals

4. ... for the production of food-stuffs must lie well and have good depth.

a) Good land

b) Bad land

c) Podzols

5. ... in high elevations are poor for crops but they comprise excellent forest soils.

a) Good land

b) Bad land

c) Podzols

6. Yields are dependent upon the ...

a) ability of the soil to take up and use fertilizers and water.

b) climate and animals of the region.

c) ability of the soil to take up and use fertilizers and rain.

7. The farmer must change his management because …

a) each soil series requires skilful handling.

b) from season to season conditions of temperature and moisture change.

c) the correct proportion of fertilizer needed changes in spring and autumn.

8. The farmer must change his management to ...

a) produce better drainage, improve tilth, prevent erosion, and test his soil to identify the kind and proportion of fertilizer applied.

b) produce better tilth, improve drainage, prevent corrosion, and test his soil to identify the type and proportion of fertilizer needed.

c) produce better food-stuff, improve irrigation, prevent erosion, and test his soil to identify the kind and amount of artificial substances needed.

9. The soil ...

a) can reproduce itself.

b) cannot reproduce itself.

10. "Садоводство"

a) forestry

b) agriculture

c) vegetable growing

d) horticulture

11. "Обработка почвы"

a) utility

b) drainage

c) tilth

d) fertilizer

12. "Растительность"

a) vegetation

b) moisture

c) rock

d) subsoil

13. The quantity of grain, vegetables, or fruit that is grown in one season is ...

a) climate.

b) crop.

c) subsoil.

14.The upper layer of land, the thickness of which varies from several centimetres to several metres is called ...

a) soil.

b) rock.

c) subsoil.

## TEST. PHYSICAL PROPERTIES OF SOILS

**Do the test. Choose the correct variant.**

1. The physical properties of a soil are determined by ...

a) its texture, or the size of the particles of which it consists, and its structure, or the arrangement of these particles

b) its texture, or the size of the rocks which it consists of, its structure, or the placement of these particles

c) its condition, or the size of the particles of which it consists, and its texture, or the arrangement of these particles

2. For a soil to be in good physical condition for plant growth ...

a) the air, water, and soil must be in the right proportions at all times

b) the oxygen, water, and hydrogen must be in the right proportions at all times

c) the air, water, and solid particles must be in the right proportions at all times

3. Every cubic foot of soil that supports plant life must ...

a) be excessively aerated, allow excessive loss of water and plant nutrients by deep percolation; create undesirable suspended water-tables.

b) be well aerated, permit the right amount of rain-water or irrigation water to enter the soil, sufficiently retentive of moisture

c) be well aerated, permit excessive loss of water, sufficiently retentive of moisture

4. Soil texture has to do with the fineness or coarseness of soil particles and the four principal size categories are

a) “sand”, “sandy loam”, “silt loam”, “loam”

b) “sand”, “loam”, “clay loam”, and “clay”

c) “gravel”, “sand”, “silt”, and “clay”

d) “gravel”, “sand”, “silt”, and “loam”

5. In most soils texture varies greatly

a) from the subsoil downward

b) from the surface downward

6. ... have greater pore space and larger surface area and provide greater storage space for water and better feeding zones for plant roots.

a) Coarse-textured soils

b) Fine-textured soils

7. ... are more easily tilled than clays and clay loams because the tilling of the former requires less power and is hindered less by wetness.

a) Sands and sandy loams

b) Gravels and sands

c) Sands and clay

8. ... refers to the manner in which the individual soil particles are arranged.

a) Soil structure

b) Soil texture

c) Soil colour

9. Scarcity of water may make the soil ...

a) good for planting, tilling, and harvesting cultivated crops

b) dark-coloured soils or light-coloured

c) hard, cloddy, and very difficult to plow

10. ... indicate the different degrees of hydration and the concentration of iron and aluminium oxides which stain the soil grains.

a) Soil structure

b) Soil texture

c) Soil colour

11. ... are considered to suggest higher productivity, though it is not always the case.

a) Light-coloured

b) Dark-coloured soils

## TEST. CHEMICAL PROPERTIES OF SOILS

**Do the test. Choose the correct variant.**

1. Chemical make-up of soils is due to ...

a) the chemical composition of the parent materials, to the climate and plant and animal life under which the soil developed

b) the elements of the parent materials, to the weather and plant and animal life under which the soil developed

c) the chemical composition of the rock, to the climate and animal life under which the soil developed.

2. The most common “fertilizing elements” are ...
a) nitrogen, oxygen, and hydrogen
b) nitrogen, phosphorus, and potassium
c) nitrogen, phosphorus, and calcium
3. ... are elements contained in very small quantities in most soils.
a) fertilizing elements
b) nitrogen, phosphorus, and potassium
c) trace elements
4. Soil water becomes ... by absorbing carbon dioxide from the air and by absorbing acid products formed by the decomposition of mineral and organic matter.
a) acid
b) alkaline
c) neutral
5. A soil is acid if a water solution contains ...
a) more hydroxyl ions than hydrogen ions
b) more acid ions (hydrogen) than basic ions (hydroxyl)
c) the same number of hydrogen and hydroxyl ions
6. The breaking down of water molecules into ions is known as ...
a) decomposition
b) ionization
c) oxidation

## TEST. IRRIGATION

**Do the test. Choose the correct variant.**
1. ... is the artificial application of water to soil to assist in the production of crops.
a) Drainage
b) Tilth
c) Irrigation
2. Irrigation is most extensively practiced in ...
a) semiarid regions where agriculture without it is impracticable, in the arid regions to increase the yield and to special crops in humid regions
b) humid regions where agriculture without it is impracticable, in the semiarid regions to increase the yield and to special crops in arid regions
c) arid regions where agriculture without it is impracticable, in the semiarid regions to increase the yield and to special crops in humid regions
3. Man can increase the area for cultivation by artificially applying ... to soil where nature fails to do this.
a) water
b) fertilizers
c) trace elements
4. The soils of ... are usually better supplied with the mineral plant foods which have not been washed out by excessive rains.
a) humid regions
b) arid regions
c) semiarid regions

5. ... are constructed together with irrigation development to discharge both excess water and excess salts. So drainage development parallels irrigation development especially in case of soil salinity.[5]
a) Irrigation works
b) Treatment works
c) Drainage works

## TEST. DRAINAGE

**Do the test. Choose the correct variant.**
1. ... frequently result in salination and waterlogging.
a) Improper drainage
b) Improper irrigation
c) Improper fertilizing
2. ... occurs because the roots of the plants absorb the irrigation water but exclude most of the salt it contains.
a) Waterlogging
b) Salination
c) Erosion
3. If reclamation is to be successful, the basic problem is to lower the ... so that it is to be kept below the root zone.
a) subsoil b) water-table c) ground water d) dissolved nutrients e) the amount of fertilizers
4. Lowering the water-table may be achieved: ...
a) by laying a grid of deep ditches along the boundaries of the fields
b) by using automatic control systems
c) both: by laying a grid of deep ditches along the boundaries of the fields and by using automatic control systems
5. An irrigation canal is parted into separate sections, and in each section a stable water level is maintained ...
a) automatically
b) semiautomatically
c) manually
6. It is hoped that large canal systems will be controlled by ...
a) people.
b) computers.
c) ditches.
d) drainage and irrigation systems.
7. An efficient, modern irrigation system should ...
a) store water so that it is available in sufficient quantities whenever required.
b) deliver water to all parts of the cultivated area, in amounts needed to meet crop demands during peak use periods.
c) dispose of waste water after use.
d) allow for the most efficient use of water and make irrigation possible without soil erosion, saline or alkaline accumulation, or waterlogging.
e) all together.

## ОБРАЗЦЫ ЛЕКСИКО-ГРАММАТИЧЕСКИХ ТЕСТОВ

## GRAMMAR TESTS

### NOUNS AND ARTICLES

**I. Choose the proper variant.**

1. I used to wear … when I went to school.
a) this glasses
b) these glasses

2. We should protect … from pollution.
a) the environment
b) environment
c) an environment

3. Judy goes to … by bus.
a) work
b) a work
c) the work

4. I saw you yesterday playing … .
a) tennis
b) a tennis
c) the tennis

5. Nigel opened a drawer and took out … .
a) photos
b) a photos
c) some photos
6. Did you learn to play … ?
a) violin
b) a violin
c) the violin

7. I need to buy …
a) a bread
b) a loaf bread
c) a loaf of bread
d) breads

8. I was watching TV at home when suddenly … rang.
a) a doorbell
b) an doorbell
c) doorbell
d) the doorbell

9. Most of the stories that people tell about … aren't true.
a) an Irish
b) the Irish
c) Irish
d) a Irish

10. Why are you listening to … music.
a) so terrible
b) such terrible
c) such a terrible

## PRONOUNS

**I. Choose the proper variant.**

1) When I rang Jane some time last week, she said she was busy … day.
a) that
b) the
c) this

2) There's … use in complaining. They probably won't do anything about it.
a) a few
b) a little
c) few
d) little

3) It's a nice house but there's … garden.
a) no
b) any
c) the

4) I like … classical music but not all.
a) most
b) some
c) no

5) I have hardly … spare time.
a) no
b) some
c) any

6. Have you had enough to eat, or would you like something …?
a) another
b) else
c) new
d) other

7. I can't go out with you. I haven't got …. to wear.

a) anything
b) something
c) nothing

8. Everyone enjoyed … at the picnic.
a) themselves
b) themself
c) himself

9. Have you read … interesting lately?
a) something
b) any
c) anything

10. I can't see my glasses …?
a) anywhere
b) nowhere
c) somewhere

## VERBS

**I. Choose the proper variant.**

1. This isn't my first visit to London. I … here before.
a) I'm
b) I've been
c) I was

2. I've got my key. I found it when … for something else.
a) I looked
b) I've looked
c) I was looking

3. Sorry, I can't stop now…. to an important meeting.
a) I go
b) I'm going
c) I've gone

4. When Michael … the car, he took it out for a drive.
a) had repaired
b) has repaired
c) repaired
d) was repairing

5. … … … the form? – No, not quite.
a) Did you fill in
b) Have you filled in
c) Had you filled in

6. I … you twice yesterday.
a) have phoned
b) had phoned
c) phoned

7. When I got home the children … their homework.
a) were doing
b) was doing
c) did

8. How long … married?
a) have they been
b) did they be
c) do they be

9. When I was 14 years old I … in for tennis.
a) I go
b) I was going
c) I went

10. Who … my scarf? It looks a bit dirty.
a) had been wearing
b) had worn
c) has been wearing
d) wore

## MODAL VERBS

**I. Choose the proper variant.**

1. I… get Sophie on the phone.I've been trying all afternoon.
a) may not
b) must not
c) can not

2. … I have more pie, please?
a) Could
b) Shall
c) Will
d) Would

3. The children are sleeping. We … make a noise.
a) couldn't
b) mustn't
c) needn't
d) wouldn't

4. … you like to go out with us?
a) Do
b) Should
c) Will
d) Would

5. I'm quite happy to walk. You… drive me home.
a) don't
b) haven't
c) mustn't
d) needn't

6. It's rather late. I think you … better go.
a) had
b) have
c) should
d) would

7. The chemist's was open, so luckily I … buy some aspirin.
a) can
b) can't
c) did can
d) was able to

8. … you please tell me the way to Trafalgar Square?
a) Could
b) Shall
c) Would

9. What … I do to improve my speech habits?
a) shall
b) must
c) need

10. You … have kept yourself under control.
a) must
b) had to
c) might

## ADJECTIVES AND ADVERBS

**I. Choose the proper variant.**

1. My brother is four years … than me.
a) older
b) elder
c) more elder

2. They lived in a … house.
a) modern wonderful brick
b) wonderful modern brick
c) brick modern wonderful

3. This government has taken some measures to solve the problems of ….
a) the poor
b) the poor people
c) poor

4. I'm pleased the plan worked so … .
a) good
b) goodly
c) well

5. They performed the experiment ….
a) scientifically
b) scientific

6. I'm getting … .
a) angry
b) angrily

7. We … missed the train.
a) mostly
b) near
c) nearest
d) nearly

8. My new job is great. I like it … better than my old one.
a) more
b) most
c) much
d) very

9. The people here are … than I expected.
a) more nice
b) most nice
c) nicer
d) nicest

10. In fact I feel a … depressed about it sometimes.
a) piece
b) bit
c) quite
d) slightly

**I. Choose the proper variant.**

1. I'm thinking … my job.
a) to change
b) of changing
c) about changing

2. Try …late.
a) not to be
b) don't be
c) not be

3. She lets her daughter … very late.
a) to stay up
b) stay up
c) staying up

4. He was made … back the money?
a) to pay
b) pay
c) paying

5. They enjoyed … .
a) to dance
b) dancing
c) dance
6. I want her … happy.
a) be
b) to be
c) being

7. She's nice… .
a) to talk to her
b) to talk to
c) talking to her

8. This form is … ink.
a) to fill in
b) to be filled in
c) to filled in

9. I sat down … .
a) to rest
b) for resting
c) for to rest

10. She's good at … .
a) sing
b) signing
c) to sing

## PREPOSITIONS

**I. Choose the proper variant.**

1. He saved money … giving up cigarettes.
a) by
b) of
c) with

2. Let's go and have coffee … Marcel's.
a) to
b) at
c) in

3. She looks much younger … this photo.
a) at
b) on
c) in

4. See you ….
a) next Friday
b) on next Friday
c) at next Friday
5. Jill is the person I'm angry … .
a) at
b) about
c) with

6. There was a fall … 10 per cent in prices.
a) at
b) of
c) in
d) by

7. The bus journey costs more now. They've put the fares … .
a) up
b) down
c) out
d) over

8. I'm going to be late … the meeting.
a) at
b) for

c) in
d) to

9. It’s late. How much longer are you going to go … working?
a) along
b) through
c) on
d) with

10. My shoes are dirty. I’d better take them … before I come in.
a) away
b) off
c) through
d) with

## 3.3. КРИТЕРИИ ОЦЕНИВАНИЯ РАБОТЫ СТУДЕНТОВ

**1. Оценка перевода.**

| Уровни | Баллы | Чтение |
|---|---|---|
| I. Низкий (рецептивный) | 0 | Отсутствие перевода или отказ от него |
| | 1 | Перевод текста на уровне отдельных словосочетаний и предложений при проявлении усилий и мотивации. |
| | 2 | Неполный перевод текста (менее 90 %). Допускаются грубые искажения в передаче содержания. Отсутствует правильная передача характерных особенностей стиля переводимого текста. |
| II. Удовлетворительный (рецептивно-репродуктивный) | 3 | Неполный перевод (90 %). Допускаются грубые смысловые и терминологические искажения. Нарушается правильность передачи характерных особенностей стиля переводимого текста. |
| | 4 | Полный перевод. Допускаются грубые терминологические искажения. Нарушается правильность передачи характерных особенностей стиля переводимого текста. |
| III. Средний (репродуктивно-продуктивный) | 5 | Полный перевод. Допускаются незначительные искажения смысла и терминологии. Не нарушается правильность передачи стиля переводимого текста. |
| | 6 | Полный перевод. Отсутствуют смысловые искажения. Допускаются незначительные терминологические искажения. Нарушается правильность передачи характерных особенностей стиля переводимого текста |
| IV. Достаточный (продуктивный) | 7 | Полный перевод. Соблюдается точность передачи содержания. Отсутствую терминологические искажения. Допускаются незначительные нарушения характерных особенностей стиля переводимого текста. |
| | 8 | Полный перевод. Отсутствуют смысловые и терминологические искажения. В основном соблюдается правильная передача характерных особенностей стиля переводимого текста. |
| V. Высокий (продуктивный, творческий) | 9 | Полный перевод. Отсутствуют смысловые и терминологические искажения. Правильная передача характерных особенностей стиля переводимого текста. |
| | 10 | Полный перевод. Отсутствуют смысловые и терминологические искажения. Творческий подход к передаче характерных особенностей стиля переводимого текста. |

**2.Оценка понимания при чтении. Показатели оценки чтения.**

| Уровни | Балл | Чтение |
|---|---|---|
| I. Низкий (рецептивный) | 0 | Отсутствие ответа или отказ от ответа. |
| | 1 | Понимание менее 30% основных фактов и смысловых связей между ними. |
| | 2 | Понимание 30% основных фактов и смысловых связей |

| | | |
|---|---|---|
| | | между ними. |
| II. Удовлетворительный (рецептивно-репродуктивный) | 3 | Понимание менее 50% основных фактов и смысловых связей между ними. |
| | 4 | Понимание 50% основных фактов текста и смысловых связей между ними. |
| III. Средний (репродуктивно-продуктивный) | 5 | Понимание большинства основных фактов текста, смысловых связей между ними и отдельных деталей текста. |
| | 6 | Понимание всех основных фактов текста, смысловых связей между ними и 50% деталей текста. |
| IV. Достаточный (продуктивный) | 7 | Понимание всех основных фактов текста, смысловых связей между ними и 70% деталей текста. |
| | 8 | Понимание всех основных фактов текста, смысловых связей между ними и 80% деталей текста. |
| V. Высокий (продуктивный, творческий) | 9 | Понимание всех основных фактов текста, смысловых связей между ними и 90% деталей текста. |
| | 10 | 100-процентное понимание основных фактов текста, смысловых связей между ними и деталей текста. |

**3. Оценка письменных текстов.**

| | |
|---|---|
| 100% – 95% правильных ответов | 10 баллов |
| 94,8% – 90% правильных ответов | 9 баллов |
| 89,6% – 83% правильных ответов | 8 баллов |
| 82,6% – 75% правильных ответов | 7 баллов |
| 74,6% – 65% правильных ответов | 6 баллов |
| 64,7% – 50% правильных ответов | 5 баллов |
| 49,7% – 35% правильных ответов | 4 балла |
| 34,7% – 20% правильных ответов | 3 балла |
| 19,7% – 10% правильных ответов | 2 балла |
| 9,7% – 1,8% правильных ответов | 1 балл |
| 1,4% – 0% правильных ответов | 0 баллов |

Наименьшая положительная оценка – 4 балла – выставляется при правильном выполнении не менее 2/3 заданий. Отсутствие работы или отказ от выполнения соответствуют оценке 0 баллов.

В курсе используется рейтинговая система обучения. Основная идея этой системы – повышение творческого начала всех участников педагогического процесса, максимальная индивидуализация обучения, резкая интенсификация и активизация самостоятельной работы студентов, прежде всего, на основе принципа интегральной многобалльной рейтинговой оценки знаний. Балл рейтинга состоит из суммы балов за посещение практических занятий, активное участие на занятиях, выполнение домашних заданий, творческий подход к выполнению заданий, письменный перевод текстов, сдачу устных тем, участие в СНК, зачет/экзамен.

# 4. ВСПОМОГАТЕЛЬНЫЙ РАЗДЕЛ

## 4.1. СЛОВАРИ

### 4.1.1. АНГЛИЙСКИЙ ЯЗЫК

РАБОТА СО СЛОВАРЕМ

Словарь, как правило, состоит из заглавных слов и словарных статей.

Заглавное слово - это выделенное жирным шрифтом слов, значение которого объяснено и часто иллюстрировано примерами. Все заглавные слова расположены в алфавитном порядке и имеют указание, какой частью речи они являются.

СЛОВАРНАЯ СТАТЬЯ – это мини-текст, содержащий определенные сведения о заглавном слове. Объём словарной статьи зависит от того, сколько значений имеет заглавное слово. В словаре может быть слово, значение которого передается одним русским словом: algebra – алгебра. В словарной статье приводятся все основные значения заглавного слова, а также отражается возможность использования его в функции разных частей речи. Ср.: house n. дом и to house v. вмещать. Большинство слов как в русском языке, так и в иностранном многозначно, т.е. имеет несколько значений. Ср. case – случай, судебное дело, ящик, футляр, пациент и т.д., или в русском языке ручка – маленькая рука, принадлежность для письма, устройство для открывания и т.д. Чтобы раскрыть каждое из значений многозначного слова, оно обычно иллюстрируется примерами – предложениями, которые показывают, что выбор конкретного значения многозначного слова зависит от контекста, в котором они встречаются.

Чтобы избежать трудности при нахождении в словаре отдельных слов, устойчивых словосочетаний, идиоматических выражений, определить исходную форму слова необходимо соблюдать последовательность работы со словарем:

1 ознакомление с разными типами словарей;

2. повторение алфавита и упражнений, связанных с расположением слов;

3. разъяснение значений помет и определение характера слов;

4. перевод сложных существительных;

5. перевод сложных прилагательных;

6. перевод фразеологических сочетаний;

7. перевод идиоматических выражений;

8. перевод слов, которые не помещены в словаре. Следует иметь в виду, что существуют общие словари с различной численностью слов. В общих словарях приводятся общеупотребительные слова.

Кроме того, существуют технические словари и словари по разным отраслям знаний, в которых можно отыскать необходимые термины.

ЗНАКОМСТВО СО СТРУКТУРОЙ СЛОВАРЯ

1. Необходимо знать объём словаря;

2. Где находится в словаре алфавит;

3. Краткий фонетический справочник (правила чтения);

4. Транскрипционные и условные знаки;

5. Необходимо ознакомиться с приложениями к словарю (сокращения, географические названия, таблица неправильных глаголов) и уметь пользоваться ими.

6. Знать закономерности словообразования, а именно

а) лексический запас языка растет с помощью приставок;

б) буквы Q, X, Y - заимствованные и потому малопродуктивны;

## КАК ПОЛЬЗОВАТЬСЯ АНГЛО-РУССКИМ СЛОВАРЁМ

Все английские слова расположены в алфавитном порядке.

Каждое слово (в том числе и сложное слово, пишущееся через дефис или раздельно) со всем относящимся к нему материалом образует самостоятельную словарную статью.

При словах иностранного происхождения, сохранивших своё написание и иногда произношение, как, например, fiancée, sou и т.п., даётся указание на происхождение слова (фр., нем., лат. и т.п.)

Все слова даны в английском написании. Американский вариант приводится самостоятельным словом по алфавиту, со ссылкой на английский вариант. Все заглавные слова снабжены фонетической транскрипцией, которая ставится непосредственно после самого слова. Произношение даётся по системе Международной фонетической транскрипции.

За основу произносительной нормы берётся первый вариант слова, поскольку он обычно является наиболее употребительным.

Каждое заглавное английское слово снабжается грамматической характеристикой в виде аббревиатуры n,a,v и т.п., а также фонетической транскрипцией. Дополнительные грамматические сведения (например, refl., pass. и т.п.) даются после указания части речи или после цифры, если они относятся лишь к данному значению.

Специальные термины, когда это необходимо, снабжаются условными сокращениями (тех., воен. и т.п.). Разговорные выражения, американизмы и т.п. во всех случаях помечаются условными сокращениями (разг., амер. и т.п.). После знака ◊ (ромб) приводятся идиомы, устойчивые сочетания поговорки и пословицы. Неправильно образующиеся формы глаголов, степени сравнения прилагательных или наречий и множественного числа имён существительных приводятся в скобках непосредственно после грамматической аббревиатуры, например:

go (went;gone)
bad (worse;worst)
mouse (pl. mice)

Отдельными приложениями даны:

– Список личных имён,

– Список географических названий,

– Список наиболее употребительных английских сокращений.

## СПРАВОЧНАЯ ЛИТЕРАТУРА

Справочная литература имеет целью предоставить возможность быстрого наведения справки по интересующему в данный момент вопросу в области науки, техники, политико-организационной, хозяйственной, культурной, практической деятельности. От смежных видов литературы, специальной, производственной, учебной, научно-популярной, отличается тем, что предназначена не для сплошного чтения, а для пользования время от времени по мере возникновения потребности в

наведении соответствующей справки для получения ответа на конкретно возникший вопрос. Все словари (за исключением энциклопедических) делятся на лингвистические и терминологические. Словари содержат упорядоченный перечень языковых единиц (слов, словосочетаний, фраз, терминов, знаков) с краткими характеристиками или переводом на другой язык. Лингвистические словари бывают: научные (с материалами о лингвистических исследованиях, интересующих специалистов), нормативные (служат для упорядочения, толкования, произношения, правописания в современном литературном языке), учебные (имеют методическую направленность и ориентацию на тот или иной этап обучения языку - для школьников, студентов и всех, кто изучает язык), популярные (выполняют общеобразовательные функции для широкого круга читателей).

СЛОВАРИ ВТОРОЙ ГРУППЫ

Словари второй группы - терминологические - ставят целью разъяснение понятий, обозначаемых терминами. Различают словари нормативные (наиболее значительная часть терминологических словарей включает свод терминов одной или нескольких отраслей), учебные (содержат термины, необходимые в учебном процессе), популярные (призваны помочь неподготовленному читателю освоить термины какой-либо области науки).

РАБОТА С ОРИГИНАЛЬНЫМ МАТЕРИАЛОМ

Работа с оригинальным материалом требует знаний не только терминологии, но и знания научного стиля изложения, латинизмов, сокращений, идеологизмов, специфичных физических единиц измерения и т.д. Практически, любой словарь имеет Приложения, содержащие в себе данную информацию, которые помогут успешно выполнить работу.

## Англо-русский словарь по мелиорации и почвоведению

**A**

**AMS (Agricultural Management Solutions)** Системы управления сельским хозяйством, Системы точного земледелия
**abloom** *adj* .цветущий
**above-ground part** надземная часть
**absorb** *v.* впитывать; абсорбировать; поглощать
**absorption** *n.* абсорбция, впитывание, всасывание
**absorption capacity of soil** поглотительная способность почвы
**abundant** *adj.* широко распространѐнный, обильный
**accelerate** *v.* ускорять(ся), убыстрять
**accumulation** *n.* накопление, аккумулирование; скопление
**acid** *n.* кислота; amino ~s аминокислоты; *adj.* (*хим*.) кислотный, кислый
**acid-base balance** кислотно-щелочной баланс
**acidity** *n.* кислотность; titratable ~ титруемая кислотность
**acre** *n.* акр (мера площади = 0,4 га)
**acreage** *n.* площадь (в акрах)
**adapt** *v.* приспосабливать (ся)
**add** *v.* прибавлять, добавлять
**additional** *adj.* дополнительный
**additive** *n.* добавка (*пищевая*); приправа

**adhesion of soil** связность (почвы)
**aerate** *v.* аэрировать, насыщать воздухом почву, проветривать
**affect smth**. *v.* воздействовать на что-то, поражать
**afforestation** *n.* облесение, лесонасаждение, лесовозобновление
**aftercrop** *n.* второй урожай
**after-ripening** *n* дозревание
**aggregate** *n,* .совокупность, *v.* собирать, соединять
**aggregated** *adj.* агрегированная, отструктурированная *(о почве)*
**aging** *n.* вызревание, созревание, выдержка
**agriculture** *n.* сельское хозяйство, земледелие, агрокультура
**agricultural soil science** агропочвоведение
**agronomics, agronomy** *n.* агрономия
**agronomist** *n.* агроном
**agrotechnical level of tilling** агротехнический уровень обработки почв
**airtight** *adj.* герметичный, воздухонепроницаемый
**alkali** *n.* щѐлочь, зола
**alkalify** *v.* подщелачивать
**alkaline** *adj.* (*хим*.) щелочной
**allow** *v.* позволять, разрешать
**alter** *v*. изменять; менять; видоизменять, вносить изменения, переделывать
**alternate row** промежуточный ряд (растений)
**amount** *n.* величина, количество
**amount of growth** прирост
**anaerobic** *adj.* (*биол*.) анаэробный
**anchor** *v.* закреплять, фиксировать, укореняться
**animal husbandry** *n.* животноводство
**annual** *n.* однолетнее растение
**aphid** *n.* тля
**application** применение, внесение
**apply** *v.* вносить *(удобрения)*
**arable** *n.* пашня, пахотная земля
**arable land cultivation** обработка пахотных земель
**area** *n.* площадь, зона, район, область
**area of risk farming** зона рискованного земледелия
**barren area** пустошь, неплодородный, тощий *(о земле)*
**arid** *n.* засушливый, сухой, безводный
**aridity** *n.* засушливость, аридность
**arm** *n.* ветвь, отросток, вырост *(растения)*
**artificial** *adj.* искусственный, синтетический
**assess** *v* оценивать, давать оценку
**assimilate** *v.* поглощать, усваивать
**available** *adj.*доступный, усвояемый *(о питательных веществах)*
**B**
**bacterium** *pl.* **bacteria** *n.* бактерия
**bark** *n.* кора *(дерева)*
**barn** *n.* амбар, сенной сарай, гумно, хлев
**barnyard** *n.* скотный двор
**barnyard manure** навоз со скотного двора

**base** *n.* основание, нижняя часть *(растения)*
**basic** *adj.* основной, главный
**bear (bore, borne)** *v.* производить, плодоносить
**bearing** *n.* плодоношение; плоды, урожай
**beard** *n.* ость *(колоса)*
**bed** *n.* грядка, место семени в стручке; *v.*сажать, высаживать
**nursery bed** рассадочная грядка
**root bed** площадь питания корней
**bedding-out** *n.* высаживание, высадка в грунт
**beetle** *n.* жук, жучок
**potato beetle** *n.* колорадский жук
**belt** *n.* зона, район, полоса
**land-protective belt** полезащитная полоса
**wind belt** ветрозащитное насаждение
**bench test** лабораторное испытание
**berry** *n.* ягода; мясистый плод
**biennial** *adj.* двулетник; двулетний
**bind** *v* (bound) связывать
**biocycle** *n.* биоцикл; жизненный цикл
**biodegrade** *v.* становиться биологически безопасным
**black frost** заморозки при сухой погоде
**blade** *n.* пластинка *(листа)*
**blend** *n.* смесь семян разных сортов трав
**blight** *n.* заболевание растений *(завядание, гниение или прекращение роста)*
**blossom** *n.* цвет; *v.*цвести, распускаться, расцветать
**full blossom** стадия полного цветения
**initial blossom** начало цветения
**cease/finish blossoming** отцвести
**bog** *n.* болотистая почва; верховое болото; торфяник
**bogging** *n.* заболачивание
**bottom** *n.* нижняя часть растения
**branch** *n.* ветвь, ветка; *v.* ветвиться
**branchy** *adj.* разветвлѐнный, ветвистый; раскидистый
**brand** *n.* торговая марка, бренд; *v* маркировать
**branded product** маркированное изделие (с фабричной или торговой маркой)
**break (broke, broken)** *v.* вспахивать, разрыхлять;
**break down** лопаться *(о почках),* распускаться (*о бутонах)*
**breed (bred bred)** *v.* разводить, выводить
**breeding** *n.*селекция, улучшение породы или сорта
**varietal plant breeding** сортовыведение
**bring under cultivation** вводить в культуру
**broadcast** *n.* посев вразброс; *v.* производить посев вразброс
**bud** *n.* почка; *v.* давать почки; окулировать, прививать глазком
**budding** *n.* окулировка, прививка глазком
**bulb** *n.* луковица *(цветка)*
**bulky** *adj.* большой, объемистый
**bury** *v.* закладывать в почву, закапывать
**bush** *n.* куст, кустарник; *v.*густо разрастаться

**bushing** *n.* закустаривание
**bushel** *n.* бушель (мера объема=36,3 литра)
**by-product** *n.* побочный продукт
**C**
**cabbage** *n.*капуста
**cabbage white butterfly** капустница, белянка капустная
**caked** *adj.*затвердевший, слежавшийся *(о почве)*
**calcium** кальций
**caloricity** *n.* калорийность; теплотворная способность
**cane** *n.* лоза; стебли кустарников; сахарный тростник
**fruiting cane** плодоносящий побег
**capability** *n.* способность
**capability of root penetration** проникающая способность корней
**capacity** *n.* èмкость, мощность, производительность
**water-absorbing capacity** водопоглащающая способность *(почвы)*
**water-holding capacity** водоудерживающая способность *(почвы)*
**carbohydrate** *n.* углевод
**carbon** *n.* углерод
**carbon dioxide** двуокись углерода, углекислый газ
**cash crop** товарная культура, товарная часть урожая; сельскохозяйственная продукция, предназначенная на продажу за наличные
**caterpilla**r *n.* гусеница
**cattle** *n. (pl.)* крупный рогатый скот
**cause** *n.* причина; *v.* причинять; вызывать
**cause-and-effect** причинно-следственный
**cell** *n.* клетка
**founder cell** стволовая клетка
**cereal** *n.* зерновые культуры, злаки, хлебный злак
**check yield** урожай с контрольной делянки
**chemical** *n.* химикат
**growth-regulating chemical** регулятор роста
**pest control chemical** химикат для борьбы с вредителями
**soil-aggregating chemical** структурообразующий химикат
**chemicalization** *n.* химизация, внедрение химикатов
**chemist** *n.* химик
**agricultural chemist** агрохимик, агроном по удобрениям
**cereal chemist** специалист по химии зерна
**soil chemist** химик-почвовед
**chlorophyll** *n.* хлорофилл
**chernozem** *n.* чернозèм, чернозèмная почва
**black chernozem** высокогумусный чернозèм
**common (ordinary) chernozem** обыкновенный *(средний)* чернозèм
**steppe chernozem** чернозèм степи
**cholesterol** *n.* холестерин
**circular chromosome** кольцевая хромосома
**clay** *n.* глина
**clay loam** жирный, тяжелый, иловатый суглинок
**climate** *n.* климат

**damp/humid/moist/wet climate** влажный климат
**frigid climate** холодный климат
**moderate climate** умеренный климат
**clipping** *n.* скашивание, косьба, подкос
**cloddy** *adj.* комковатый, глыбистый *(о почве)*
**coarse** *adj.* крупный *(о семенах);* крупнокомковатый *(о почве)*
**coat** *v.* покрывать слоем *(чего-л.);*
**cob** *n.* стержень початка кукурузы; початок кукурузы; крупный орех; лещина; фундук
**combine** *n.* комбайн*; v.*убирать комбайном
**commodit**y *n.* продукт; товар; предмет потребления
**compact** *adj.* плотный; *v.*уплотнять *(почву)*
**compact soil** связная почва
**companion crop** сопутствующая культура
**compete** *v.* соревноваться, конкурировать
**competition** *n.* конкуренция, борьба за существование
**competitive ability** конкурентоспособность
**composition** *n.* состав; структура
**compost** *n.* компост; компостировать; приготовлять компост
**earth-peat compost** торфоземляной компост
**propagation compost** компост для рассады
**compound** *n.* состав; смесь, соединение; *v.* смешивать; *adj.* сложный, составной
**complete** *adj.* полный, законченный; *v.* заканчивать, завершать
**concentrate** *n.* концентрат, обогащенный продукт; *v.* концентрировать, выпаривать
**condition** *n.* условие; состояние, кондиция
**adverse conditions** неблагоприятные условия
**habitat condition** условия местообитания, среды
**living conditions** условия существования
**under condition** в условиях
**conifer** *n.* хвойное дерево
**coniferous** *adj.* хвойный
**connect** *v.* соединять (ся), связывать (ся)
**connective** *n.* связник; *adj.* связующий, соединительный
**conserve** *v.* сохранять, сберегать; консервировать
**conservation** *n.* охрана природы, рациональное природопользование, рациональное использование природных ресурсов
**constituent** *n.* составная часть, компонент
**constitution** *n.* структура, строение
**chemical constitution** химический состав
**contaminant** *n.*загрязнитель, загрязняющее вещество
**contaminate** *v.* загрязнять, заражать, портить
**contamination** *n.* примесь, загрязнение, порча, заражение; порча, разложение; microbial ~ бактериальное обсеменение
**content** *n.* содержание (чего-л. в чѐм-л.);, объѐм, вместимость; *(pl)* одержимое доля, процент, *syn* proportion
**fat content** жирность
**oil content** масличность
**sugar content** сахаристость

**water content** влажность
**continues** *adj.* непрерывный; постоянный;
**control** *n.* борьба *(с насекомыми, болезнями);v.*бороться, контролировать; подавлять
**conventional** *adj.* обычный; общепринятый; традиционный; обусловленный; стандартный; устоявшийся
**cooling** *n.* охлаждение
**corny** *adj.* зерновой, хлебный; хлеборобный
**correlation** *n.* корреляция, связь, соотношение, зависимость
**correlative** *adj.* коррелятивный, соответствующий, сходный
**corrupt** *v.* портиться, гнить, разлагаться; *adj.*гнилой, порченный
**corruptible** *adj.* способный портиться, портящийся
**corruption** *n.* порча, гниение, разложение
**couch** *n.* трава *или* сорняк с ползучими быстро размножающимися корневищами
**white couch** пырей ползучий
**couching** *n.* выпалывание *(сорняков)*
**country** *n.* страна, *(сельская)* местность; *adj.* сельский
**country of origin** страна происхождения *(напр. сорта)*
**grain-exporting country** страна-экспортѐр зерна
**one-crop country** страна монокультуры
**countryside** *n.* сельская местность
**cover** *v.* укрывать, запахивать, заделывать *(семена),* окучивать
**coverage** *n.* покров
**cow** *n.* корова
**cowshed** *n.* коровник, хлев
**cradle** *n.* накопитель, оборудование для сбора урожая
**crop** *1. n.* с.-х. культура; *v.* возделывать с.-х. культуру; *2. n.* урожай, хлеб на корню; *v.* собирать урожай; *3. v.* сажать, сеять, засеивать
**bad crop** неурожай, недород
**cultivated crop** пропашная культура; возделываемая культура
**companion crop** культура-уплотнитель
**cover crop** покровная культура
**industrial crop** техническая культура
**preceding crop** предшествующая культура, предшественник
**crops under glass** тепличные и парниковые культуры
**crop production** растениеводство, выращивание с-х культур
**crop rotation** севооборот; чередование культур
**by-farm crop rotation** прифермский кормовой севооборот
**continuous crop rotation** длительный севооборот
**crop rotation experiment** опыт в севообороте
**field crop rotation** полевой плодосмен
**free crop rotation** вольный севооборот
**grazing crop rotation** пастбищный севооборот
**hay-pasture crop rotation** луговой/ лугопастбищный севооборот
**multiple crop rotation** многопольный севооборот
**crop rotation farming** плодосменное земледелие
**cropping system** система земледелия; система полеводства
**cross** *v.* скрещивание; скрещивать; *n* гибрид, помесь
**crown** *n.* ботва, верхушка растений

**crumbly** *a* крошащийся, рассыпчатый, хрупкий, ломкий, рыхлый;
**cultivar** *n.* сорт *(культурного растения)*
**cultivate** *v.* обрабатывать, возделывать, культивировать, выращивать
**cultivated** *adj.* культурный *(о растении);* возделываемый *(о земле)*
**cultivation** *n.* обработка; культивация; возделывание (земли); рыхление (почвы); культивирование; разведение (растений); выращивание сортов (с.-х. культур); улучшение сортов (с.-х. культур)
**long-continued cultivation** многолетнее использование (почвы)
**pre-emergence cultivation** довсходовая культивация
**primary cultivation** первичная обработка
**regular cultivation** постоянная обработка (в севообороте)
**preplanting cultivation** предпосадочная/ предпосевная обработка
**culture** *syn.* **crop** *n.* с.-х. культура; *v.* возделывать с.-х. культуру; *n.* культивирование, выращивание *(растений);* возделывание (почвы)
**cultural practice** агротехнический прием, метод
**cut** *n.* надрез, срез; *v* **(cut-cut)** резать, косить, жать, убирать урожай
**cycle** *n.* период, цикл, круговорот
**D**
**damage** *n.* вред, повреждение, *v.* повреждать, приносить ущерб
hail damage повреждение градом
**dangerous** *adj.* опасный, рискованный
**dank**. *adj.* буйно растущий *(о травах)*
**dead** *adj.* увядший, засохший; *pl. n.* растительные остатки
**dead plant part** отмершая часть растения
**decay** *n.* гниль; гниение, разложение; *v.* засыхать, увядать, гнить, разлагаться (*об органических веществах)*
**deciduous** *adj.* опадающий *(о листьях),* теряющий на зиму листву, лиственный, листопадный *(о деревьях)*
**decompose** *v.* разлагать, растворять
**decomposition** *n.* разложение, разложение; гниение, распад; разрушение
**bacterial decomposition** разложение под воздействием' бактерий
**decomposition course** процесс разложения
**deforestation** *n.* вырубка леса
**dehydrator** *n.* сушилка, установка для обезвоживания
**density** *n.* густота, плотность *(травостоя, посева* ; концентрация
**deposit** *v.* давать осадок; *n.* отстой, осадок, нанос, отложение, налѐт
**depth** *n.* глубина, толща, толщина; мощность (почвы)
**desirable** *adj.* желательный
**destroy** *v.* уничтожать
**destruction** *n.* разрушение, уничтожение
**detection** *n.* выявление, обнаружение, открытие; регистрация
**determine** *v.* определять, устанавливать
**develop** *v.* развивать (ся), совершенствовать; создавать; развивать(ся); выводить (сорт, породу) , разрабатывать
**development** *n.*создание *(сорта);* окультуривание *(о почве),* мелиорация
**deviation** *n.* отклонение (*от нормы*); light ~ незначительное отклонение; sharp ~ резкое отклонение
**dew** *n.* роса; *v.* орошать, увлажнять;

**dewfall** *n.* выпадение росы
**differentiate** *v.* различать (ся), отличать(ся), видоизменяться
**dig (dug dug)** *v.* копать
**digestible** *adj.* переваримый, усвояемый
**digestion** *n.* перегнивание, компостирование, усвоение
**dilute** *v.* разбавлять, разводить
**dioxide** *хим.* двуокись
carbon dioxide углекислота
**disaster** *n.* катастрофа
**disastrous** *adj.* разрушительный
**disease** *n.* болезнь
**disease-producing organism (pathogen)** возбудитель болезни *(патоген)*
**disinfectant** *n.* протравитель семян
**disk** *n.* дисковое орудие; *v.* дисковать *(почву)*
**disk harrow** дисковая борона
**disperse** *v.* рассеивать, разбрасывать, распространять
**dissolve** *v.* растворять(ся)
**distribution** *n.* разбрасывание *(семян);* внесение *(удобрений, ядохимикатов)*
**distributor** *n.* высевающий аппарат; разбрасыватель *(ядохимикатов, удобрений)*
**diversity** *n.* разнообразие, многообразие; разновидность
**division** *n.* тип *(растений)*
**do (did done) well *(better, best)*** *v.* произрастать; хорошо расти *(лучше, лучше всего)*
**domestic** *adj.* культивируемый *(о растениях)*
**domesticate** *v.* окультуривать*(растения)*
**dominant** *n.* массовый вид, преобладающая, доминирующая форма
**dominate** *v.* преобладать, доминировать
**dormant** *adj.* дремлющий, спящий, бездействующий
**dormancy** *n.* покой *(семян, растений)*, состояние покоя, спячка
**drag** *n.* борона; бороновать, боронить
**drain** *v.* осушать *(почву)*; *n.* осушитель, дренажная труба
**drainage** *n.* дренаж, дренирование, осушение
**draw** *n.* молодой побег
**drawn** *adj.* вытянувшийся, истончѐнный *(о всходах, о рассаде)*
**dress** *v.* обрабатывать *(землю);* удобрять навозом *(почву);* подкармливать *(растения);* протравливать *(семена);* сортировать
**dressing** *n.* удобрение, навоз; протравливание *(семян);* сортировка; подкормка *(растений)*
**broadcast dressing** разбросное внесение удобрений
**side dressing** междурядная подкормка
**soil dressing** корневая подкормка
**top dressing** поверхностная подкормка
**drill** *n.* высевающий аппарат; сеялка; борозда, рядок; *v.* высевать, сеять, вносить удобрения в рядки
**drilling** *n.* рядковый посев, рядковое внесение удобрений
**drill row** ряд посева
**drop** *n.* осыпание, опадение *(цветков, завязей, плодов)*; падалица; высевающий аппарат
**droplet** *n.* капелька

**drought** *n.* засуха, сушь
**droughty** *adj.* засушливый, сухой, безводный
**dry** *adj.* сухой
**dryer** *n.* сушильный аппарат; drum ~ барабанная сушилка; spray ~ распылительная сушилка
**dry land (dry-land)** засушливый; богарный
**due** *adj.* обусловленный, должный, соответствующий, надлежащий
**due to** из-за, вследствие, благодаря
**to be due to** *v.* обуславливается, объясняться
**dung** *n.* помѐт; навоз; компост; органическое удобрение; удобрять навозом
**dunged** *adj.* удобренный навозом
**dunging** *n.* внесение навоза, применение органических удобрений
**duration** *n.* длительность, продолжительность; вегетационный период
**dust** *n.* вещество в пылеобразном состоянии; дуст, пылевидный препарат; *с.-х., брит.* отходы, *с.-х.* опилки; *v.* опыливать; *adj. агрохим.* порошковидный
**dust storm** пыльная буря
**dwarf** *n.* карликовое растение; *v.* мешать росту, останавливать развитие
**dwarfish** *adj.* карликовый, низкорослый, недоразвитый
**E**
**ear** *n.* колос; початок *(у кукурузы); v.* колоситься
**earing** *n.* колошение, выколашивание
**easy to-root** *adj.* легко укореняющийся
**earthworm** *n.*дождевой червь
**edaphology** *n.* почвоведение
**edible** *adj.* съедобный
**effect** *n.* следствие; действие, влияние, воздействие; *v.* производить, осуществлять (действие, влияние, воздействие)
**efficient** *adj.* действенный, эффективный
**eliminate** *v.*. исключать, уничтожать, ликвидировать
**elimination** *n.* устранение, удаление, элиминация
**embryo** *n. (pl.* - s*)* эмбрион, зародыш
**emerge** *v.* появляться, возникать
**emergence** *n.* появление, возникновение; всходы
**employ** *v.* употреблять, применять, использовать
**endurance** *n.* выносливость, сопротивляемость
**endurance limits** пределы выносливости
**endure** *v.* переносить, выдерживать, противостоять
**enduring** *adj.* выносливый, стойкий *(о растениях)*
**enhance** .*v* увеличивать, усиливать
**enrich** *v.* обогащать, улучшать
**enrich soil** удобрять почву
**ensure** *v.* обеспечивать
**environment** *n.*. окружающая среда
**enzyme** *n.* фермент, энзим
**equipment** *n.* оборудование, установка, оснащение
**equilibrium** *n.* баланс, равновесие
**erode** *v.* эродировать, выветривать, размывать, разрушать
**essentia**l *adj.* существенный, весьма важный

**establish** *v.* создавать, устанавливать, укоренятся, приниматься, разбивать, закладывать
**establishment** *n.* посев, посадка, создание травостоя
**ethanol** *n.* этиловый спирт, этанол ($C_2H_5OH$); *adj.* этиловый
**evaluate** *v.* оценивать; определять количество
**evaluation** *n.* оценка
**evaporate** *v.* испарять; выпаривать; упаривать; обезвоживать
**evaporation** *n.* испарение
**evergreen** *adj.* вечнозеленый; вечнозеленое растение
**excess** *n.* избыток, излишек, излишнее количество
**expose** *v.* выставлять на свет, подвергать воздействию внешней среды
**exposure** *n.* выставление *(на солнце),* подвержение воздействию среды
**extension agency** организация содействия развитию промышленности/ сельского хозяйства
**extension service** служба пропаганды сельскохозяйственных знаний и внедрения достижений; служба по распространению опыта и знаний; обучение вольных слушателей
**extinction** *n.* вымирание
**extraction** *n.* экстрагирование, извлечение
**eye** *n. бот.* глазок
**F**
**facility** *n* (*обычно pl*) оборудование, приспособления, аппаратура; здания (заводов); средства обслуживания
**fade** *v.* увядать, вянуть; обесцвечивать(ся)
**fail** *v.* не уродиться *(о культуре)*
**fall** *n.* осыпание *(семян);* осень
**fall out of cultivation** дичать; терять культурную форму
**fallow** *n.* пар, паровое поле; заброшенная пашня, залежь
**farming** *n.* земледелие, возделывание с-х культур; ведение с-х
**fruit farming** плодоводство
**mixed farming** многоотраслевое хозяйство
**seed farming** семеноводство
**favour** *v.* благоприятствовать
**favourable** *adj.* благоприятный
**feldspar** *n.* полевой шпат
**female** *adj.* женский
**fertile** *adj.* плодородный (о почве), изобильный, урожайный
**fertility** *n.* плодородие (почвы); изобилие, богатство
**fertilization** *n.* внесение удобрений, подкормка удобрениями
**fertilize** *v.* удобрять, вносить удобрение, унаваживать
**fertilizer** *n.* удобрение (минеральное)
**fiber** *n* волокно, клетчатка; crude ~ сырая клутчатка (*целлюлоза*)
**fibrous** *adj.* мочковатый *(корень);* волокнистый
**field** *n.* поле, делянка,
**corn-field** нива, поле под зерновыми культурами
**plowed field** пахотные земли
**tilled field** пашня
**field evaluation** полевая оценка

**fine** *adj.* мелкий; высококачественный, мелкозернистая (о почве)
**fine-grained** *adj.* мелкозернистый
**firm** *v.* трамбовать, утрамбовывать землю; *adj.* осевшая, уплотненная почва
**firmness** *n.* твердость; крепость, прочность; устойчивость
**fit for tillage** пригодный для пахоты
**flake** *n.* вкрапление (небольшое); чешуйка
**flat** *adj.* плоский; нерельефный; однообразный; ровный; гладкий;
**fluid** *n.* жидкость; *adj.* жидкий, текучий; подвижный, изменчивый
**fluid manure spreader** машина для внесения навозной жижи
**fold** (four-fold) кратно (четырехкратно)
**forest litter** лесная подстилка; лесной опад
**fraction** *n.* доля, порция, часть
**frame** *n.* парник; парниковый сруб
**frame grown** *adj.* парниковый
**freeze (froze frozen)** *v.* замерзать. замораживать; застывать, затвердевать
**frequency** *n.* частота, повторяемость
**irrigation frequency** план поливов, частота поливов, интервал между поливами
**friability of soil** рыхлость, эрозийность почв
**frost date** срок наступления заморозков
**frostproof date** срок минования весенних заморозков, беззаморозковый период
**frost day** день с отрицательной температурой *(на поверхности почвы или растений)*
**frost-hardy** *syn.* **frostproof, frost-resistant** морозостойкий
**frost-killing** вымерзание *(растений)*
**fruit** плод,
**to bear fruit** плодоносить
**to fruit off** снимать плоды
**to set the fruits** завязывать плоды
**fleshy fruit** сочный плод
**immature fruit** недозрелый плод
**mellow fruit** зрелый плод
**small fruit** кустовая плодовая или ягодная культура
**stone fruit** косточковый плод
**windfall fruit** падалица
**fruitful** *adj.* плодоносный, плодоносящий, продуктивный, плодородный
**fungicide** *n.* фунгицид
**fungous** *adj.* грибной, грибковый
**fungus** (*pl.* **fungi**) *n.* гриб, грибок, плесень
**furrow** *n.* борозда; *v.* пахать; нарезать борозды; бороздовать
**furrow applicator** машина для внесения ядохимикатов на дно борозды
**furrow-making device** бороздоделатель
**furrow planter** бороздовая сеялка
**furrow spacing** расстояние между бороздами

**G**

**gain** *n.* прирост; *v.*увеличение, приобретать
**gallon** *n.* галлон *(мера жидких и сыпучих тел англ.=4,54л, амер.=3,78л)*
**gather** *n.* сбор, урожай; *v.* снимать, собирать, убирать *(урожай)*
**gene** *n.* ген
**genotype** *n.* генотип

**germ** *n.* зародыш, семя, проросток, почка
**germinate** *v.* прорастать, развиваться, давать почки
**germinating power** всхожесть *(семян);* энергия прорастания
**germination** прорастание *(семян)*, всхожесть, начало роста
**germination readiness** энергия прорастания семян
**grade** *n.* степень; качество, вид, сорт; *v.* сортировать, high ~ высший класс/сорт, low ~ низкое качество; commercial ~ товарный сорт; *v* классифицировать, сортировать; располагать по степени
**soil structure grades** степени оструктуренности почвы
**graded** *adj.* сортовой, сортированный, спланированный (о земле)
**grading** *n.* классификация, сортировка по качеству; оценка качества; ~ standard стандарт качества
**graft** *n.* прививка; привой, привитая часть *(растения); v.* прививать, черенковать
**grafting wax** садовый вар
**grain** *n.* зерно, хлебный злак, зерновая культура; зѐрнышко
**grinded grain** перемолотое зерно
**ground grain** дроблѐное зерно
**threshed grain** обмолоченное зерно
**grain fill** выполненность зерна
**granary** *n.* зернохранилище; хлебородный район
**grass** *n.*трава; злак; дерн; *v.*зарастать травой
**grasscutter** *n.* газонокосилка
**grasshopper** *n.* саранча, кузнечик
**grassland** сенокосное угодье; лугопастбищное угодье
**grazing** *n.* выпас, пастбище, выгон
**greenhouse** *n.* теплица, оранжерея
**greenhouse gases** газы с тепличным/ парниковым эффектом
**green manure crop** культура на зеленое удобрение, сидеральная культура
**grit** *n.* песчаник; мелкий песок; песчинки; овсяная мука грубого помола; *v.* измельчать; *adj.* грубозернистый
**groove** *n.* борозда
**ground** *n.* почва, грунт; участок земли
**open ground** открытый (незащищѐнный)грунт
**trial ground** опытный участок
**groundwater** *n.* подземные воды; подпочвенные воды; почвенно-грунтовая вода
**grow (grew-grown)** *v.* расти, произрастать; выращивать, культивировать
**growing period *(season)*** вегетативный период, период вегетации
**growth** *n.* рост, развитие, произрастание; выращивание; растительность
**guard band** защитная полоса *(делянка)*
**guard row** защитный ряд *(растений)*
**gully erosion** овражная эрозия

**H**

**habit *(of growth)*** *n.* привычка, свойство; особенность развития растения
**habitat** *n.* естественная среда, место распространения, произрастания
**hairs *(of roots)*** корневые волоски
**half-and-half** *n.* смесь двух веществ в равных частях;
**halt** *n.* остановка; прекращение; *v* останавливать(ся)
**harden** *v.* становиться жестким, твердеть

**harmful** *adj.* вредный, опасный
**harmless** *adj.* безвредный, безопасный
**handle** *v.* возделывать, выращивать *(растения)*; обрабатывать (почву); убирать *(урожай)*
**hardiness** *n.* выносливость; крепость; устойчивость; жизнестойкость; закаливание (растений); стойкость к неблагоприятным внешним условиям
**winter hardiness** зимостойкость
**hardiness degree** степень выносливости
**hardiness zone** зона морозостойкости
**hardness** *n.* твердость , жесткость
**hardy** *adj.* стойкий, выносливый; открытого грунта *(о растениях)*
**harrow** *n.* борона; *v.* боронить
**harsh** *adj.* жесткий; грубый (*на ощупь*); резкий, неприятный (*на вкус*)
**harvest** *n.* урожай; жатва, уборка хлеба; *v.* собирать урожай, жать
**harvester** *n.* комбаин
**hay** *n.* сено, заготавливать сено
**make hay** косить, ворошить и сушить сено
**haylage** *n.* сенаж, травяной силос; культура на зелѐный корм
**hayland** *n.* сенокос
**hazard** *n.* опасность
**head** *1 .n.* колос, метѐлка *(злаковых); v.* колоситься; *2. n.* кочан *(капусты); v.* завиваться в кочан
**headland** *n.* край поля; межа; защитная полоса *(делянки)*
**head row** ряд, засеянный семенами одного колоса или одной метѐлки
**heat** *n.* тепло (та), жара; ~ stability термоустойчивость; ~ treated термически обработанный; *v.* нагревать (ся)
**heater** *n.* обогреватель; нагревательный прибор
**heating** *n.* согревающий, обогревающий
**heavy soil** тяжѐлая почва; почва тяжѐлого механического состава
**hectare** *n.* гектар
**herb** *n.* трава, травянистое растение; надземная часть растений*; pl.*зелень
**herb meadow** разнотравный луг
**herbage** *n.* травы, травостой; ботва, зелѐная масса *(растений)*
**herbicide** *n.* гербицид
**herbivore** травоядное (животное)
**heredity** *n.* наследственность
**heritage** *n.* наследуемые признаки
**high-quality** *adj.* высококачественный; *ant* poor-quality
**high-speed blades** высокоскоростные лопасти
**high-volume** *adj.* крупносерийный; массовый (о производстве); многостадийный
**high-yielding varieties program HYVP** программа выведения высокоурожайных сортов сельскохозяйственных культур
**hill** *v.*окучивать
**hive** *n.* улей; пчелиный рой; *v.* запасать мѐд
**hive products** продукция пчеловодства
**hoe** *n.* мотыга; культиваторная лапа; *v.*мотыжить, разрыхлять
**hole** лунка; п′ора
**homogeneous** *adj.* однородный; гомогенный

**horticulture** *n.* садоводство, плодоводство
**hotbed** *n.* парник, паровая грядка
**hull** *n.* шелуха, оболочка, пустые стручки; *v.* очищать от шелухи, лущить
**humid** *adj.* влажный, сырой
**humidity** *n.* влажность; влага
**humus** *n.* гумус, перегной
**husbandry** *n.* сельское хозяйство, землепашество; хозяйствование
**crop husbandry** растениеводство
**field husbandry** полеводство
**grassland husbandry** луговодство
**husk** *n.* шелуха; скорлупа; мякинная оболочка; *v.*лущить; шелушить
**hybridization** *n.* гибридизация, скрещивание
**hydroponic** *n.* гидропонный
**hydroponic bed** гидропонный стеллаж
**hydroponic culture** гидропоника
**hydroponic plant** гидропонная установка
**I**
**immature** *adj.* незрелый, неспелый; слаборазвитый (о почве)
**immunity (to)** *n.* невосприимчивость, иммунитет
**impact** *n.* сильное воздействие; влияние
**imperishable** *adj.* прочный, стойкий, непортящийся
**implement** *n.* инструмент; орудие; *syn* tool; *pl* принадлежности; инвентарь
**improper** *adj.* непригодный, неподходящий
**improve** *v.* улучшать(ся); совершенствовать(ся);
**improvement** *n.* улучшение, усовершенствование
**inch** *n.* дюйм ( = 2,5 *см)*
**include** *v.* (smth in smth) *v* содержать, включать; заключать, содержать в себе; *syn* comprise, contain, involve
**income** *n.* прибыль; заработок; поступление; поступления; доход, выручка;
**incorporate** *v.* вносить, заделывать (напр., удобрения)
**increase** *n.* (in smth) *n.* увеличение; размножение; рост, прирост (чего-л.); *syn* rise, raise
**increase** *v.* возрастать, увеличивать (ся)
**increase in yield** прибавка (урожая);
**increase of fertility** повышение плодородия почвы
**increase of salinity** повышение засоления
**incubate** *v.* культивировать (микроорганизмы), выращивать
**incubative period of a plant disease** инкубационный период болезни растений
**index** *n.* показатель, коэффициент
**index of irrigation need** показатель потребности в орошении
**hybrid index** показатель гибридности
**salt index** солевой индекс; показатель солевого ожог растений
**yield index** показатель урожайности
**indigestible** *adj.* неудобоваримый, трудно перевариваемый
**indirect** *adj.* непрямой, косвенный
**infancy** *n.* ранняя (начальная) стадия развития (растения).
**inferior** *adj.* худший (по качеству) ; плохой
**infestation** *n.* засорѐнность *(посевов);* нашествие *(вредителей)*; инвазия
**influence** *n.* влияние, действие; воздействие на что-то; *v.* влиять

**inhibit** *v.* подавлять, сдерживать; тормозить; задерживать; запрещать
**inhabit** *v.* населять; обитать
**inhabitant** *n.* организм, населяющий данную местность
**inherit** *v.* наследовать
**inheritance** *n.* наследственность
**inhibition** *n.* ингибирование, торможение, подавление, угнетение
**yield inhibition** снижение урожая
**injure** *v.* повреждать
**injury** *n.* вред, повреждение
**hail injury** вред, причинѐнный градом
**mechanical injury** механическое повреждение (плодов)
**inlet** *n.* (*техн.*) впуск, вход; входное, вводное отверстие; ~pipe впускная труба
**inoculation** *n.* инокуляция, посев, внесение посевного материала
**inoculum** *n.* посевной материал/ культура
**inputs** *n.* производственные ресурсы; сырьѐ и материалы
**insect** *n.* насекомое
**beneficial/ useful insect** полезное насекомое
**crop-destroying insect** насекомое-вредитель с/х культур
**injurious insect** насекомое-вредитель
**insecticide** *n.*средство от насекомых; инсектицид; средство для истребления насекомых
**intensive grazing** *n.* интенсивный выпас
**intercrop** *n.* промежуточная междурядная культура
**interplanting** *n.* уплотненный посев, подсев, дополнительная посадка
**inter-row** *adj.* междурядный
**inter-row cultivation** междурядная обработка
**in tillage** *adj.* обрабатываемый (о почве)
**introduction** *n.* интродукция, введение, внедрение (нового сорта, вида)
**invasion** *n.* инвазия; заселение, вторжение
**desert invasion** опустынивание
**forest invasion** облесение, наступление леса
**grass invasion** остепенение
**weed invasion** зарастание сорняками
**inventory** *n.* материальный запас; производственные ресурсы; товарноматериальные ценности; оборотный капитал
**in vitro** в пробирке
**in vivo** в живом организме
**involution** *n.* дегенерация: закручивание, завѐртывание (листьев)
**involve** (smb in smth) *v.* включать в себя, содержать; *syn* include, contain
**irradiation** *n.* облучение; иррадиация; излучение; ultraviolet ~ облучение ультрафиолетовыми лучами
**irreversible consequence** необратимые последствия
**irreversibility of evolution** необратимость эволюции
**irrigate** *v.* орошать, поливать
**irrigation** *n.* орошение; ирригация; полив; оводнение
**irrigation adequacy** степень увлажнения почвы при поливе
**irrigation by sprinkler** орошение дождеванием
**irrigation depth** поливная норма

**irrigation hose** шланг для полива
**irrigation layout** схема оросительной системы
**irrigation timetable** график орошения
**subterrestrial irrigation** подземное орошение
**well irrigation** орошение из колодцев
**J**
**juiciness** *n.* сочность
**juicy** *adj.* сочный, спелый, мясистый
**K**
**keep (kept – kept)** *v.* держать, содержать *(животных)*, хранить, сохранять;
**keep down** уничтожать *(сорняки)*
**keep up the fertility** поддерживать плодородие почвы
**keep** *n. брит. англ.* пастбище, подножный корм, запас кормов
**keeper** *n.* сторож; хранитель; смотритель; санитар; лаборант
**cow keeper** скотовод, скотник
**hay keeper** сенохранилище
**poultry keeper** птицевод
**kernel** *n.* зерно; зѐрнышко; ядрышко; косточка (в плодах); ядро (ореха); *adj.* базовый; основной; центральный
**blighted kernel** повреждѐнное зерно
**laden kernel** налитое зерно
**spare kernel** щуплое зерно
**sprouted kernel** проросшее зерно
**thousand-kernel weight** абсолютный вес зерна (вес тысячи зѐрен)
**kernel milk line** молочная спелость зерна (в основном про кукурузу
**kernel percentage** озернѐнность колоса в %
**kernel size** величина зерна
**kernel smut** головня зерен
**kidney** *n* (*анат.*) почка
**kill** *v.* уничтожать (сорняки, вредителей), ослаблять
**killer** *n.* препарат для уничтожения (сорняков, вредителей)
**killing frosts** *syn.* **summer killing** летнее похолодание, заморозки
**kind** *n.* вид, сорт, отличительный признак
**knead** *v* смешивать до получения однородной массы
**L**
**label** *n* ярлык, этикетка, наклейка, бирка; *v* категоризировать, относить к какой-л. категории
**labour** *n.* труд, работа
**agricultural labour** полевые работы
**seasonal labour** сезонные рабочие
**lack** *n* недостаток; отсутствие (чего-л.)
**lack in structure** бесструктурный (о почве)
**lactic-acid bacterium** (*pl* bacteria) молочнокислая бактерия
**lactose** *n (биол.)* лактоза, молочный сахар
**land** *n.* земля, почва; грунт; делянка; землевладение
**barren land** пустошь
**cropped land** земля под культурой
**disturbed land** земля с нарушенным покровом

**fallow land** земля под паром
**leased land** арендованная земля
**raw/virgin/wild land** целинная земля, целина
**undeveloped land** неосвоенная земля
**landscaping** *n.* ландшафтный дизайн, зелѐные насаждения; благоустройство и озеленение; ландшафтная садовопарковая архитектура; создание антропогенного ландшафта
**soil landscaping** почвенный покров
**land use** землепользование
**larva** *n.* личинка; гусеница
**latent** *adj.* латентный, скрытый; покоящийся; *бот.* спящий
**lateral** *n.* боковой побег; боковая плеть
**large seeded** *adj.* крупносеменной
**layer** *n.* слой, пласт (земли); *бот.* отводок; стелящийся побег; ярус растительности; *v* разводить (размножать растения) отводками
**soil layer** почвенный горизонт
**tilled layer** обрабатываемый слой
**layerage** *n.*размножение (растений) отводками, ярусность (растительности)
**leach** *v.*выщелачивать; высолаживать, вымывать; *n.* зола
**leaf** *n.* (*pl.* **leaves**) лист (растения)
**leafy** *adj.* облиственный (о стебле), с хорошо развитой ботвой; лиственный
**lean** *adj.* обеднѐнный (о почве); неурожайный (год)
**leggy** *adj.* вытянувшийся (о рассаде)
**legume** *n.* растение из семейства бобовых *(Leguminosae*); боб; плод бобовых; зеленый горошек; столовые овощи; фасоль
**legume-grass** бобово-злаковый
**leguminous** *adj.* бобовый
**level** *n.* уровень; *adj.* ровный, гладкий; *v.* выравнивать
**at some level** при/ на некотором уровне
**frost level** глубина промерзания (почвы)
**groundwater level** зеркало грунтовых вод
**liberally** *adv.* обильно, в огромном количестве
**lift** *n. мелиор.* высота подъѐма воды; *v.* выкапывать, копать (картофель); снимать урожай (корнеплодов)
**lifter** *n.* подъѐмник; машина для уборки корнеплодов
**potatoe lifter** картофелекопатель
**light soil** лѐгкая почва; почва лѐгкого механического состава
**lime** *n.* известь, известковое удобрение; *бот.* лайм; липа
**limestone** *n.* известняк
**linseed** *n.* льняное семя; лѐн обыкновенный
**liquid** *adj.* жидкий; текучий; *n.* жидкость
**fertilizer liquid** жидкое удобрение
**nutrient liquid** питательный раствор
**livestock** *n.* домашний скот; живой инвентарь; поголовье; скот; живность; *adj.* зоотехнический
**loaf** *n.* кочан (капусты, салата); *v.* образовывать кочан
**loam** *n.* суглинистая почва; супесь; суглинок
**leguminous loam** бобовый суглинок

**rich loam** плодородный суглинок
**sandy loam** опесчаненный суглинок; супесь
**loam-peat compost** торфо-глинистый компост
**lodge** *v.* полегать (о хлебах, посевах)
**longevity of seeds** продолжительность сохранения жизнеспособности семян
**loose** *adj.* рыхлая; сыпучая *(порода)*
**loosen** *v.* разрыхлять (почву)
**loss** *n* потеря, утрата; убыток, ущерб, потеря
**crop/ yield losses** потери урожая
**field/ harvesting losses** потери при уборке урожая
**soil losses** потери (смыв) почвы
**lot** *n.* участок (земли); делянка; *v.* разбивать на делянки
**seed lot** партия семян
**louse** *pl.* **lice** вошь
**plant louse** тля
**lumpy** комковатый (о почве)
**M**
**machinery** *n.* машины; техника; техническое оборудование
**maintain** *v.* сохранять; поддерживать; (со) держать
**make (made, made)** *v.* делать; работать; созидать
**make a growth** расти, развиваться
**make hay** косить траву на сено
**making** *n.* работа; ремесло; необходимые качества; изготовление; переработка; процесс изготовления; производство;
**hay making** сенокос
**wine making** виноделие
**maintain** *v.* поддерживать, сохранять, обслуживать; содержать в исправности
**maintenance** *n.* поддержание; сохранение
**male** *adj.* мужской; *n.* самец
**malformation** *n.* неправильное формирование; недостаточное развитие; уродство
**malt** *n.* солод; *v.* солодить; осолаживать
**brewer ′s malt** пивоваренный солод
**management** *n.* обработка (почвы); агротехника; мелиорация; возделывание культуры
**manipulation** *n.* обработка; управление (*механизмом*)
**manufacture** *n.* производство; процесс изготовления; *v* производить, изготовлять (*промышленным способом*); обрабатывать, перерабатывать
**flour manufacture** мукомольное производство
**manufacturing** *n.* производство; выделка; изготовление, обработка; обрабатывающая промышленность; *adj.* промышленный; производственный
**manure** *n.* навоз; органическое удобрение; удобрение; помѐт; *v.* унавоживать; удобрять навозом; удобрять (землю); удобрить; унавозить; навозить
**matter** *n.* вещество; dry ~ сухое вещество
**maturation** *n.* созревание
**mature** *adj.* взрослый; зрелый (*о животном*), созревший, спелый (*о плодах, семени);* *v.* созревать; вызревать
**maturity** *n.* спелость, зрелость
**picking maturity** уборочная спелость

**soil maturity** зрелость (сформированность) почвы
**meadow** *n.* луг; луговина; поляна; покос сенокосное угодье; *adj.* луговой
**flood/ plain meadow** заливной луг
**native meadow** естественный луг
**meal** *n.* мука простого помола; размолотое зерно; *v.* размалывать в муку
**barley meal** ячменная мука
**high protein meal** мука с высоким содержанием белка
**sunflower meal** жмых подсолнечника
**measure** *n.* мера, система измерений; степень; мероприятие; доза; *v.* измерять; дозировать
**land measure** мера земельной площади
**plant protection measures** методы защиты растений
**measurement** *n.* измерение, замер; *pl* размеры
**medium** *adj.* средний (*размер*); промежуточный
**mellow** *adj.* плодородный, жирный (о почве); рыхлый (о почве); выдержанный (о вине); *v.* разрыхлять (почву); спеть, созревать
**meltdown** *n.* расплавление
**middle** *n.* борозда; междурядье
**mild** *adj.* мягкий (климат)
**mildew** *n.* милдью; мучнистая роса
**mill** *n.* мельница; дробилка; мукомольный комбинат; *v.* молоть; дробить (зерно); веять; очищать (семена)
**milling** *n.* молотьба; дробление, измельчение
**mineral** *adj.* минеральный; насыщенный минеральными веществами; (*хим.*) неорганический
**mixed row** смешанный ряд (растений)
**mixer** *n.* смеситель, смешивающий аппарат
**mixture** *n.* перемешивание, смешивание; смесь; *v.* мешать; смешивать
**moderate** *adj.* умеренный
**moist** *adj.* влажный
**moisture** *n.* влага; влажность; сырость; ~ loss усушка
**excess moisture** избыточная влага
**relative moisture** относительная влажность
**soil moisture** почвенная влага
**mold** *n.* плесень; гниль; перегной; гумус; *v.* плесневеть; гнить
**monoculture** *n.* бессменная культура; однооборотная культура
**moss** *n.* мох *pl* мхи
**moth** *n.* мотылек; моль; бабочка
**mow (mowed mown)** *v.* косить; *n.* стог; копна; сеновал
**mown-out** *adj.* выкошенный
**mower** *n.* (сено)косилка
**mowing practice** метод скашивания
**mulch** *n.* дерновый грунт с перегноем; мульча (материал для покрытия почвы); *v.* мульчировать
**multiply** *v.* размножаться; увеличиваться в числе
**multiplication** *n.* размножение
**seed multiplication** производство семян
**mushroom** *n.* гриб (съедобный)

**must** *n.* плесень; *v.* плесневеть
**mycelium** *n* мицелий, грибница
**N**
**narrow** *n.* борона
**narrow-row** *adj.* узкорядный
**narrow-row planter** узкорядная сеялка
**narrow-row planting** узкорядный посев
**nature** *n.* природа; основное свойство, сущность
**natural selection** естественный отбор
**necrogenic** *adj.* некрогенный, ускоряющий разложение растений
**necrosis** *n.* некроз, отмирание
**nematode** *n.* нематода (нитчатый червь)
**net** *adj.* чистый, нетто (*о весе, доходе*); ~ weight вес нетто, вес без упаковки
**nitrate** *n.* нитрат, селитра, соль азотной кислоты
**nitrogen** *n.* натрий
**nitrogen fixer** азотофиксатор (бактерия)
**nitrogenous** *adj.* азотный, азотистый
**nitroshooter** *n.* машина для внесения жидких азотных удобрений
**node** *n.* узел (на стебле у злаков), колено (ветки, корня), нарост; утолщение
**nodule** *n.* клубенѐк; узелок; гранула; зерно; нарост на растении
**no-grade** *adj.* не сортовой
**non-essential** *adj.* заменимый**; ~** amino acid заменимая аминокислота; ~ fatty acid заменимая жирная кислота
**no till** *n.* нулевая обработка почвы (перед посевом); гербицидная обработка почвы (без вспашки); *adj.* беспахотный
**nuclear membrane** ядерная оболочка
**nucleic acids** нуклеиновые кислоты
**nucleous** *n.* ядро (клетки); косточка (плода), ядро (ореха)
**nursery** *n.* питомник; рассадник
**breeding nursery** селекционный питомник
**open-bed nursery** питомник на открытом грунте
**plastic nursery** плѐночная теплица
**pot plant nursery** теплица для выращивания растений в горшках
**nursery seedlings** саженцы, выращенные в питомнике
**nursling** *n.* сеянец, молодое растение, саженец
**nut** *n.* орех; плод ореха; *v.* собирать орехи
**nutrient** *n.* питательное вещество; digestible ~ усвояемое питательное вещество; ~ value питательность; *a* питательный
**nutrient intensity** концентрация питательных веществ
**nutrient lack** недостаток питательных веществ
**plant nutrient** питательное вещество для растения
**nutritional** *adj.* относящийся к питанию; пищевой, питательный; *syn* nutritive; ~ value питательная ценность
**nutritious** *adj.* питательный
**O**
**obtain** *v.* получать, доставать, приобретать
**occasional occurrence of species** редкая встречаемость вида
**odour** *n.* запах, аромат

**offal** *n.* отходы помола; отруби; высевки; побочные продукты переработки; отбросы; мусор
**oil** *n.* растительное масло
**sunflower oil** подсолнечное масло
**open-pollinated** *adj.* перекрѐстноопыляющийся
**orchard** *n.* фруктовый сад, плодовый питомник
**origin** *n.* происхождение, источник; род
**original** *adj.* первоначальный; коренной
**ornamental** *adj.* декоративный, орнаментальный, служащий украшением
**outbreak** *n.* вспышка болезни, эпифитотия; нашествие (с/х вредителей)
**outlet** *n. (техн.)* выпускное, выходное отверстие; выпуск, выход; слив, сток
**outyield** *v.* превосходить по урожайности или продуктивности
**overdrill** *n* .подсев; *v.* подсевать
**overgrowth** *n.* гипертрофия, разрастание; заросль
**overripe** *adj.* перезрелый
**overrun** *n.* избыток
**overseed** *v.* высевать сверх нормы
**oversow (oversowed, oversown)** *v.* пересевать, сеять дополнительно; сеять вразброс
**overwinter** *v.* перезимовывать
**oxidation** *n.* окисление
**oxygen** *n.* кислород
**oxygent-tolerant** не чувствительный к кислороду
**P**
**packaging** *n.* упаковка, способ упаковки
**palatable** *adj.* аппетитный, вкусный
**palatability** *n.* вкусовая привлекательность
**panning** образование почвенной корки
**soil panning** уплотнение почвы (колѐсами машин)
**parasitic** *adj.* паразитический
**parasite** *n.* паразит; паразитическое чужеродное растение
**foliar parasite** листовой паразит
**plant parasite** растительный паразит
**parasitize** *v.* паразитировать
**parent rock material** почвообразующая порода
**particle** *n.* частица; крупица (почвы),
**particulate** *n.* твѐрдая частица; частица жидкости (*в эмульсии*)
**partitioning** *n.* разделение, расчленение, разбиение, выделение отделов
**pasteurization** *n.* пастеризация
**pasteurize** *v.* пастеризовать
**pasturage** *n.* пастбище; выгон, выпас
**pasture** *n.* подножный корм; пастбище; выгон; выпас; пастбищные угодья; пастьба; стравливание травостоя; *v.* пасти скот; пастись;
**pathogen** *n.* возбудитель болезни
**peat** *n.* торф
**soddy peat** пластовой торф
**penetrate** *v.* проникать, заглубляться
**per** *prep* за, на, в, с (каждого); (*указывает на количество, приходящееся на определенную единицу)*; ~ year за год; ~ capita/ head на душу населения

**percentage** *n.* процент; процентное отношение; процентное содержание
**perennial** *adj.* многолетний; *n.* многолетнее растение
**performance** *n.* продуктивность; производительность; показатель; КПД; работа
**growth performance** показатель роста
**perishable** *adj.* скоропортящийся (продукт), *ant* imperishable
**persistence of pesticide** длительность действия пестицида
**pest**(s) *n.* сельскохозяйственный вредитель; вредное насекомое; насекомоепаразит; сорняк
**crop pest** насекомое вредитель с-х культур
**storage pest** амбарный насекомое вредитель
**pest colonization** заселенность вредителями
**pesticide** *n.* пестицид; средство для борьбы с вредителями; химическое средство для борьбы с вредителями
**pesticide compatibility** совместимость пестицидов
**pesticide consumption rate** норма расхода пестицида
**pesticide residue** остаточное количество пестицида
**petal** *n.* лепесток
**pH** показатель степени кислотности среды
**phenomenon *(pl)*. phenomena** явление
**phosphatic** фосфатный
**phosphorus** фосфор
**photosynthesis** *n.* фотосинтез, фотохимический синтез (процесс превращения энергии видимого света в энергию химических связей, сопровождаемый образованием органических соединений и кислорода клетками высших растений из углекислого газа и воды; Ф. происходит с участием различных пигментов (хлорофилл и др)
**pickle** *n.* рассол; уксус для маринада; *v.* мариновать, солить
**picker** *n.* уборочная машина, плодосъѐмник
**picking** *n.* сбор (плодов); сортировка (плодов);
**pinch** *v.* пасынковать; отщипывать; прищипывать (растущие побеги); пинцировать
**pistil** *n.* пестик
**placement** *n.* внесение (удобрений); заделка (семян);
**plain** *n.* равнина, степь; *adj.* простой, обыкновенный, несмешанный, без добавок
**plant** *n.* растение; саженец; урожай; травянистое растение (в узком смысле); *v.* сажать (растения); сеять; засаживать; устанавливать; внедрять; засевать; озеленять; *adj.* растительный
**adult plant** взрослое растение
**attacked plant** поражѐнное растение
**bedding plant** грунтовая культура
**carnivorous plant** хищное растение
**climbing plant** вьющееся растение
**drug plant** лекарственное растение
**evergreen plant** вечнозелѐное растение
**light demanding plant** светолюбивое растение
**long day plant** растение длинного дня
**parental plant** исходное (родительское) растение
**perenial plant** многолетнее растение
**potted plant** горшечная рассада
**shade requiring plant** тенелюбивое растение

**subsequent plant** последующее растение
**transplanted plant** пересаженное растение
**wild plant** дикорастущее растение
**plant breeder** *n.* растениевод, селекционер
**planter** *n.* сеялка
**drill planter** рядовая сеялка
**tiller planter** сеялка-культиватор
**planting** *n.* посадка; высадка; посев; сев; культуру; озеленение
**plot** *n.* делянка; участок (земли);
**experimental plot** опытный участок
**sample plot** пробная делянка
**plow** *v.* пахать; вспахать; вспахивать; поддаваться вспашке; прокладывать борозду; бороздовать; разрыхлять; ~ under запахивать; *n.* соха; орало; сельское хозяйство; упряжка с плугом; пахотная земля; *амер*. плуг
**plow under** *v.* запахивать
**plowing** *n.* вспашка
**boardless plowing** безотвальная вспашка
**deep plowing** глубокая вспашка
**primary plowing** основная вспашка
**pod** *n.* боб; стручок; кожура; лузга; образовывать бобы, стручки
**podzolized soil** оподзоленная почва
**poison** *v.* отравлять; заражать; *n.* яд, отрава; токсин
**poisoning** *n.* отравление, интоксикация; применение яда
**nitrate poisoning** отравление нитратами
**weed poisoning** отравление ядовитыми травами
**pollen** *n.* пыльца
**pollinate** *v.* опылять; опылить; *с.-х. v.* опыляться
**pollination** *n.* опыление
**close pollination** родственное опыление
**cross pollination** перекрѐсное опыление
**insect pollination** опыление насекомыми
**spontaneous pollination** самоопыление
**pollutant** *n.* загрязняющий агент; поллютант
**pollute** *v.* загрязнять
**pollution** *n.* загрязнение
**air pollution** атмосферное загрязнение
**environmental pollution** загрязнение окружающей среды
**man-made pollution** антропогенное **з**агрязнение
**population** *n.* популяция; густота стояния растений; плотность насаждения; плотность посева; население/ численность населения;
**porous** *adj.* пористый
**post-emergence** период после появления всходов; послевсходовый
**potassic** *adj.* калийный, калиевый
**potassium** *n.* калий
**pound** фунт *(вес)* (англ. ф = 453,6 гр)
**poultry** *n.* домашняя птица
**powder** *n.* порошок; сухое молоко, измельченное в порошок
**practice** *n.* прием; метод; способ; технология; *v.* применять, практиковать

**agricultural practice** агроприѐм
**approved practice** испытанный агроприѐм
**conservation practice** метод мелиорации земель
**irrigation practice** методы полива
**water control practice** водоохранное мероприятие
**precipitate** *n.* осадок; *v.* осаждать(ся)
**precipitation** *n.* осадки (атмосферные); выпадение осадков
**pre-emergence** *n.* период перед прорастанием; предвсходовый
**preparation** *n.* приготовление; подготовка; препарирование; препарат
**seedbed** preparation предпосевная подготовка почвы; предпосевная обработка
**preserve** *v.* сохранять, оберегать; консервировать; *n.* заповедник, заказник
**preservation** *n.* сохранение; консервирование; охрана, защита; предохранение; предупреждение; профилактика
**preservative** *n.* консервант, консервирующее вещество; фиксатор; антисептик
**preserve** *v.* хранить, держать (*овощи, продукты*); заготовлять впрок; консервировать; сохранять, оберегать; консервировать; *n.* заповедник, заказник
**press** *v.* выжимать, прессовать, сдавливать
**prevent** *v.* предотвращать, предупреждать; препятствовать, мешать; to ~ from smth оберегать от чего-л.
**prevention** *n.* предотвращение, предохранение, предупреждение
**precision agriculture** точное земледелие; *syn*. **precision farming**
**primary** *adj.* основной, главный
**prime** *adj.* превосходный, лучший (*сорт, категория*)
**principal** *adj.* главный, основной, ведущий
**process** *n.* процесс, приѐм, способ; технологический процесс; *v.* обрабатывать, перерабатывать
**processed** *adj.* переработанный
**processing** *n.* обработка, переработка (*сырья*)
**procurement** *n.* закупки; снабжение; поставка; материально-техническое снабжение; заготовка (сельскохозяйственных продуктов) ; лесозаготовка
**produce** *n.* продукт, продукция; выпуск; объѐм выпуска; *v.* производить, вырабатывать
**production** *n.* производство; продуктивность
**crop production** растениеводство
**forage production** кормопроизводство
**grass production** выращивание трав
**seedling production** выгонка рассады
**productivity** *n.* производительность, продуктивность; *syn* performance
**productive** *adj.* производительный; продуктивный, эффективный
**profile** *n.* профиль *(почвы)*
**complete profile** полный профиль
**complex profile** профиль сложного строения
**general profile** обобщѐнный профиль
**immature profile** неразвитый профиль
**major profile** основной профиль
**modal profile** типичный профиль
**profile form** строение профиля (почвы)
**profitable** *adj.* прибыльный; рентабельный; доходный

**prohibit** *v.* запрещать; препятствовать, мешать
**proliferate** *v.* размножаться (быстро); расти; распространяться; пролиферировать
**proliferating** *adj.* размножающийся; пролиферирующий; процветающий
**propagate** *v.* размножать (ся), разводить
**propagator** *n.* теплица для рассады; термостат для проращивания семян
**propagules** *n.* росток, отпрыск, побег, сеянец, черешок
**proper** *adj.* надлежащий; правильный, должный; подходящий; отвечающий требованиям
**property** *n.* свойство, качество; отличительная черта, особенность; признак
**inherited property** унаследованное качество
**milling property** мукомольное свойство (зерна)
**pedological property** свойство почвы
**protectant** *n.* протравитель (семян, зерна)
**protection** *n.* защита, предохранение, охрана
**crop protection** защита посевов
**environmental protection** защита окружающей среды
**wind protection** защита от ветровой эрозии
**protein** *n.* белок, протеин; crude ~ сырой протеин
**provide** (smb with smth) *v.* обеспечить (кого-л. чем-л.), *syn.* to supply; to ~ smth for smb обеспечить кого-л чем-л.
**prune** *v.* обрезать (деревья, кусты, ветви); пасынковать
**pulverize** *v.* распылять, разбрызгивать; разрыхлять (почву)
**pump** *n.* помпа; насос; *v.* качать (*насосом*)
**purification** *n.* очищение; очистка
**purity** *n.* чистота; чистота; беспримесность; правильность
**seed purity** чистота семян
**purity of variety** чистота сорта
**pure** *adj.* чистый, без примесей
**Q**
**quality** *n.* качество; ~ grade стандарт качества
**baking** (*syn.* **bread-making**) **quality** хлебопекарное качество (пшеницы)
**milling quality** мукомольная ценность (зерна)
**quantify** *v* определять количество, измерять, мерить *syn* measure
**quantitative** *adj.* количественный
**quantity** *n.* количество; *syn* amount
**seeding quantity** норма высева (семян)
**quartz** *n.* кварц
**R**
**rake** *v.* грести, сгребать граблями
**rainfall** *n.* осадки, ливень
**raise** *v.* поднимать, выращивать
**rancid** *adj.* прогорклый, протухший (*о жирах, мясе*)
**rancidity** *n.* прогорклость; прогорклый запах/ вкус; *syn.* rancidness
**random** *adj.* осуществляемый в произвольной последовательности; с произвольным обращение; случайный; непродуманный; беспорядочный; произвольный; выбранный наугад; бессистемный; разный; смешанный; нерегулярный; рандомизированный
**random sampling** произвольная выборка/ взятие образцов
**range** (from … to) *v.* колебаться в известных пределах

**rank** *v.* ценить, располагать по рангу; котироваться, занимать какое-л. место
**rapid** *adj.* быстрый, скорый
**rate** *n.* доза, норма; скорость, быстрота (*как физическая характеристика*)
**ratio** *n.* отношение, пропорция; коэффициент; соотношение
**raw** *adj.* сырой, необработанный; ~ materials сырье
**recognize** *v.* признавать, узнавать
**recycling** *n.* переработка отходов; повторное использование; использование для другой цели
**reduce** *v.* ослаблять, понижать, сокращать(ся), уменьшать(ся), убывать
**reduction** *(in smth) n.* снижение, уменьшение, сокращение *(чего-л.)*
**refrigerating** *adj.* охлаждающий, холодильный
**relationship** *n.* взаимоотношение, взаимосвязь
**relatively** *adv.* относительно, сравнительно
**relay cropping** сменные уплотнѐнные посевы
**release** *v.* отпускать, выпускать, освобождать
**reliable** *adj.* надежный, достоверный, заслуживающий доверие
**rely** *(on smb/ smth) v.* полагаться, рассчитывать *(на кого-л./что-л.)*
**remain** *v.* оставаться; находиться; оставаться в каком-л. состоянии
**remove** *v.* перемещать, убирать; удалять, устранять
**replace** (by/ with) *v.* заменять, замещать *(чем/ кем-л.)*
**reproduce** *v.* размножаться; воспроизводить
**reproductive** - репродуктивный, половой
**reproductive organ** орган размножения
**require** *(smth) v.* нуждаться (в чем-л.); требовать *(чего-л.)*
**requirement** *n.* требование; необходимое условие; нужда, потребность; to meet the ~s удовлетворять потребностям; отвечать требованиям
**residue** *n.* (*хим.*) осадок; остаток; остаточный
**resilience** *n.* устойчивость; жизнестойкость
**resistance** *n.* устойчивость
**resistant** *adj.* устойчивый, резистентный
**resource(s)** *n.* ресурс(ы), средства; natural ~s природные ресурсы
**respectively** *adj.* в указанном порядке; соответственно, соответствующим образом
**restrict** *v.* ограничивать (*в пределах чего-л.*), *syn* limit
**result** *(in smth) v.* приводить (*к чему-л.*), кончаться (*чем-л.*); иметь результатом; ~ from smth следовать, происходить в результате; происходить от, обуславливаться
**retard** *v.* замедлять; задерживать; тормозить *(развитие и т. п.)*
**retain** *v.* удерживать, задерживать
**return** *n.* доход, прибыль
**(be) rich in smth** иметь высокое содержание, богатый чем-л.; *syn.* be high in smth; *ant.* to be low in smth
**rich soil** - плодородная почва
**Rhizobium (***pl.* **Rhizobia)** микориза (клубеньковая бактерия)
**ripe** *adj.* спелый, зрелый
**ripen** *v.* зреть; созревать
**ripening** *n.* вызревание, созревание, *syn* ageing
**rise** *n.* повышение, увеличение
**rise** (rose, risen) *v.* подниматься, возрастать (в объеме)

**rock** *n.* скальная порода;
**roll** *v.* прикатывать почву
**root** *n.* корень; укореняться
**take roots** пускать корни, приниматься (о растении), приживаться
**tap root** стержневой корень
**rooting** *n.* укоренение
**root hairs** корневые волоски
**rot** *v.* гнить, загнивать
**rotation** *n.* севооборот
**rotation interval** интервал севооборота, чередования культур
**row** *n.* ряд; гряда
**row applicator** машина для внесения удобрений в междурядья
**row binder** сноповязалка для пропашных культур
**row crop production** возделывание пропашных культур
**row crop system** пропашная система земледелия
**row-crop thinner** прореживатель пропашных культур
**row culture** рядковая культура
**row drill** рядовая сеялка
**row spacing** густота посадки
**row tiller** фрезерный культиватор
**row width adjustment** регулировка ширины междурядий
**rumen** *n.* рубец (*первый отдел желудка жвачных*)
**run (ran-run)** *v.* януться, расти (о растениях), направлять движение
**rust** *n.* ржавчина; продукты коррозии; *бот.* головня; ржа
**cereal rust** ржавчина хлебных злаков (возбудители - Puccinia)
**stem rust** стеблевая ржавчина
**rye** *n.* рожь
**S**
**saline soil** - засоленная почва, солонец
**salinity** *n.* засоленность (почвы)
**salinity level** степень засолѐнности почвы
**sampling** *n.* отбор проб/ образцов
**sandy** *adj*. песчаный; опесчаненный
**sandy loam** суглинок, суглинистая почва, легкий суглинок, опесчаненный суглинок
**sanitary** *adj*. санитарный, гигиенический
**sap** *n.* сок растения; *v.* впитывать
satisfactory *n.* удовлетворительный
**satisfy** *(smb with smth) v.* удовлетворять (*кого-л.; чьи-л. требования, запросы*)
**scarcity** *n. (of smth)* недостаток, нехватка *(чего-л.)*
**science** *n.* наука
**scraps** *n.* остатки
**scythe** *n.* коса; садовая косилка; газонокосилка; выкашивание; косьба; *v.* косить
**seal** *v.* запечатывать; заклеивать; плотно закрывать; образовывать корку
**sedimentation** *n.* осаждение; отложение осадка
**seed** *n.* семя; сеять
**seed ball** семенной клубочек; шаровидный плод
**seedbed** *n.* семенное ложе; почва для посева, пашня
**seed coat** семенная оболочка

**seedless** *adj.* бескосточковый; бессемянный
**seedling** *n.* сеянец, проросток, сеянец, саженец (*мн.ч.* рассада)
**seed piece** посадочный клубень *(или часть его)*
**seed vigor** энергия прорастания семян
**seeding vigor** всхожесть, мощность прорастания
**segregation** *n.* отделение, изоляция; отсоединение
**select** *v.* отбирать, выбирать
**self-seeding** самосев
**self-pollinated** *adj.* самоопыляющаяся
**semi-arid** полузасушливый
**semifrozen** *adj.* полузамороженный
**seminal** семенной, зародышевый
**semisoft** *adj.* полутвердый
**sensitive** *adj.* чувствительный, восприимчивый
**separate** *v.* отделять, разделять; *(хим.)* выделять из раствора (*отстаиванием*)
**serum** *n.* (*физиол.*) сыворотка; *pl* **sera**
**set (set, set)** *v.* сажать *(растение; молодой побег растения*), завязывать(ся) *(о плодах или семенах), n.* завязь *(плодов);* отрезок корня для посадки; лук-севок, посадочный материал
**setting** *n.* сгущение, затвердение
**severe** *adj.* суровый
**shade tolerance** - теневыносливость
**shallow** *adj.* мелкий
**shallow-rooted** с неглубокой корневой системой
**shape** *n.* форма, вид
**shatter** *v.* осыпаться *(о зерне)*
**shelf life** *n.*. срок хранения (*продукции*); срок годности; *syn* **store life**
**ship** *v.* перевозить (ся), отправлять (ся)
**shipment** *n.* перевозка товаров
**shock** *n.* копна (из снопов); скирда
**shock gatherer** копноподборщик
**shoot** *n.* росток, побег
**shorten in** *v.* укорачивать (ся),
**shred** (shred) *v.* резать на кусочки
**shrink** (shrank, shrunk) *v* сокращаться; уменьшаться; усыхать
**shrinkage** *n.* сжатие; сокращение; уменьшение; усушка
**side dressing** междурядная подкормка
**side effect** побочный эффект
**silage** *n.* силос; силосовать
**silt** *n.* ил; осадок; илистое отложение
**silt loam** пылеватый суглинок
**silt up** *v.* заиливать
**similar** *adj.* подобный; похожий, сходный; ~ to smth подобный чему-л.
**similarity** (among, between; to) *n.* подобие, похожесть, сходство, схожесть
**single variety grower** фермер, специализирующийся на выращивании одного сорта какой-л. культуры
**size** *n.* размер
**skim** *v.* снимать верхний слой

**skin** *n.* кожа, шкура; *v.* сдирать кожу, шкуру
**slight** *adj.* легкий, слабый
**slope** *n.* уклон; покатость; наклон; склон;
**slug** *n.* слизень
**small fruits** *n.* ягоды
**small grains** зерновые культуры (кроме кукурузы)
**small plot technique** мелкоделяночный опыт
**smoke** *n.* коптить
**smooth** *adj.* однородный; ~ body однородная консистенция; ~ texture ровная текстура
**soak** *v.* смачивать, впитывать, всасывать
**sod** *n.* дерн, пласт
**sod formation** дернообразование, задернение
**sod soil** дерновая почва
**soil** *n.* почва ; *(агрохим.)* почвенный нанос; почвенный слой; растительная земля; *adj.* почвенный; грунтовой
**ABC soil** почва с профилем
**abnormal soil** незрелая почва
**absorptive soil** впитывающая почва
**active soil** биологически активная почва
**aged soil** старая почва
**agrogenic soil** старопахотная почва
**antecedent soil** исходная почва
**imperfectly drained soil** почва с недостаточным дренажем
**light soil** легкая почва
muck soil гумусовая, перегнойная почва
**poor soil** неплодородная почва
**soil-building** *n.* почвообразование
**soil capability** производительность почвы
**soil container** ларь для почвенных образцов
**soil conservation** охрана почв; охрана и рациональное использование почв; предотвращение эрозии; защита грунта; предотвращение истощения почвы
**soil criterion** (*pl.*criteria) показатель почвы
**soil-fertility** плодородие почвы
**soil fertility survey** определение запасов питательных веществ в почве
**soil-forming factor** фактор почвообразования
**soil heterogeneity** неоднородность почвы
**soil-inhabiting phytopathogenic fungi** – почвообитающий фитопатогеный гриб
**soil map** почвенная карта
**soil moisture storage** запас почвенной влаги
**soil morphology** морфология почвы
**soil pH-tester** прибор для определения кислотности почвы
**soil-plant-fertilizer relation** "треугольник" Прянишникова; взаимоотношение почвы, растения и удобрения
**soil salinization** засоление (почвы)
**solid** *n* твердая частица, твердая фаза; *pl* сухой остаток, сухие вещества; total ~s общий плотный остаток, общее содержание сухих веществ
**solid** *adj.* твердый (*об агрегатном состоянии вещества*); чистый, без примесей (*о цвете*); прочный, крепкий; солидный (*чаще всего о телосложении*)

**solidify** *v.* затвердеть, отвердеть, загустевать
**soluble** *adj.* растворимый; fat ~ жирорастворимый; water ~ водорастворимый
**solution** *n.* растворение; раствор
**sorghum** *n.* сорго
**sour** *adj.* кислый, кисловатый; прокисший, перекисший (*испорченный в результате брожения, длительного хранения и т. п.*)
**source** *n.* источник
**sow (sowed, sown)** *v.* сеять
**soybeans** *n.* соя
**spacing** *n.* расстояние; размещение; расположение; расстояние друг от друга; пространство; междурядье; размещать; площадь питания; шаг посадки; шаг посева; шаг расстановки; ширина междурядья
**species** *n.* (*pl.* без изменения) вид, род, разновидность
**spice** *n.* специя, пряность; *v* приправлять специями
**spoilage** *n.* порча, гниение пищевых и скоропортящихся продуктов; ~ microorganisms микроорганизмы, вызывающие порчу
**spray** *v.* опрыскивать, распылять, обрызгивать
**spread** (spread) *v.* раскидывать, разбрасывать, устилать; разносить(ся), распространять(ся)
**spreadability** *n.* консистенция
**sprinkle irrigation** *n.* орошение дождеванием
**spring** *v.* произрастать, зарождаться
**sprout** *n.* росток; *v.* пускать ростки, прорастать
**stable** *n.* конюшня; конский
**stage** *n.* стадия, этап
**stained** *adj.* пятнистый; имеющий какую-либо окраску
**stained zone** окислительно-восстановительная зона
**stamen** *n.* тычинка
**stand** *n.* густота всходов, стеблестой, травостой; **(stood, stood)** *v.* устоять, выдержать
**standard** *adj.* обычный, стандартный; норма
**standard of living** - жизненный уровень
**standardized** *adj.* нормализованный
**starch** *n.* крахмал
**starchy** *adj.* крахмалистый
**start** *v.* начинать; расти (о растениях)
**starter** *n.* закваска; bulk ~ производственная закваска
**steamed** *adj.* стерилизованный
**stem** *n.* стебель, ствол
**steppe soil** степная почва
**stew** *v.* тушиться, томиться (*на огне*)
**stir** *v.* мешать, помешивать, размешивать; взбалтывать
**stock** *n.* подвой
**storable** *adj.* непортящийся (способный сохраняться)
**storage** *n.* хранение, хранилище; склад; ~ life срок хранения срок годности
**store** *v.* запасать, накапливать, сохранять; хранить на складе
**store (up)** *v.* накапливать; запасать
**strain** *n.* линия, штамм (*для микроорганизмов*)
**structure** *n.* строение, структура; конструкция, устройство; aggregate ~ агрегатная

структура
**stuff** *n.* вещество, материал
**subject** (to) *v.* подвергать (*воздействию, влиянию*)
**subsoil** *n.* подпахотный слой
**substance** *n.* вещество
**substitute** *n.* заменитель; *v.* заменять, использовать вместо чего-л.
**subsurface loosening** безотвальное рыхление
**succeeding crop** последующая культура
**success** *n.* успех
**succulent** *adj.* сочный, мясистый
**suffer** *v.* страдать
**suitable** *(for smth) adj.* годный, подходящий, пригодный, применимый, соответствующий
**sulfur (sulphur)** сера
**sulphur dioxide** двуокись серы
**sunlight** *n. syn.* **sunshine** солнечный свет
**superior** *adj.* лучший, превосходный, высшего качества
**supplement** *n.* добавление, дополнение; *pl* добавки к кормам; nutritive ~ пищевые добавки
**supply** *n.* предложение; запас; снабжение, поставка, обеспечение; *pl* запасы, общее количество
**supply** *v.* снабжать, поставлять, обеспечивать, давать; supply smb with smth/ supply smth to smb поставлять что-л. кому-л., снабжать кого-л. чем-л.
**support** (smb/ smth) *v.* поддерживать; содействовать, способствовать
**surface** *n.* поверхность
**surplus** *n.* избыток, излишек, остаток; *adj.* излишний, избыточный; добавочный
**survive** *v.* выжить, пережить
**susceptibility** *n.* восприимчивость; чувствительность
**susceptible** *(to smth) adj.* восприимчивый, чувствительный *(к чему-л.)*
**sustainable** *adj.* устойчивый; жизнеспособный
**sward** *n.* травостой
**sweet** *adj.* сладкий
**sweetened** *v.* подслащивать, делать сладким
**T**
**take (took, taken) in oxygen** поглощать кислород
**tank-truck loading operation** налив автоцистерны
**taste** *n.* вкус, sour to the ~ кислый на вкус
**technique** *n.* метод, способ; технический прием, технология техника, технические приемы; метод; методика, способ; *syn.* method , means
**temporary** *adj.* временный
**temperate** *adj.* умеренный (о климате)
**tend** (to/ towards) *v.* иметь тенденцию (к чему-л.); склоняться (к чему-л.)
**tender** *adj.* нежный, мягкий (плод)
**tenderness** *n.* нежность, мягкость
**test** *n.*проба, испытание, исследование, опыт, анализ; *v.*пробовать, испытывать
**bench test** лабораторное исследование
**germination test** испытание на всхожесть (семян)
**soil test** почвенный анализ

**variety test** сортоиспытание
**texture** *n.* механический состав (почвы); текстура, строение ткани; степень плотности ткани; структура
**thaw** *v.* таять; оттаивать; размораживать(ся)
**thicken** *n.* уплотнение, загущение; *v.*загущать; увеличивать мощность (почвы)
**thin** *v.* прореживать (посевы); прорывать, букетировать (корнеплодные культуры); *adj.* топкий, редкий, не густой
**thinner** *n.* прореживатель, букетировщик
**thinning** букетировка; прореживание
**hand thinning** ручная букетировка
**chemical thinning** химическая букетировка
**thoroughly** *adv.* тщательно, основательно
**thresh** *n.* обмолот; *v.* молотить; вымолачивать; обмолачивать
**thresher** *n.* молотилка
**threshold** *n.* мера чувствительности, порог
**tie (up)** *v.* подвязывать, привязывать (растения); связывать (питательные вещества)
**till** *v.* обрабатывать, возделывать (землю); культивировать
**tillage** *n.* подготовка почвы; обработка почвы; пахота; рыхление; возделанная земля; пашня; запашка; разработка; обработка земли; вспашка; рыхление земли; подготовка почвы (к посеву)
**broadcast tillage** сплошная обработка почвы
**combined tillage** совмещѐнная обработка почвы
**conservation tillage** противоэрозионная обработка почвы
**inter row tillage** междурядная обработка почвы
**minimum tillage** обработка с минимальным числом рыхлений
**nonplow (***syn.* **plowless) tillage** бесплужная обработка
**oriented tillage** обработка почвы с заданной направленностью борозд
**primary tillage** первичная обработка
**rough tillage** грубая предварительная обработка
**subsoil tillage** безотвальная обработка почвы
**surface tillage** поверхностная обработка почвы
**zero tillage** гербицидная обработка
**tiller** *n.* культиватор, мотыга, фреза
**tillage operations** механическая обработка почвы
**tilth** *n.* глубина вспашки; обрабатываемая земля; пахотная земля; структура почвы; физическая спелость почвы; качество обработки почвы; пригодность почвы к обработке
**tilth process** процесс физического созревания (пахотного слоя)
**tilth roll** каток для предпосевного прикатывания почвы
**tilth stage** стадия физической спелости (почвы)
**tilth state** состояние физической спелости (почвы)
**tilth-top soil** пахотный слой
**timing** *n.* выбор времени; конвейер сроков (посева);
**tissue** *n. (биол.)* ткань; connective ~ соединительная ткань
**tobacco** *n.* табак
**tobacco in leaf** листовой табак
**chewing tobacco** жевательный табак
**choice tobacco** отборный табак

**snuff tobacco** нюхательный табак
**tolerant** *adj.* выносливый, устойчивый, толерантный
**top** *n.* верхушка, ботва (корнеплодов); надземная часть (растения); верхний
**topdressing** *n.* поверхностное внесение удобрений; (некорневая) подкормка
**topping** *n.* прищипывание, пинцировка
**top soil** верхний пахотный слой почвы; верхний горизонт
**total** *adj.* весь, целый, полный, общий суммарный
**tough** *adj.* жѐсткий (*особенно о пище*)
**trace** *n.* след, незначительное количество; ~ amount ничтожно малое количество; ~ minerals микроэлементы
**trace elements** микроэлементы
**train** *v.* формировать (кроны плодовых деревьев и кустарников); направлять рост (растений)
**transform** *v.* превращать, преобразовать
**translocate** *v.* передвигать, перемещать
**transpiration** *n.* транспирация (испарение воды растениями)
**transplant** *n.* саженец; пикированная рассада; пересаженное растение; *v.* пересаживать, пикировать
**treat** *v.* обрабатывать; протравлять (семена); вносить, применять (удобрения, ядохимикаты)
**treatment** *n.* уход; обработка; протравление (семян); внесение (удобрений, ядохимикатов)
**trial** *n.* проба, испытание, исследование, опыт, проверка
**farm scale trial** производственный опыт
**field trial** полевой опыт
**tuber** *n.* клубень
**turf recovery** восстановление дерна
**turn** *v.* ворошить (сено); перелопачивать (зерно)
**turn the soil** распахивать землю
**turn under** запахивать
**two-row** *adj.* двухрядный
**two-row potato harvester** двухрядный картофелеуборочный комбайн
**U**
**ultrafiltration** *n.* ультрафильтрация (*технология очистки воды путѐм фильтрации через сверхтонкие мембраны*); ~ concentration концентрирование ультрафильтрацией
**unable (to)** *adj.* неспособный
**undergo** (underwent, undergone) *v.* испытывать, подвергаться (*чему-л.)*
**underground** *adj.* подземный; *n.* подпочва
**underseeding** *n.* подсев
**undeveloped** *adj.* необработанный, неосвоенный *(о почве)*
**undo** (**undid – undone)** *v.* уничтожать *(сорняки),* губить *(рост растений)*
**uniform** *adj.* однородный, равномерный; единообразный, дружный (о всходах)
**uniformly** *adj.* единообразно, равномерно (*по времени*)
**unique** *adj.* уникальный; исключительный; необыкновенный
**unsaturated** *adj.* ненасыщенный
**upper** *adj.* верхний
**uproot** *v.* вырывать с корнем, выкорчѐвывать, корчевать
**use** *n.* употребление, применение, польза; использование; *v.* использовать, пользо-

ваться, применять, употреблять; *syn*. utilize
**usefulness** *n.* применимость; пригодность
**uptake (uptook - uptaken)** *v.* поглощать, усваивать; *n.* поглощение, усвоение, потребление
**V**
**valuable** *adj.* полезный, ценный; высоко ценимый; *syn.* **useful**
**value** *n.* важность, ценность, полезность; *syn*. importance**;** breeding **~** племенная ценность; nutritional/ nutritive ~ питательная/ пищевая ценность; стоимость, цена; рыночная цена
**variety** *n.* разновидность; сорт
**appreciable variety** перспективный/ обещающий сорт
**changeable variety** невыровненный сорт
**early-season variety** сорт с коротким вегетационным периодом
**full-season variety** сорт с длинным вегетационным периодом
**high-protein variety** сорт с высоким содержанием белка
**mixed varieties** сортосмесь
**quality variety** элитный сорт
**salt tolerant variety** солеустойчивый сорт
**variety assortment** сортовой состав/ ассортимент
**variety check** сортовой контроль
**variety certificate** сортовое свидетельство
**variety certification** аттестация сортности
**variety degeneration** вырождение сорта
**variety purity** сортовая чистота
**variety test plot** сортоиспытательная делянка
**variety testing** сортоиспытание
**variety trial on a farm scale** производственное сортоиспытание
**various** *adj*. различный, разный, разнообразный
**vary** *v*. менять(ся), изменять(ся), варьировать; *syn*. differ; ~ from … to … изменяться, колебаться в пределах (от … до/ к …); ~ in smth различаться по (*какому-л. признаку*); различаться в чем-л. (*размере*, *объеме*); ~ with smth меняться, различаться в зависимости от чего-л., зависеть от чего-л.
**vegetation** *n* произрастание; рост; растительность; растительная жизнь; рост *(лат. vegetatio)*; растительный покров; *adj*. вегетационный
**vegetative** *adj*. вегетативный, вегетационный, растительный; овощной
**veterinarian** *n.* ветеринарный врач
**viable** *adj*. жизнеспособный
**vigour (vigor)** *n.* мощь, сила
**vigorous** *adj*. сильный, энергичный (о растениях); мощный (о росте)
**vine** *n.* лоза; вьющееся растение; виноград; ус; плеть
**vine plant** стелющееся растение
**vineyard** *n.* виноградник
**virus** *n.* вирус
**virusfree** *adj*. незаражѐнный вирусом
**viruslike** *adj*. вирусоподобный
**viscosity** *n.* вязкость
**visible** *adj*. видимый, очевидный, явный
**vital** *adj*. жизненный; (жизненно) важный, существенный; необходимый

**viticulture** *n.* виноградарство
**volatile** *adj. (хим.)* летучий, быстро испаряющийся
**volunteer weeds** самосевные сорняки
**W**
**walk** *n.* пастбище, выгон, выпас
**washing** *n.* промывка; отмывка
**waste** *n.* пустыня, пустошь; *n.* отходы (производства)
**water** *n.* вода, водоѐм
**ground/ underground/ subterranean waters** грунтовые воды
**melt/ thaw water** талая вода
**residential waters** бытовые сточные воды
**waste water** сточные воды
**watering** *n.* водопой, полив, орошение
**waterlogged** *adj.* заболоченный
**water-holding capacilty** водоудерживающая способность
**waxing** *n.* парафинирование; пропитывание воском; воскование
**weed** *n.* сорняк; сорная трава; *v.* полоть; пропалывать; выпалывать; выдѐргивать сорняки
**carried weed** заносный сорняк
**ill/persistent weed** злостный сорняк
**weedkille**r *syn.* **weedicide** *n.* гербицид
**selective weedkille**r гербицид избирательного действия
**total weedkille**r гербицид общего действия
**weed out** *v.* уничтожать сорняки
**weed seeds** семена сорняков
**weigh** *v.* взвешивать
**weight** *n.* вес; масса; ~ loss потеря веса
**weighing** *n* взвешивание, определение массы
**wheat** *n.* пшеница
**hard wheat** твердая пшеница
**soft wheat** мягкая пшеница
**spring wheat** яровая пшеница
**winter wheat** озимая пшеница
**wheat cultivation technology** технология возделывания пшеницы
**whey** *n.* сыворотка; ~ protein сывороточный белок
**whip** *v.* взбивать
**whole** *adj.* цельный
**whole kernel corn** цельнозѐрная кукуруза
**wholesome** *adj.* целебный; полезный для здоровья; ~ food здоровая пища
**wide-row** *adj.* широкорядный (о посеве)
**widespread** *adj.* широко распространенный
**wilding** *n.* дичок, дикое растение; одичавшее растение
**wilt** *v.* вянуть, увядать, поникать; *n.*вилт *(болезнь увядания)*
**wind row** валок сжатого хлеба или скошенной травы
**winter** *v.* зимовать, перезимовывать
**winter-annual** озимый
**winterhardy** *adj.* зимостойкий
**winterkilling** вымерзание *(растений)*

**wireworm** *n.* нематода, проволочник
**wire-row planting** посев по мерной проволоке
**wither** *v.* увядать, сохнуть, вянуть, засыхать
**withering** *n.* вилт, увядание
**withstand** *v.* **(withstood – withstood)** сопротивляться, противостоять, выдерживать
**Y**
**year** *n.* год
**fruitful year/ high yield** урожайный год
**lean/unfruitful year** неурожайный год
**yearling** *n.* однолетний саженец, однолетнее растение
**yeast** *n.* дрожжи; закваска
**yield** *n.* урожай; размер выработки; выход готовой продукции; количество добытого или произведенного продукта; выход (*продукции*); milk ~ надой молока; meat ~ выход мяса; *v.* производить; приносить; давать; приносить плоды
**bulk yield** валовой сбор
**check yield** урожай контрольной делянки
**conventional yield** плановая урожайность
**crop yield** урожайность культур
**dry matter yield** урожай сухой массы
**fresh yield** выход зелѐной массы
**further yield** виды на урожай
**gross yield** валовой урожай
**gross yield** общий выход продукции
**heavy yield** обильный урожай
**high yield year** высокоурожайный год
**marketable yield** товарный урожай
**negative yield response** отрицательный эффект
**relative yield** относительный урожай (по сравнению с контролем или фоном)
**yield gain** повышение урожая
**yield per unit** урожай на единицу площади
**Z**
**zoning** *n.* районирование
**zootechnician** *n.* зоотехник
**zyme** *n.* фермент

# 4.2. УЧЕБНАЯ ПРОГРАММА ДИСЦИПЛИНЫ

## 4.2.1. АНГЛИЙСКИЙ ЯЗЫК

К-1 2023

Учреждение образования
«Брестский государственный технический университет»

УТВЕРЖДАЮ
Первый проректор БрГТУ
_____ М.В.Нерода
23.06. 2023

Регистрационный № УД-23-1-048 /уч.

Иностранный язык (английский)

Учебная программа учреждения высшего образования по учебной дисциплине для специальностей:

7-07-0732-02 Инженерные сети, оборудование зданий и сооружений *(Профилизация – Теплогазоснабжение, вентиляция и охрана воздушного бассейна)*
7-07-0732-02 Инженерные сети, оборудование зданий и сооружений *(Профилизация – Водоснабжение, водоотведение и охрана водных ресурсов)*
6-05-0811-03 Мелиорация и водное хозяйство

2023 г.

Учебная программа составлена на основе учебных планов, разработанных на основе типовых учебных планов, для специальности 7-07-0732-02 Инженерные сети, оборудование зданий и сооружений (утвержденного Министерством образования Республики Беларусь 06.02.2023, регистрационный № 7-07-07-002/пр.); для специальности 6-05-0811-03 Мелиорация и водное хозяйство (утвержденного Министерством образования Республики Беларусь 18.01.2023, регистрационный № 6-05-08-012/пр.); с учетом типовой учебной программы для высших учебных заведений № ТД–СГ.013/тип. от 15.04.2008.

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РЕКОМЕНДОВАНА К УТВЕРЖДЕНИЮ:

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Заведующий кафедрой _____ В.И.Рахуба
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Методической комиссией факультета инженерных систем и экологии
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## ПОЯСНИТЕЛЬНАЯ ЗАПИСКА

Статус иностранного языка как общеобразовательной дисциплины, реально востребуемой в практической и интеллектуальной деятельности специалиста, является в современном поликультурном и многоязычном мире особенно значимым. Иностранный язык рассматривается не только в качестве средства межкультурного и профессионального общения, но и средства формирования личности как субъекта национальной и мировой культуры.

Учебная программа разработана на основе Концепции обучения иностранным языкам в системе непрерывного образования Республики Беларусь, концепции языкового образования, концепции учебного предмета «Иностранный язык» с учетом требований государственных образовательных стандартов высшего образования, действующих рекомендаций европейской языковой образовательной политики, а также с учетом типовой учебной программы «Иностранный язык», утвержденной Министерством образования Республики Беларусь 13.02.2023, регистрационный № ТД-СГ.013/тип., и указанными в ней нормативными документами.

Главная цель обучения иностранному языку заключается в формировании иноязычной коммуникативной компетенции будущего специалиста, позволяющей использовать иностранный язык как средство межличностного и профессионального общения. Достижение главной цели предполагает комплексную реализацию познавательной, развивающей, воспитательной и практической целей.

В качестве стратегической интегративной компетенции в процессе обучения иностранным языкам выступает коммуникативная компетенция в единстве всех составляющих: языковой, речевой, социокультурной, компенсаторной, учебно-познавательной компетенций.

Языковая компетенция – совокупность языковых средств.

Речевая компетенция – совокупность навыков и умений речевой деятельности (говорение, письмо, аудирование, чтение), знание норм речевого поведения, способность использовать языковые средства в связной речи в соответствии с ситуацией общения.

Социокультурная компетенция – совокупность знаний о национально-культурной специфике стран изучаемого языка и связанных с этим умений корректно строить свое речевое и неречевое поведение.

Компенсаторная компетенция – совокупность умений использовать дополнительные вербальные средства и невербальные способы решения коммуникативных задач в условиях дефицита имеющихся языковых средств.

Учебно-познавательная компетенция – совокупность общих и специальных учебных умений, необходимых для осуществления самостоятельной деятельности по овладению иностранным языком.

Основными задачами изучения дисциплины являются:

– унификация полученных ранее умений и навыков чтения текстов на расширенном языковом материале;

– формирование умений и навыков чтения и понимания текстов по специальности в ситуациях поиска смысловой информации;

– владение профессиональной лексикой;

– знакомство с историей и культурой страны изучаемого языка.

В результате изучения учебной дисциплины «Иностранный язык» у студентов

СПЕЦИАЛЬНОСТЕЙ «МЕЛИОРАЦИЯ И ВОДНОЕ ХОЗЯЙСТВО», «ИНЖЕНЕРНЫЕ СЕТИ, ОБОРУДОВАНИЕ ЗДАНИЙ И СООРУЖЕНИЙ (ПРОФИЛИЗАЦИЯ – ТЕПЛОГАЗОСНАБЖЕНИЕ, ВЕНТИЛЯЦИЯ И ОХРАНА ВОЗДУШНОГО БАССЕЙНА)», «ИНЖЕНЕРНЫЕ СЕТИ, ОБОРУДОВАНИЕ ЗДАНИЙ И СООРУЖЕНИЙ (ПРОФИЛИЗАЦИЯ – ВОДОСНАБЖЕНИЕ, ВОДООТВЕДЕНИЕ И ОХРАНА ВОДНЫХ РЕСУРСОВ)» (дневная форма получения высшего образования) формируются следующие универсальные компетенции:

– УК-3. Осуществление коммуникации на иностранном языке для решения задач межличностного, профессионального и межкультурного взаимодействия.

В результате изучения учебной дисциплины «Иностранный язык» у студентов СПЕЦИАЛЬНОСТИ «ИНЖЕНЕРНЫЕ СЕТИ, ОБОРУДОВАНИЕ ЗДАНИЙ И СООРУЖЕНИЙ (ПРОФИЛИЗАЦИЯ – ТЕПЛОГАЗОСНАБЖЕНИЕ, ВЕНТИЛЯЦИЯ И ОХРАНА ВОЗДУШНОГО БАССЕЙНА)» (заочная форма получения высшего образования и заочная форма получения высшего образования, интегрированного со средним специальным образованием) формируются следующие универсальные компетенции:

– УК-3. Осуществление коммуникации на иностранном языке для решения задач межличностного, профессионального и межкультурного взаимодействия.

В результате изучения дисциплины «Иностранный язык (английский)» студент должен:

ЗНАТЬ:

– особенности системы изучаемого иностранного языка в его фонетическом, лексическом и грамматическом аспектах;

– социокультурные нормы бытового и делового общения в современном поликультурном мире;

– историю и культуру страны изучаемого языка;

– основные формы культурной коммуникации.

УМЕТЬ:

– вести общение профессионального и социокультурного характера на иностранном языке, сочетая диалогические и монологические формы речи;

– читать литературу на иностранном языке по профилю обучения (изучающее, ознакомительное, просмотровое и поисковое чтение);

– использовать иностранный язык в качестве инструмента профессиональной деятельности: перевод, реферирование и аннотирование профессионально значимых текстов и научных работ;

– использовать стилистические нормы иностранного языка в соответствии с ситуацией профессиональных или деловых взаимоотношений.

ВЛАДЕТЬ:

– правилами речевого этикета;

– рациональным и эффективным языковым поведением в ситуациях межкультурной коммуникации;

– основными видами монологического высказывания (информирование, пояснение, уточнение).

Учебная дисциплина связана с циклом общенаучных и общепрофессиональных дисциплин.

План учебной дисциплины для дневной формы получения высшего образования

| Код специальности (направления специальности) | Наименование специальности (направления специальности) | Курс | Семестр | Всего учебных часов | Количество зачетных единиц | Аудиторных часов (в соответствии с учебным планом УВО) | | | | | Академических часов на курсовой проект (работу) | Форма текущей аттестации |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Всего | Лекции | Лабораторные занятия | Практические занятия | Семинары | | |
| 6-05-0811-03 | Мелиорация и водное хозяйство | 1 | 1 | 124 | 3 | 68 | – | – | 68 | – | – | зачет |
| | | 2 | 2 | 124 | 3 | 68 | – | – | 68 | – | – | экзамен |
| 7-07-0732-02 | Инженерные сети, оборудование зданий и сооружений (профилизация – Теплогазоснабжение, вентиляция и охрана воздушного бассейна) | 1 | 1 | 110 | 3 | 48 | – | – | 48 | – | – | зачет |
| | | 1 | 2 | 110 | 3 | 48 | – | – | 48 | – | – | экзамен |
| | | 2 | 3 | 110 | 3 | 48 | – | – | 48 | – | – | зачет |
| 7-07-0732-02 | Инженерные сети, оборудование зданий и сооружений (профилизация – Водоснабжение, водоотведение и охрана водных ресурсов) | 1 | 1 | 110 | 3 | 48 | – | – | 48 | – | – | зачет |
| | | 1 | 2 | 110 | 3 | 48 | – | – | 48 | – | – | экзамен |
| | | 2 | 3 | 110 | 3 | 48 | – | – | 48 | – | – | зачет |

План учебной дисциплины для заочной формы получения высшего образования

| Код специальности (направления специальности) | Наименование специальности (направления специальности) | Курс | Семестр | Всего учебных часов | Количество зачетных единиц | Аудиторных часов (в соответствии с учебным планом УВО) | | | | | Академических часов на курсовой проект (работу) | Форма текущей аттестации |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Всего | Лекции | Лабораторные занятия | Практические занятия | Семинары | | |
| 7-07-0732-02 | Инженерные сети, оборудование зданий и сооружений | 1 | 1 | 100 | 3 | 10 | – | – | 10 | – | – | зачет |
| | | 1 | 2 | 100 | 3 | 12 | – | – | 12 | – | – | экзамен |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (профилизация – Теплогазоснабжение, вентиляция и охрана воздушного бассейна) | 2 | 3 | 100 | 3 | 10 | – | – | 10 | – | – | зачет |

План учебной дисциплины для заочной формы получения высшего образования, интегрированного со средним специальным образованием

| Код специальности (направления специальности) | Наименование специальности (направления специальности) | Курс | Семестр | Всего учебных часов | Количество зачетных единиц | Аудиторных часов (в соответствии с учебным планом УВО) | | | | | Академических часов на курсовой проект (работу) | Форма текущей аттестации |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Всего | Лекции | Лабораторные занятия | Практические занятия | Семинары | | |
| 7-07-0732-02 | Инженерные сети, оборудование зданий и сооружений (профилизация – Теплогазоснабжение, вентиляция и охрана воздушного бассейна) | 1 | 1 | 100 | 3 | 10 | – | – | 10 | – | – | зачет |
| | | 1 | 2 | 100 | 3 | 12 | – | – | 12 | – | – | экзамен |
| | | 2 | 3 | 100 | 3 | 10 | – | – | 10 | – | – | зачет |

## 1. СОДЕРЖАНИЕ УЧЕБНОГО МАТЕРИАЛА

1.1. ДЛЯ СПЕЦИАЛЬНОСТИ «ИНЖЕНЕРНЫЕ СЕТИ, ОБОРУДОВАНИЕ ЗДАНИЙ И СООРУЖЕНИЙ (ПРОФИЛИЗАЦИЯ – ТЕПЛОГАЗОСНАБЖЕНИЕ, ВЕНТИЛЯЦИЯ И ОХРАНА ВОЗДУШНОГО БАССЕЙНА)» (дневная форма получения высшего образования):

МОДУЛЬ 1. Социально-бытового и социокультурного общения.

ТЕМА 1.1. Новый этап в моей жизни:

Изучающее чтение: Студенческая жизнь – новый этап в моей жизни.

Ознакомительное чтение: Рабочий день студента.

Грамматика: местоимения: личные, притяжательные, возвратные, указательные.

ТЕМА 1.2. БрГТУ в системе высшего образования Республики Беларусь:

Изучающее чтение: БрГТУ в системе высшего образования Республики Беларусь.

Ознакомительное чтение: 1) Высшее образование в Великобритании. 2) Британские университеты.

Грамматика: глагол: спряжение глаголов to be, to have в Present, Past, Future Indefinite; оборот there + to be.

ТЕМА 1.3. Республика Беларусь в современном мире:

Изучающее чтение: Республика, в которой я живу.

Ознакомительное чтение: Мой родной город.

Грамматика: глагол: времена группы Indefinite (Present, Past, Future) действительного залога.

ТЕМА 1.4. Социально-политический портрет Великобритании:

Изучающее чтение: Что я знаю о стране изучаемого языка.

Ознакомительное чтение: 1) Соединенное Королевство. 2) Соединенные Штаты Америки.

Грамматика: глагол: времена группы Continuous (Present, Past, Future) действительного залога.

МОДУЛЬ 2. Профессионального общения.

ТЕМА 2.1. Моя специальность и ее значение для экономического развития Республики Беларусь:

Изучающее чтение: Профессия инженера.

Ознакомительное чтение: Будущее инженерной профессии.

Грамматика: глагол: времена группы Perfect (Present, Past, Future) действительного залога.

ТЕМА 2.2. Теплогазоснабжение:

Изучающее чтение: 1) Центральное отопление. 2) Электрическое отопление. 3) Газовое отопление. 4) Гидравлические и паровые системы. 5) Водяное отопление и горячее водоснабжение.

Ознакомительное чтение: 1) Радиатора. 2) Бойлеры. 3) Тепловые насосы. 4) Полы с подогревом. 5) Воздушное отопление.

Грамматика: глагол: страдательный залог.

ТЕМА 2.3. Вентиляция:

Изучающее чтение: 1) Вентиляция. 2) Типы вентиляции. 3) Круглогодичное кондиционирование, вентиляция, газоснабжение.

Ознакомительное чтение: 1) Воздухокондиционирование. 2) История воздухокондиционирования.

Грамматика: глагол: согласование времен.

ТЕМА 2.4. Охрана воздушного бассейна:

Изучающее чтение: 1) Проблемы окружающей среды. 2) Проблемы загрязнения воды и воздуха.

Ознакомительное чтение: 1) Экологические проблемы. 2) Проблемы окружающей среды. 3) Экологические проблемы больших городов. 4) Загрязнение атмосферы.

Грамматика: инфинитив, инфинитивные обороты, особенности перевода на русский язык; герундий, герундиальные конструкции, особенности перевода на русский язык; причастие I, II; особенности перевода на русский язык.

1.2. ДЛЯ СПЕЦИАЛЬНОСТИ «ИНЖЕНЕРНЫЕ СЕТИ, ОБОРУДОВАНИЕ

ЗДАНИЙ И СООРУЖЕНИЙ (ПРОФИЛИЗАЦИЯ – ВОДОСНАБЖЕНИЕ, ВОДООТВЕДЕНИЕ И ОХРАНА ВОДНЫХ РЕСУРСОВ)» (дневная форма получения высшего образования):

МОДУЛЬ 1. Социально-бытового и социокультурного общения.

ТЕМА 1.1. Новый этап в моей жизни:
Изучающее чтение: Студенческая жизнь – новый этап в моей жизни.
Ознакомительное чтение: 1) Рабочий день студента. 2) Мой выходной день.
Грамматика: имя существительное; артикль; местоимения.

ТЕМА 1.2. Республика Беларусь в современном мире:
Изучающее чтение: Республика, в которой я живу.
Ознакомительное чтение: Мой родной город.
Грамматика: глагол; времена действительного залога; страдательный залог.

ТЕМА 1.3. Социально-политический портрет Великобритании:
Изучающее чтение: Что я знаю о стране изучаемого языка.
Ознакомительное чтение: 1) Соединенное Королевство. 2) Соединенные Штаты Америки.
Грамматика: прямая и косвенная речь; согласование времен.

ТЕМА 1.4. БрГТУ в системе высшего образования Республики Беларусь:
Изучающее чтение: БрГТУ в системе высшего образования Республики Беларусь.
Ознакомительное чтение: 1) Высшее образование в Беларуси. 2) Высшее образование в Великобритании. 3) Британские университеты.
Грамматика: глагол: инфинитив; Герундий; причастие I; причастие II.

МОДУЛЬ 2. Профессионального общения.

ТЕМА 2.1. Вода как природный ресурс:
Изучающее чтение: 1) Вода. 2) Качество воды. 3) Грунтовая вода.
Ознакомительное чтение: 1) Круговорот воды. 2) Потребление воды.
Грамматика: модальные глаголы; сослагательное наклонение.

ТЕМА 2.2. Загрязнение воды:
Изучающее чтение: 1) Загрязнение воды. 2) Кислотный дождь. 3) Очистка воды.
Грамматика: имя прилагательное; наречие; степени сравнения.

ТЕМА 2.3. Водоснабжение и водоотведение:
Изучающее чтение: 1) Из истории водоснабжения. 2) Коммунально-бытовое водоснабжение. 3) Водоотведение.
Ознакомительное чтение: 1) История развития водоотведения.
Грамматика: глагол; местоимение; вводные it, there.

ТЕМА 2.4. Очистка сточных вод:

Изучающее чтение: 1) Обработка сточных вод. 2) Водоочистные сооружения. 3) Использование очищенной воды.

Грамматика: союзы.

ТЕМА 2.5. Моя будущая специальность и ее значение в экономическом развитии Республики Беларусь:

Изучающее чтение: 1) Инженерия. 2) Моя будущая профессия. 3) Будущее инженерной профессии.

Грамматика: порядок слов в предложении; числительное.

1.3. ДЛЯ СПЕЦИАЛЬНОСТИ «МЕЛИОРАЦИЯ И ВОДНОЕ ХОЗЯЙСТВО» (дневная форма получения высшего образования):

МОДУЛЬ 1. Социально-бытового и социокультурного общения.

ТЕМА 1.1. Новый этап в моей жизни:

Изучающее чтение: Студенческая жизнь – новый этап в моей жизни.

Ознакомительное чтение: 1) Рабочий день студента.

Грамматика: имя существительное; артикль; местоимения.

ТЕМА 1.2. БрГТУ в системе высшего образования Республики Беларусь:

Изучающее чтение: БрГТУ в системе высшего образования Республики Беларусь.

Ознакомительное чтение: 1) Высшее образование в Великобритании. 2) Британские университеты.

Грамматика: имя прилагательное, наречие, степени сравнения; имя числительное.

ТЕМА 1.3. Республика Беларусь в современном мире:

Изучающее чтение: Республика, в которой я живу.

Ознакомительное чтение: Мой родной город.

Грамматика: спряжение глаголов to be, to have в Present, Past, Future Indefinite; оборот there + to be.

ТЕМА 1.4. Социально-политический портрет Великобритании:

Изучающее чтение: Что я знаю о стране изучаемого языка.

Ознакомительное чтение: 1) Соединенное Королевство. 2) Соединенные Штаты Америки.

Грамматика: времена группы Indefinite, Continuous, Perfect и Perfect Continuous действительного залога.

МОДУЛЬ 2. Профессионального общения.

ТЕМА 2.1. Почва:

Изучающее чтение: 1) Почва. 2) Физические свойства почв.

Ознакомительное чтение: 1) Виды почв. 2) Химические свойства почв. 3) Геодезия.

Грамматика: времена группы Indefinite, Continuous и Perfect страдательного

залога; особенности перевода пассивных конструкций на русский язык.

ТЕМА 2.2. Источники воды. Гидротехнические сооружения:

Изучающее чтение: 1) Источники воды. 2) Запасы воды. 3) Накопление и распределение воды для орошения.

Ознакомительное чтение: 1) Вода. 2) Круговорот воды в природе и гидрологический цикл. 3) Из истории строительства плотин. 4) Виды плотин. Строительство арочных плотин. 5) Контрфорсная плотина. Строительство контрфорсных плотин. 6) Насыпи из грунта.

Грамматика: условные предложения I, II, III, смешанного типов.

ТЕМА 2.3. Орошение:

Изучающее чтение: 1) Орошение. 2) Системы орошения. 3) Методы орошения.

Ознакомительное чтение: 1) Автоматизация систем орошения.

Грамматика: модальные глаголы.

ТЕМА 2.4. Моя специальность и ее значение для экономического развития Республики Беларусь:

Изучающее чтение: Профессия инженера.

Ознакомительное чтение: Будущее инженерной профессии.

Грамматика: инфинитив; инфинитивные обороты; особенности перевода на русский язык.

ТЕМА 2.5. Осушение:

Изучающее чтение: Дренаж.

Ознакомительное чтение: 1) Древние строители каналов. 2) Интересные факты о каналах.

Грамматика: герундий; особенности перевода на русский язык.

ТЕМА 2.6. Строительные материалы для мелиоративного и водохозяйственного строительства:

Изучающее чтение: 1) Бетон. 2) Железобетон.

Ознакомительное чтение: 1) Свойства строительных материалов. 2) Из истории бетона. 3) Металлы и бетон.

Грамматика: причастие I, II; особенности перевода на русский язык.

ТЕМА 2.7. Проблемы экологии:

Изучающее чтение: 1) Экологические проблемы. 2) Чернобыльская катастрофа. 3) Загрязнение воздуха. 4) Загрязнение воды. 5) Экосистема торфяных болот (значение, угроза, защита).

Ознакомительное чтение: 1) Кислотные дожди. 2) Спасите планету. 3) Проблема охраны окружающей среды должна быть всемирной.

1.4. ДЛЯ СПЕЦИАЛЬНОСТИ «ИНЖЕНЕРНЫЕ СЕТИ, ОБОРУДОВАНИЕ ЗДАНИЙ И СООРУЖЕНИЙ (ПРОФИЛИЗАЦИЯ – ТЕПЛОГАЗОСНАБЖЕНИЕ, ВЕНТИЛЯЦИЯ И ОХРАНА ВОЗДУШНОГО БАССЕЙНА)» (заочная форма получения высшего образования и заочная форма получения высшего образования, интегрированного со средним специальным образованием):

МОДУЛЬ 1. Социально-бытового и социокультурного общения.

ТЕМА 1.1. БрГТУ в системе высшего образования Республики Беларусь:

Изучающее чтение: БрГТУ в системе высшего образования Республики Беларусь.

Ознакомительное чтение: 1) Высшее образование в Великобритании. 2) Британские университеты.

МОДУЛЬ 2. Профессионального общения.

ТЕМА 2.1. Теплогазоснабжение:

Изучающее чтение: 1) Отопление. 2) Вентиляция. 3) Кондиционирование воздуха.

Грамматический материал: оборот there + to be; спряжение глаголов to be, to have в Present, Past, Future Indefinite; времена группы Indefinite действительного и страдательного залога изъявительного наклонения; особенности перевода пассивных конструкций на русский язык.

ТЕМА 2.2. Централизованное теплоснабжение:

Изучающее чтение: Централизованное теплоснабжение.

Грамматический материал: времена группы Continuous (Present, Past, Future) действительного и страдательного залога изъявительного наклонения.

ТЕМА 2.3. Горячее водоснабжение:

Изучающее чтение: Горячее водоснабжение.

Грамматический материал: времена группы Perfect (Present, Past, Future) действительного и страдательного залога изъявительного наклонения.

ТЕМА 2.4. Моя специальность и ее значение для экономического развития Республики Беларусь:

Изучающее чтение: Профессия инженера.

Ознакомительное чтение: Будущее инженерной профессии.

ТЕМА 2.5. Вентиляция:

Изучающее чтение: 1) Вентиляция. 2) Виды вентиляции.

ТЕМА 2.6. Газоснабжение:

Изучающее чтение: 1) Газоснабжение. 2) Газовое отопление. 3) Гидравлические и паровые системы.

ТЕМА 2.7. Охрана воздушного бассейна:

Изучающее чтение: 1) Проблемы окружающей среды. 2) Проблемы загрязнения воды и воздуха.

Ознакомительное чтение: 1) Экологические проблемы. 2) Проблемы окружающей среды. 3) Экологические проблемы больших городов. 4) Загрязнение атмосферы.

2.1. УЧЕБНО-МЕТОДИЧЕСКАЯ КАРТА УЧЕБНОЙ ДИСЦИПЛИНЫ
для дневной формы получения высшего образования для специальности:
7-07-0732-02 ИНЖЕНЕРНЫЕ СЕТИ, ОБОРУДОВАНИЕ ЗДАНИЙ И СООРУЖЕНИЙ
(ПРОФИЛИЗАЦИЯ – ТЕПЛОГАЗОСНАБЖЕНИЕ, ВЕНТИЛЯЦИЯ И ОХРАНА ВОЗДУШНОГО БАССЕЙНА)

| Номер раздела, темы | Название раздела, темы | Количество аудиторных часов | | | | Количество часов самост. работы | Форма контроля знаний |
|---|---|---|---|---|---|---|---|
| | | Лекции | Лабораторные занятия | Практические занятия | Семинарские занятия | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | 1-й семестр | | | | | | |
| 1.1 | Новый этап в моей жизни:<br>Изучающее чтение: Студенческая жизнь – новый этап в моей жизни.<br>Ознакомительное чтение: Рабочий день студента.<br>Грамматика: местоимения: личные, притяжательные, возвратные, указательные. | | | 8 | | 14 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 1.2 | БрГТУ в системе высшего образования Республики Беларусь:<br>Изучающее чтение: БрГТУ в системе высшего образования Республики Беларусь.<br>Ознакомительное чтение:<br>1) Высшее образование в Великобритании.<br>2) Британские университеты.<br>Грамматика: глагол: спряжение глаголов to be, to have в Present, Past, Future Indefinite; оборот there + to be. | | | 16 | | 18 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 1.3 | Республика Беларусь в современном мире:<br>Изучающее чтение: Республика, в которой я живу.<br>Ознакомительное чтение: Мой родной город.<br>Грамматика: глагол: времена группы Indefinite (Present, Past, Future) действительного залога. | | | 10 | | 16 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 1.4 | Социально-политический портрет Великобритании:<br>Изучающее чтение: Что я знаю о стране изучаемого языка.<br>Ознакомительное чте- | | | 14 | | 14 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы |

| Номер раздела, темы | Название раздела, темы | Количество аудиторных часов | | | | Количество часов самост. работы | Форма контроля знаний |
|---|---|---|---|---|---|---|---|
| | | Лекции | Лабораторные занятия | Практические занятия | Семинарские занятия | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | ние: 1) Соединенное Королевство. 2) Соединенные Штаты Америки. Грамматика: глагол: времена группы Continuous (Present, Past, Future) действительного залога. | | | | | | на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| | 2-й семестр | | | | | | |
| 2.1 | Моя специальность и ее значение для экономического развития Республики Беларусь: Изучающее чтение: Профессия инженера. Ознакомительное чтение: Будущее инженерной профессии. Грамматика: глагол: времена группы Perfect (Present, Past, Future) действительного залога. | | | 20 | | 30 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 2.2 | Теплогазоснабжение: Изучающее чтение: 1) Центральное отопление. 2) Электрическое отопление. 3) Газовое отопление. 4) Гидравлические и паровые системы. 5) Водяное отопление и горячее водоснабжение. Ознакомительное чтение: 1) Радиатора. 2) Бойлеры. 3) Тепловые насосы. 4) Полы с подогревом. 5) Воздушное отопление. Грамматика: глагол: страдательный залог. | | | 28 | | 32 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| | 3-й семестр | | | | | | |
| 2.3 | Вентиляция: Изучающее чтение: 1) Вентиляция. 2) Типы вентиляции. 3) Круглогодичное кондиционирование, вентиляция, газоснабжение. Ознакомительное чтение: 1) Воздухокондиционирование. 2) История воздухокондиционирования. Грамматика: глагол: согласование времен. | | | 24 | | 28 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 2.4 | Охрана воздушного бассейна: Изучающее чтение: 1) Проблемы окружающей среды. 2) Проблемы загрязнения воды и воздуха. Ознакомительное чтение: 1) Экологические проблемы. | | | 24 | | 34 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, рефе- |

| Номер раздела, темы | Название раздела, темы | Количество аудиторных часов | | | | Количество часов самост. работы | Форма контроля знаний |
|---|---|---|---|---|---|---|---|
| | | Лекции | Лабораторные занятия | Практические занятия | Семинарские занятия | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | 2) Проблемы окружающей среды. 3) Экологические проблемы больших городов. 4) Загрязнение атмосферы. Грамматика: инфинитив, инфинитивные обороты, особенности перевода на русский язык; герундий, герундиальные конструкции, особенности перевода на русский язык; причастие I, II; особенности перевода на русский язык. | | | | | | рирование/ составление аннотаций). Беседа по теме. |

## 2.2. УЧЕБНО-МЕТОДИЧЕСКАЯ КАРТА УЧЕБНОЙ ДИСЦИПЛИНЫ

для дневной формы получения высшего образования для специальности: 7-07-0732-02 ИНЖЕНЕРНЫЕ СЕТИ, ОБОРУДОВАНИЕ ЗДАНИЙ И СООРУЖЕНИЙ (ПРОФИЛИЗАЦИЯ – ВОДОСНАБЖЕНИЕ, ВОДООТВЕДЕНИЕ И ОХРАНА ВОДНЫХ РЕСУРСОВ)

| Номер раздела, темы | Название раздела, темы | Количество аудиторных часов | | | | Количество часов самост. работы | Форма контроля знаний |
|---|---|---|---|---|---|---|---|
| | | Лекции | Лабораторные занятия | Практические занятия | Семинарские занятия | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | 1-й семестр | | | | | | |
| 1.1 | Новый этап в моей жизни: Изучающее чтение: Студенческая жизнь – новый этап в моей жизни. Ознакомительное чтение: 1) Рабочий день студента. 2) Мой выходной день. Грамматика: имя существительное; артикль; местоимения. | | | 8 | | 14 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 1.2 | Республика Беларусь в современном мире: Изучающее чтение: Республика, в которой я живу. Ознакомительное чтение: Мой родной город. Грамматика: глагол; времена действи- | | | 16 | | 18 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ со- |

| Номер раздела, темы | Название раздела, темы | Количество аудиторных часов | | | | Количество часов самост. работы | Форма контроля знаний |
|---|---|---|---|---|---|---|---|
| | | Лекции | Лабораторные занятия | Практические занятия | Семинарские занятия | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | тельного залога; страдательный залог. | | | | | | ставление аннотаций). Беседа по теме. |
| 1.3 | Социально-политический портрет Великобритании:<br>Изучающее чтение: Что я знаю о стране изучаемого языка.<br>Ознакомительное чтение: 1) Соединенное Королевство. 2) Соединенные Штаты Америки.<br>Грамматика: прямая и косвенная речь; согласование времен. | | | 10 | | 16 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 1.4 | БрГТУ в системе высшего образования Республики Беларусь:<br>Изучающее чтение: БрГТУ в системе высшего образования Республики Беларусь.<br>Ознакомительное чтение: 1) Высшее образование в Беларуси. 2) Высшее образование в Великобритании. 3) Британские университеты.<br>Грамматика: глагол: инфинитив; Герундий; причастие I; причастие II. | | | 14 | | 14 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| | 2-й семестр | | | | | | |
| 2.1 | Вода как природный ресурс:<br>Изучающее чтение: 1) Вода. 2) Качество воды. 3) Грунтовая вода.<br>Ознакомительное чтение: 1) Круговорот воды. 2) Потребление воды.<br>Грамматика: модальные глаголы; сослагательное наклонение. | | | 20 | | 30 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 2.2 | Загрязнение воды:<br>Изучающее чтение: 1) Загрязнение воды. 2) Кислотный дождь. 3) Очистка воды.<br>Грамматика: имя прилагательное; наречие; степени сравнения. | | | 28 | | 32 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| | семестр | | | | | | |
| 2.3 | Водоснабжение и водоотведение: | | | 16 | | 22 | Фронтальный/ ин- |

| Номер раздела, темы | Название раздела, темы | Количество аудиторных часов | | | | Количество часов самост. работы | Форма контроля знаний |
|---|---|---|---|---|---|---|---|
| | | Лекции | Лабораторные занятия | Практические занятия | Семинарские занятия | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | Изучающее чтение: 1) Из истории водоснабжения. 2) Коммунально-бытовое водоснабжение. 3) Водоотведение.<br>Ознакомительное чтение: 1) История развития водоотведения.<br>Грамматика: глагол; местоимение; вводные it, there. | | | | | | дивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 2.4 | Очистка сточных вод:<br>Изучающее чтение: 1) Обработка сточных вод. 2) Водоочистные сооружения. 3) Использование очищенной воды.<br>Грамматика: союзы. | | | 16 | | 20 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 2.5 | Моя будущая специальность и ее значение в экономическом развитии Республики Беларусь:<br>Изучающее чтение: 1) Инженерия. 2) Моя будущая профессия. 3) Будущее инженерной профессии.<br>Грамматика: порядок слов в предложении; числительное. | | | 16 | | 20 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |

## 2.3. УЧЕБНО-МЕТОДИЧЕСКАЯ КАРТА УЧЕБНОЙ ДИСЦИПЛИНЫ для дневной формы получения высшего образования для специальности: 6-05-0811-03 МЕЛИОРАЦИЯ И ВОДНОЕ ХОЗЯЙСТВО

| Номер раздела, темы | Название раздела, темы | Количество аудиторных часов | | | | Количество часов самост. работы | Форма контроля знаний |
|---|---|---|---|---|---|---|---|
| | | Лекции | Лабораторные занятия | Практические занятия | Семинарские занятия | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | 1-й семестр | | | | | | |
| 1.1 | Новый этап в моей жизни: | | | 6 | | 8 | Фронтальный/ ин- |

| Номер раздела, темы | Название раздела, темы | Количество аудиторных часов | | | | Количество часов самост. работы | Форма контроля знаний |
|---|---|---|---|---|---|---|---|
| | | Лекции | Лабораторные занятия | Практические занятия | Семинарские занятия | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | Изучающее чтение: Студенческая жизнь – новый этап в моей жизни.<br>Ознакомительное чтение: 1) Рабочий день студента.<br>Грамматика: имя существительное; артикль; местоимения. | | | | | | дивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 1.2 | БрГТУ в системе высшего образования Республики Беларусь:<br>Изучающее чтение: БрГТУ в системе высшего образования Республики Беларусь.<br>Ознакомительное чтение: 1) Высшее образование в Великобритании. 2) Британские университеты.<br>Грамматика: имя прилагательное, наречие, степени сравнения; имя числительное. | | | 8 | | 10 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 1.3 | Республика Беларусь в современном мире:<br>Изучающее чтение: Республика, в которой я живу.<br>Ознакомительное чтение: Мой родной город.<br>Грамматика: спряжение глаголов to be, to have в Present, Past, Future Indefinite; оборот there + to be. | | | 8 | | 10 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 1.4 | Социально-политический портрет Великобритании:<br>Изучающее чтение: Что я знаю о стране изучаемого языка.<br>Ознакомительное чтение: 1) Соединенное Королевство. 2) Соединенные Штаты Америки.<br>Грамматика: времена группы Indefinite, Continuous, Perfect и Perfect Continuous действительного залога. | | | 8 | | 10 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 2.1 | Почва:<br>Изучающее чтение: 1) Почва. 2) Физические свойства почв.<br>Ознакомительное чтение: 1) Виды почв. 2) Химические свойства почв. 3) Геодезия.<br>Грамматика: времена группы Indefinite, | | | 16 | | 8 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ со- |

| Номер раздела, темы | Название раздела, темы | Количество аудиторных часов | | | | Количество часов самост. работы | Форма контроля знаний |
|---|---|---|---|---|---|---|---|
| | | Лекции | Лабораторные занятия | Практические занятия | Семинарские занятия | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | Continuous и Perfect страдательного залога; особенности перевода пассивных конструкций на русский язык. | | | | | | ставление аннотаций). Беседа по теме. |
| 2.2 | Источники воды. Гидротехнические сооружения:<br>Изучающее чтение: 1) Источники воды. 2) Запасы воды. 3) Накопление и распределение воды для орошения.<br>Ознакомительное чтение: 1) Вода. 2) Круговорот воды в природе и гидрологический цикл. 3) Из истории строительства плотин. 4) Виды плотин. Строительство арочных плотин. 5) Контрфорсная плотина. Строительство контрфорсных плотин. 6) Насыпи из грунта.<br>Грамматика: условные предложения I, II, III, смешанного типов. | | | 22 | | 10 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| | 2-й семестр | | | | | | |
| 2.3 | Орошение:<br>Изучающее чтение: 1) Орошение. 2) Системы орошения. 3) Методы орошения.<br>Ознакомительное чтение: 1) Автоматизация систем орошения.<br>Грамматика: модальные глаголы. | | | 18 | | 12 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 2.4 | Моя специальность и ее значение для экономического развития Республики Беларусь:<br>Изучающее чтение: Профессия инженера.<br>Ознакомительное чтение: Будущее инженерной профессии.<br>Грамматика: инфинитив; инфинитивные обороты; особенности перевода на русский язык. | | | 8 | | 12 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 2.5 | Осушение:<br>Изучающее чтение: Дренаж.<br>Ознакомительное чтение: 1) Древние строители каналов. 2) Интересные факты о каналах.<br>Грамматика: герундий; особенности перевода на русский язык. | | | 12 | | 10 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннота- |

| Номер раздела, темы | Название раздела, темы | Количество аудиторных часов | | | | Количество часов самост. работы | Форма контроля знаний |
|---|---|---|---|---|---|---|---|
| | | Лекции | Лабораторные занятия | Практические занятия | Семинарские занятия | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | | | | | | | ций). Беседа по теме. |
| 2.6 | Строительные материалы для мелиоративного и водохозяйственного строительства:<br>Изучающее чтение: 1) Бетон. 2) Железобетон.<br>Ознакомительное чтение: 1) Свойства строительных материалов. 2) Из истории бетона. 3) Металлы и бетон.<br>Грамматика: причастие I, II; особенности перевода на русский язык. | | | 12 | | 10 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 2.7 | Проблемы экологии:<br>Изучающее чтение: 1) Экологические проблемы. 2) Чернобыльская катастрофа. 3) Загрязнение воздуха. 4) Загрязнение воды. 5) Экосистема торфяных болот (значение, угроза, защита).<br>Ознакомительное чтение: 1) Кислотные дожди. 2) Спасите планету. 3) Проблема охраны окружающей среды должна быть всемирной. | | | 18 | | 12 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |

## 2.4. УЧЕБНО-МЕТОДИЧЕСКАЯ КАРТА УЧЕБНОЙ ДИСЦИПЛИНЫ

для заочной формы получения высшего образования и
для заочной формы получения высшего образования, интегрированного со средним специальным образованием, для специальности:
7-07-0732-02 ИНЖЕНЕРНЫЕ СЕТИ, ОБОРУДОВАНИЕ ЗДАНИЙ И СООРУЖЕНИЙ (ПРОФИЛИЗАЦИЯ – ТЕПЛОГАЗОСНАБЖЕНИЕ, ВЕНТИЛЯЦИЯ И ОХРАНА ВОЗДУШНОГО БАССЕЙНА)

| Номер раздела, темы | Название раздела, темы | Количество аудиторных часов | | | | Количество часов самост. Работы | Форма контроля знаний |
|---|---|---|---|---|---|---|---|
| | | Лекции | Лабораторные занятия | Практические занятия | Семинарские занятия | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | 1-й семестр | | | | | | |
| 2.1 | Теплогазоснабжение:<br>Изучающее чтение: 1) Отопление. | | | 4 | | 26 | Фронтальный/ индивидуальный |

| Номер раздела, темы | Название раздела, темы | Количество аудиторных часов | | | | Количество часов самост. Работы | Форма контроля знаний |
|---|---|---|---|---|---|---|---|
| | | Лекции | Лабораторные занятия | Практические занятия | Семинарские занятия | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | 2) Вентиляция. 3) Кондиционирование воздуха.<br>Грамматический материал: оборот there + to be; спряжение глаголов to be, to have в Present, Past, Future Indefinite; времена группы Indefinite действительного и страдательного залога изъявительного наклонения; особенности перевода пассивных конструкций на русский язык. | | | | | | опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 2.2 | Централизованное теплоснабжение:<br>Изучающее чтение: Централизованное теплоснабжение.<br>Грамматический материал: времена группы Continuous (Present, Past, Future) действительного и страдательного залога изъявительного наклонения. | | | 4 | | 28 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 2.3 | Горячее водоснабжение:<br>Изучающее чтение: Горячее водоснабжение.<br>Грамматический материал: времена группы Perfect (Present, Past, Future) действительного и страдательного залога изъявительного наклонения. | | | 2 | | 36 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| | 2-й семестр | | | | | | |
| 1.1 | БрГТУ в системе высшего образования Республики Беларусь:<br>Изучающее чтение: БрГТУ в системе высшего образования Республики Беларусь.<br>Ознакомительное чтение: 1) Высшее образование в Великобритании. 2) Британские университеты. | | | 4 | | 26 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 2.4 | Моя специальность и ее значение для экономического развития Республики Беларусь:<br>Изучающее чтение: Профессия инженера.<br>Ознакомительное чтение: Будущее инженерной профессии. | | | 4 | | 36 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа |

| Номер раздела, темы | Название раздела, темы | Количество аудиторных часов | | | | Количество часов самост. Работы | Форма контроля знаний |
|---|---|---|---|---|---|---|---|
| | | Лекции | Лабораторные занятия | Практические занятия | Семинарские занятия | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | | | | | | | по теме. |
| 2.5 | Вентиляция:<br>Изучающее чтение: 1) Вентиляция. 2) Виды вентиляции. | | | 4 | | 26 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| | 3-й семестр | | | | | | |
| 2.6 | Газоснабжение:<br>Изучающее чтение: 1) Газоснабжение. 2) Газовое отопление. 3) Гидравлические и паровые системы. | | | 4 | | 45 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |
| 2.7 | Охрана воздушного бассейна:<br>Изучающее чтение: 1) Проблемы окружающей среды. 2) Проблемы загрязнения воды и воздуха.<br>Ознакомительное чтение: 1) Экологические проблемы. 2) Проблемы окружающей среды. 3) Экологические проблемы больших городов. 4) Загрязнение атмосферы. | | | 6 | | 45 | Фронтальный/ индивидуальный опрос. Выполнение упражнений (перевод, ответы на вопросы, реферирование/ составление аннотаций). Беседа по теме. |

## 3. ИНФОРМАЦИОННО-МЕТОДИЧЕСКАЯ ЧАСТЬ

3.1. Перечень литературы (учебной, учебно-методической, научной, нормативной, др.).

### 3.1.1 ДЛЯ СПЕЦИАЛЬНОСТИ «ИНЖЕНЕРНЫЕ СЕТИ, ОБОРУДОВАНИЕ ЗДАНИЙ И СООРУЖЕНИЙ (ПРОФИЛИЗАЦИЯ – ТЕПЛОГАЗОСНАБЖЕНИЕ, ВЕНТИЛЯЦИЯ И ОХРАНА ВОЗДУШНОГО БАССЕЙНА)»:

Основная:

1) Кабешева, Е. В. Английский язык = English / Е. В. Кабешева, Е. М. Гайкова, М. И. Чигринец. – Минск : Вышэйшая школа, 2014. – 175 с.

2) Пузенко, И. Н. Английский язык. Профессиональное общение = Professional communication course : учеб. пособие / И. Н. Пузенко, И. М. Веренич, Н. В. Вербицкая. – Минск : Изд-во Гревцова, 2014. – 272 с.

3) Резько, П. Н. Modern Communication : учебно-методическое пособие по развитию коммуникативных навыков для студентов неязыковых вузов экономических и технических специальностей / П. Н. Резько, Н. А. Боровикова ; Министерство образования Республики Беларусь, Брестский государственный технический университет, Кафедра иностранных языков. – Брест : БрГТУ, 2020. – 105 с.

4) Шпудейко, Л. Н. Иностранный язык (профессиональная лексика) (английский язык): сборник текстов для самостоятельной аудиторной работы студентов специальности 1-33 01 07 Природоохранная деятельность / Л. Н. Шпудейко, И. И. Гайдук, Н. А. Боровикова — Брест: Издательство БрГТУ, 2023. – 70 с.

Дополнительная:

1) Агабекян, И. П. Английский для технических вузов / И. П. Агабекян, П. И. Коваленко. – Ростов-на-дону: Феникс, 2002.

2) Голицынский, Ю. Б. Упражнения по грамматике английского языка / Ю. Б. Голицынский. – Санкт- Петербург: КАРО, 2006.

3) Дорощук, Т. А. Пособие по английскому языку для студентов специальности «Водоснабжение, водоотведение и охрана водных ресурсов» : учеб. пособие / Т. А. Дорошук, Н. В. Кистень, М. В. Борушко, Ю. А. Манец ; УО «Брестский государственный технический университет». – Брест, 2006.

4) Дорощук, Т. А. Практикум по изучающему чтению на английском языке : учеб. пособие / Т. А. Дорощук, Е. П. Черепенко, Л. Н. Шпудейко ; УО «Брестский государственный технический университет». – Брест, 2006.

5) Дубровская, С. Г. Английский для технических вузов / С. Г. Дубровская, Т. А. Дубина. – М.: АСВ, 2011. – 369 с.

6) Новик, Д .В Методические рекомендации по развитию навыков устной речи по английскому языку для студентов технических специальностей : учеб. пособие / Д. В. Новик, И. И. Гайдук ; УО «Брестский государственный технический университет». – Брест, 2010.

7) Орловская, И. В. Учебник английского языка для студентов технических университетов и вузов / И. В. Орловская, Л. С. Самсонова, А. И. Скубриева. – М: изд-во МГТУ им. Н.Э.Баумана, 2015. – 447 с.

8) Рахуба, В. И. Практикум по грамматике английского языка : учеб. пособие / В. И. Рахуба ; УО «Брестский государственный технический университет». – Брест,

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3.2. Перечень средств диагностики результатов учебной деятельности.

Данный модуль является интегральным и обеспечивает промежуточный и итоговый контроль усвоения содержания программы. Он представляет собой обобщение и систематизацию пройденного учебного материала по всем аспектам языка и видам речевой деятельности.

ПРОМЕЖУТОЧНЫЙ КОНТРОЛЬ осуществляется:

1) по устным темам – в форме монологического высказывания, диалогов, беседы с преподавателем;

2) по текстам – в форме разработанных комплексных заданий, составления аннотаций и рефератов, выборочного письменного перевода;

3) по грамматике – в виде выполнения грамматических упражнений по изученным темам.

ИТОГОВЫЙ КОНТРОЛЬ (дневная форма получения высшего образования):

Зачет выставляется по результатам выполнения программы текущего семестра: выполнение программы практических аудиторных занятий.

К экзамену допускаются студенты, выполнившие программу практических аудиторных занятий.

Структура экзамена:

1) чтение и письменный перевод оригинального профессионально-ориентированного текста с иностранного (английского) языка на родной со словарём. Объём – 1300 печатных знаков. Время выполнения – 45 минут.

2) Реферирование аутентичного или частично адаптированного научно-популярного текста, беседа на иностранном языке по содержанию текста. Объём текста – 1500 печатных знаков. Время подготовки – до 15 минут.

3) Подготовленное высказывание по одной из изученных устных тем и неподготовленная беседа с преподавателем в рамках данной устной темы.

Устные темы для подготовленного высказывания:

1) Новый этап в моей жизни.

2) БрГТУ в системе высшего образования Республики Беларусь.

3) Республика Беларусь в современном мире.

4) Социально-политический портрет страны изучаемого языка.

5) Моя специальность и её значение в экономическом развитии Республики Беларусь.

Оценка учебных достижений студентов на экзамене по иностранному языку производится по 10–балльной шкале.

ИТОГОВЫЙ КОНТРОЛЬ (заочная форма получения высшего образования и заочная форма получения высшего образования, интегрированного со средним специальным образованием):

Зачет выставляется по результатам выполнения программы текущего семестра: выполнение программы практических аудиторных занятий; сдача текстов профессиональной направленности по внеаудиторному чтению объемом 7,5 тыс. печатных знаков.

К экзамену допускаются студенты, выполнившие программу практических аудиторных занятий и сдавшие тексты по специальности объемом 7,5 тыс. печатных знаков по внеаудиторному чтению.

Структура экзамена:

1) Прочитать фонетически правильно отрывок текста по специальности.

2) С помощью словаря письменно перевести на родной язык текст по специальности объемом 1100-1200 печатных знаков. Время подготовки – 45 минут.

3) Прочитать текст общенаучной тематики объемом 900-1000 печатных знаков и передать его содержание на иностранном или русском языке. Время подготовки – 20 минут.

Оценка учебных достижений студентов на экзамене по иностранному языку производится по 10-балльной шкале.

КРИТЕРИИ ОЦЕНКИ ОТВЕТОВ СТУДЕНТОВ НА ЭКЗАМЕНЕ ПО ИНОСТРАННОМУ ЯЗЫКУ:

1) Письменный перевод текста по специальности:

Баллы:

10 – полный, своевременный, безошибочный, стилистически верный перевод.

9 – полный, своевременный, безошибочный перевод с 1-2 стилистическими погрешностями, не ведущими к искажению смысла.

8 – полный, своевременный перевод с 1-2 лексико-грамматическими ошибками, не ведущими к искажению смысла.

7 – полный, своевременный перевод с 3-4 лексико-грамматическими ошибками, не ведущими к искажению смысла.

6 – полный, своевременный перевод с 5-6 лексико-грамматическими ошибками, не ведущими к искажению смысла.

5 – неполный перевод текста (80%) с 7-8 лексико-грамматическими ошибками.

4 – неполный перевод текста (70%) с 9-10 лексико-грамматическими ошибками к.

3 – неполный перевод текста (60%) с 11-12 лексико-грамматическими ошибками.

2 – неполный перевод текста (50%) с большим количеством лексико-грамматических ошибок.

1 – перевод сделан на уровне отдельных слов и словосочетаний.

2) Передача содержания общенаучного текста на иностранном языке:

Баллы:

10 – полное понимание содержания текста с передачей всех деталей смысловых связей в виде логически четко построенного сообщения.

9 – полное понимание содержания текста с передачей всех деталей смысловых связей в виде недостаточно логически оформленного сообщения.

8 – передача содержания текста с недостаточной полнотой.

7 – передача содержания текста, содержащая 1-2 смысловые неточности.

6 – передача содержания текста, содержащая 3-4 смысловые неточности.

5 – ответ, отражающий содержание текста при наличии пропусков информации (не более 20 %).

4 – ответ, отражающий содержание текста при наличии пропусков информации (не более 30 %).

3 – понимание текста в общих чертах (60 %).

2 – фрагментарное понимание содержания текста и неспособность изложить основную идею.

1 – полное непонимание текста.

3) Беседа по изученной устной тематике:

Баллы:

10 – логически построенный, четкий, грамматически правильно оформленный, содержащий разнообразный набор лексики ответ (не менее 25 фраз). Допускаются 1-2 ошибки с самокоррекцией.

9 – логически построенный, четкий, грамматически правильно оформленный, содержащий разнообразный набор лексики ответ (20-25 фраз). Допускаются 2-3 ошибки с самокоррекцией.

8 – высказывания по теме логичны, аргументированы и построены на основе изученного учебного материала (18-20 фраз). Допускаются 3-4 лексико-грамматические ошибки.

7 – речь достаточно разнообразна. Высказывания логичны, однако их построение затрудняется иногда выбором необходимых лексико-грамматических конструкций (не менее 15 фраз). Допускаются 4-5 лексико-грамматические ошибки.

6 – ответ недостаточно полный и аргументированный (10-15 фраз). Допускается 5-6 лексико-грамматических ошибок.

5 – ответ недостаточно полный, требующий дополнительных вопросов со стороны экзаменатора по изученному материалу (8-10 фраз). Допускается 5-6 лексико-грамматических ошибок.

4 – речь на уровне механического высказывания изученного материала по теме (7-8 фраз). Допускается 6-7 лексико-грамматических ошибок.

3 – речь на уровне механического высказывания отдельных предложений. Многочисленные ошибки, затрудняющие понимание смысла высказывания.

2 – речь на уровне отдельных слов и словосочетаний.

1 – неумение и неспособность строить высказывания.

3.3. Методические рекомендации по организации и выполнению самостоятельной работы обучающихся по учебной дисциплине.

Самостоятельная внеаудиторная неуправляемая работа студентов включает следующие виды работ:

1) подготовка домашних заданий (выполнение грамматических упражнений, перевод текстов для изучающего и ознакомительного чтения);

2) использование интернет-сайтов для поиска учебной информации;

3) самостоятельное изучение общенаучной и терминологической лексики;

4) самостоятельное изучение тем, включенных в модуль социально-бытового и социокультурного общения (для заочной формы получения высшего образования и заочной форма получения высшего образования, интегрированного со средним специальным образованием);

5) подготовка докладов на научно-практические конференции;

6) подготовка к зачету, экзамену.

3.3.1. ДЛЯ СПЕЦИАЛЬНОСТИ «ИНЖЕНЕРНЫЕ СЕТИ, ОБОРУДОВАНИЕ ЗДАНИЙ И СООРУЖЕНИЙ (ПРОФИЛИЗАЦИЯ – ТЕПЛОГАЗОСНАБЖЕНИЕ, ВЕНТИЛЯЦИЯ И ОХРАНА ВОЗДУШНОГО БАССЕЙНА)» (дневная форма получения высшего образования)

Самостоятельная работа студентов без контроля преподавателя осуществляется в объеме 186 часов, из них в 1 семестре – 62 ч, во 2 семестре – 62 ч, в 3 семестре – 62 ч.

Самостоятельная работа студентов в 1 семестре включает следующие виды работ:

1. Подготовка текстов по специальности для внеаудиторного дополнительного чтения (изучающее, ознакомительное и просмотровое чтение) объемом 7,5 тыс. печатных знаков.

2. Использование интернет-сайтов для поиска текстов по внеаудиторному чтению.

3. Самостоятельное изучение общенаучной и терминологической лексики.

4. Самостоятельное изучение следующих тем по грамматике:

– Имя существительное: образование множественного числа и притяжательного падежа существительных.

– Существительное в функции определения и его перевод на русский язык.

– Местоимение one как заменитель существительного.

– Артикль: определенный и неопределенный. Основные случаи употребления артиклей. Отсутствие артикля.

– Числительные: простые, производные, сложные, количественные, порядковые и дробные. Синтаксические функции числительных.

– Глагол: времена группы Perfect Continuous (Present, Past, Future) действительного залога изъявительного наклонения.

– Модальные глаголы и их эквиваленты.

– Предлоги места, времени, направления.

– Предлоги, совпадающие по форме с наречиями.

– Простое распространенное предложение.

– Прямой и обратный порядок слов в простом распространенном предложении.

– Пунктуация простого предложения.

– Основные случаи словообразования.

5. Подготовка к зачету.

Самостоятельная работа студентов во 2 семестре включает следующие виды работ:

1. Подготовка текстов по специальности для внеаудиторного дополнительного чтения (изучающее, ознакомительное и просмотровое чтение) объемом 7,5 тыс. печатных знаков.

2. Использование интернет-сайтов для поиска текстов по внеаудиторному чтению.

3. Самостоятельное изучение общенаучной и терминологической лексики.

4. Самостоятельное изучение следующих тем по грамматике:

– Отглагольное существительное.

– Союз. Сочинительные и подчинительные союзы.

– Сложное предложение.

– Типы придаточных предложений.

– Союзное и бессоюзное подчинение в придаточных предложениях.

– Пунктуация сложносочиненных и сложноподчиненных предложений.

– Вводные слова и вводные предложения.

– Интернациональные слова.

5. Подготовка к зачету.

Самостоятельная работа студентов в 3 семестре включает следующие виды работ:

1. Подготовка домашних заданий (выполнение грамматических упражнений, перевод текстов для изучающего и ознакомительного чтения, самостоятельное изучение общенаучной и терминологической лексики).

2. Самостоятельное изучение следующих тем по грамматике:

– Глагол: времена группы Perfect Continuous (Present, Past, Future) действительного залога

– Неличные формы глагола: Инфинитив. Простые и сложные формы инфинитива. Объектный и субъектный инфинитивный обороты.

– Неличные формы глагола: Герундий. Простые и сложные формы герундия. Синтаксические функции герундия в предложении. Герундиальные конструкции. Особенности перевода герундия на русский язык.

– Неличные формы глагола: Причастие I, II. Простые и сложные формы при-

частия. Независимый причастный оборот.

3. Подготовка к экзамену.

Список литературы для самостоятельной работы:

1) Резько, П. Н. Modern Communication : учебно-методическое пособие по развитию коммуникативных навыков для студентов неязыковых вузов экономических и технических специальностей / П. Н. Резько, Н. А. Боровикова ; Министерство образования Республики Беларусь, Брестский государственный технический университет, Кафедра иностранных языков. – Брест : БрГТУ, 2020. – 105 с.

2) Шпудейко, Л. Н., Гайдук, И. И. Методические указания для самостоятельной аудиторной работы для студентов специальности 1-70 04 02 «Теплогазоснабжение, вентиляция и охрана воздушного бассейна. – Брест.2012. – ч.1 – 47с.

3) Шпудейко, Л. Н., Гайдук, И. И. Методические указания для самостоятельной аудиторной работы для студентов специальности 1-70 04 02 «Теплогазоснабжение, вентиляция и охрана воздушного бассейна.- Брест.2012.-ч.2-49с.

4) Хведченя, Л. В. Грамматика английского языка / Л. В. Хведченя. – Минск: Издательство Гревцова, 2011.

3.3.2. ДЛЯ СПЕЦИАЛЬНОСТИ «ИНЖЕНЕРНЫЕ СЕТИ, ОБОРУДОВАНИЕ ЗДАНИЙ И СООРУЖЕНИЙ (ПРОФИЛИЗАЦИЯ – ВОДОСНАБЖЕНИЕ, ВОДООТВЕДЕНИЕ И ОХРАНА ВОДНЫХ РЕСУРСОВ)» (дневная форма получения высшего образования):

Самостоятельная работа студентов без контроля преподавателя осуществляется в объеме 186 часов, из них в 1 семестре – 62 часа, во 2 семестре – 62 часа, в 3 семестре – 62 часа.

Самостоятельная работа студентов в 1 семестре включает следующие виды работ:

1. Подготовка текстов по специальности для внеаудиторного дополнительного чтения (изучающее, ознакомительное и просмотровое чтение) объемом 7,5 тыс. печатных знаков.

2. Использование интернет-сайтов для поиска текстов по внеаудиторному чтению.

3. Самостоятельное изучение общенаучной и терминологической лексики.

4. Самостоятельное изучение следующих тем по грамматике:

– Имя существительное: образование множественного числа и притяжательного падежа существительных.

– Существительное в функции определения и его перевод на русский язык.

– Местоимение one как заменитель существительного.

– Артикль: определенный и неопределенный. Основные случаи употребления артиклей. Отсутствие артикля.

– Числительные: простые, производные, сложные, количественные, порядковые и дробные. Синтаксические функции числительных.

– Глагол: времена группы Perfect Continuous (Present, Past, Future) действительного залога изъявительного наклонения.

– Модальные глаголы и их эквиваленты.

– Предлоги места, времени, направления.

– Предлоги, совпадающие по форме с наречиями.

– Простое распространенное предложение.

– Прямой и обратный порядок слов в простом распространенном предложении.

– Пунктуация простого предложения.

– Основные случаи словообразования.

5. Подготовка к зачету.

Самостоятельная работа студентов во 2 семестре включает следующие виды работ:

1. Подготовка текстов по специальности для внеаудиторного дополнительного чтения (изучающее, ознакомительное и просмотровое чтение) объемом 7,5 тыс. печатных знаков.

2. Использование интернет–сайтов для поиска текстов по внеаудиторному чтению.

3. Самостоятельное изучение общенаучной и терминологической лексики.

4. Самостоятельное изучение следующих тем по грамматике:

– Отглагольное существительное.

– Союз. Сочинительные и подчинительные союзы.

– Сложное предложение.

– Типы придаточных предложений.

– Союзное и бессоюзное подчинение в придаточных предложениях.

– Пунктуация сложносочиненных и сложноподчиненных предложений.

– Вводные слова и вводные предложения.

– Интернациональные слова.

5. Подготовка к зачету.

Самостоятельная работа студентов в 3 семестре включает следующие виды работ:

1. Подготовка домашних заданий (выполнение грамматических упражнений, перевод текстов для изучающего и ознакомительного чтения, самостоятельное изучение общенаучной и терминологической лексики).

2. Самостоятельное изучение следующих тем по грамматике:

– Глагол: времена группы Perfect Continuous (Present, Past, Future) действительного залога

– Неличные формы глагола: Инфинитив. Простые и сложные формы инфинитива. Объектный и субъектный инфинитивный обороты.

– Неличные формы глагола: Герундий. Простые и сложные формы герундия. Синтаксические функции герундия в предложении. Герундиальные конструкции. Особенности перевода герундия на русский язык.

– Неличные формы глагола: Причастие I, II. Простые и сложные формы причастия. Независимый причастный оборот.

3. Подготовка к экзамену.

Список литературы для самостоятельной работы:

1) Резько, П. Н. Modern Communication : учебно-методическое пособие по развитию коммуникативных навыков для студентов неязыковых вузов экономических и технических специальностей / П. Н. Резько, Н. А. Боровикова ; Министерство образования Республики Беларусь, Брестский государственный технический университет, Кафедра иностранных языков. – Брест : БрГТУ, 2020. – 105 с.

2) Дорощук, Т. А. Пособие по английскому языку для студентов специальности «Водоснабжение, водоотведение и охрана водных ресурсов» : учеб. пособие / Т. А. Дорошук, Н. В. Кистень, М. В. Борушко, Ю. А. Манец ; УО «Брестский государственный технический университет». – Брест, 2006.

3) Прокопюк, О. В. «Treat it Right» : учебно-методическое пособие для самостоятельной и внеаудиторной работы по изучающему чтению на английском языке для студентов специальности 1-70 04 03 Водоснабжение, водоотведение и охрана водных ресурсов / О. В. Прокопюк. – Брест: Издательство БрГТУ, 2016.

4) Хведченя, Л. В. Грамматика английского языка / Л. В. Хведченя. – Минск: Издательство Гревцова, 2011.

3.3.3. ДЛЯ СПЕЦИАЛЬНОСТИ «МЕЛИОРАЦИЯ И ВОДНОЕ ХОЗЯЙСТВО» (дневная форма получения высшего образования):

Самостоятельная работа студентов без контроля преподавателя осуществляется в объеме 112 часов, из них в 1 семестре – 56 ч, во 2 семестре – 56ч.

Самостоятельная работа студентов в 1 семестре включает следующие виды работ:

1. Подготовка домашних заданий (выполнение грамматических упражнений, перевод текстов для изучающего и ознакомительного чтения).

2. Использование интернет–сайтов для поиска учебной информации.

3. Самостоятельное изучение общенаучной и терминологической лексики.

4. Самостоятельное изучение следующих тем по грамматике:

– Имя существительное: образование множественного числа и притяжательного падежа существительных. Существительное в функции определения и его перевод на русский язык.

– Местоимения: личные, притяжательные, возвратные, указательные, вопросительные, относительные и союзные, неопределенные, отрицательные, обобщающие. Местоимения it, one как заменители существительного.

– Артикль: определенный и неопределенный. Основные случаи употребления артиклей. Отсутствие артикля.

– Степени сравнения прилагательных и наречий. Сравнительные конструкции с прилагательными. Место прилагательных и наречий в предложении.

– Числительные: количественные, порядковые, дробные.

– Глагол: видовременные формы действительного и страдательного залогов.

– Согласование времен.

5. Реферирование и аннотирование текстов.

6. Подготовка презентаций.

7. Подготовка к зачету.

Формы контроля самостоятельной работы студентов: опрос на практических занятиях, выполнение индивидуальных заданий.

Самостоятельная работа студентов во 2 семестре включает следующие виды работ:

1. Подготовка домашних заданий (выполнение грамматических упражнений, перевод текстов для изучающего и ознакомительного чтения).

2. Использование интернет-сайтов для поиска учебной информации.

3. Самостоятельное изучение общенаучной и терминологической лексики.

4. Самостоятельное изучение следующих тем по грамматике:

– Повелительное наклонение.

– Модальные глаголы и их эквиваленты.

– Синтаксис: Простое предложение. Порядок слов. Безличные предложения.

– Неличные формы глагола (инфинитив, герундий, причастие I, II): формы, конструкции, способы перевода на русский язык.

– Отглагольное существительное.

– Союз. Сочинительные и подчинительные союзы.

– Синтаксис: Сложное предложение. Типы придаточных предложений. Союзное и бессоюзное подчинение в придаточных предложениях.

– Условные предложения I, II, III, смешанного типов. Сослагательное наклонение.

– Прямой и обратный порядок слов в сложном предложении.

– Прямая и косвенная речь.

– Предлоги места, времени, направления, инструментальности, причинности, совместности. Предлоги, совпадающие по форме с наречиями. Место предлога в предложении.

– Основные словообразовательные модели.

– Усилительные конструкции.

– Слова-связки.

– Вводные слова и предложения.

– Интернациональные слова.

5. Реферирование и аннотирование текстов.

6. Подготовка презентаций.

7. Подготовка к экзамену.

Формы контроля самостоятельной работы студентов: опрос на практических занятиях, выполнение индивидуальных заданий.

Список литературы для самостоятельной работы:

1) Резько, П. Н. Modern Communication : учебно-методическое пособие по развитию коммуникативных навыков для студентов неязыковых вузов экономических и технических специальностей / П. Н. Резько, Н. А. Боровикова ; Министерство образования Республики Беларусь, Брестский государственный технический университет, Кафедра иностранных языков. – Брест : БрГТУ, 2020. – 105 с.

2) Дорощук, Т. А. Практикум по изучающему чтению на английском языке для студентов специальности 1-74 05 01 «Мелиорация и водное хозяйство» / Т. А. Дорощук, Е. П. Черепенко, Л. Н. Шпудейко. – Брест: Брест. гос. техн. ун-т, 2006. – 51 с.

3) Новик, Д. В. Методические рекомендации по развитию навыков устной речи по английскому языку для студентов 1-2 курсов технических специальностей / Д. В. Новик, И. И. Гайдук. – Брест: Брест. гос. техн. ун-т, 2016. – 34 с.

4) Бурлак, А. И. Учебник английского языка: для студентов архитектурных и инженерно-строительных вузов / А. И. Бурлак. – М: Высшая школа, 1982. – 247 с.

3.3.4. ДЛЯ СПЕЦИАЛЬНОСТИ «ИНЖЕНЕРНЫЕ СЕТИ, ОБОРУДОВАНИЕ ЗДАНИЙ И СООРУЖЕНИЙ (ПРОФИЛИЗАЦИЯ – ТЕПЛОГАЗОСНАБЖЕНИЕ, ВЕНТИЛЯЦИЯ И ОХРАНА ВОЗДУШНОГО БАССЕЙНА)» (заочная форма получения высшего образования и заочная форма получения высшего образования, инте-

грированного со средним специальным образованием):

Самостоятельная работа студентов без контроля преподавателя осуществляется в объеме 298 ч, из них в 1 семестре – 100 ч, во 2 семестре – 98 ч, в 3 семестре – 100 ч.

Самостоятельная работа студентов в 1 семестре включает следующие виды работ:

1. Подготовка текстов по специальности для внеаудиторного дополнительного чтения (изучающее, ознакомительное и просмотровое чтение) объемом 7,5 тыс. печатных знаков.

2. Использование интернет-сайтов для поиска текстов по внеаудиторному чтению.

3. Самостоятельное изучение общенаучной и терминологической лексики.

4. Самостоятельное изучение следующих тем по грамматике:

– Имя существительное: образование множественного числа и притяжательного падежа существительных.

– Существительное в функции определения и его перевод на русский язык.

– Местоимение one как заменитель существительного.

– Артикль: определенный и неопределенный. Основные случаи употребления артиклей. Отсутствие артикля.

– Числительные: простые, производные, сложные, количественные, порядковые и дробные. Синтаксические функции числительных.

– Глагол: времена группы Perfect Continuous (Present, Past, Future) действительного залога изъявительного наклонения.

– Модальные глаголы и их эквиваленты.

5. Подготовка к зачету.

Самостоятельная работа студентов во 2 семестре включает следующие виды работ:

1. Подготовка текстов по специальности для внеаудиторного дополнительного чтения (изучающее, ознакомительное и просмотровое чтение) объемом 7,5 тыс. печатных знаков.

2. Использование интернет-сайтов для поиска текстов по внеаудиторному чтению.

3. Самостоятельное изучение общенаучной и терминологической лексики.

4. Самостоятельное изучение следующих тем по грамматике:

– Отглагольное существительное.

– Союз. Сочинительные и подчинительные союзы.

– Сложное предложение.

– Типы придаточных предложений.

– Союзное и бессоюзное подчинение в придаточных предложениях.

– Пунктуация сложносочиненных и сложноподчиненных предложений.

– Вводные слова и вводные предложения.

– Интернациональные слова.

5. Подготовка к экзамену.

Самостоятельная работа студентов в 3 семестре включает следующие виды работ:

1. Подготовка текстов по специальности для внеаудиторного дополнительного чтения (изучающее, ознакомительное и просмотровое чтение) объемом 7,5 тыс. печатных знаков.

2. Использование интернет-сайтов для поиска текстов по внеаудиторному чтению.

3. Самостоятельное изучение общенаучной и терминологической лексики.

4. Самостоятельное изучение следующих тем по грамматике:

– Предлоги места, времени, направления;

– Простое распространенное предложение.

– Прямой и обратный порядок слов в простом распространенном предложении.

– Пунктуация простого предложения.

– Основные случаи словообразования.

5. Подготовка к зачету.

Список литературы для самостоятельной работы:

1) Резько, П. Н. Modern Communication : учебно-методическое пособие по развитию коммуникативных навыков для студентов неязыковых вузов экономических и технических специальностей / П. Н. Резько, Н. А. Боровикова ; Министерство образования Республики Беларусь, Брестский государственный технический университет, Кафедра иностранных языков. – Брест : БрГТУ, 2020. – 105 с.

2) Шпудейко, Л. Н., Гайдук, И. И. Методические указания для самостоятельной аудиторной работы для студентов специальности 1-70 04 02 «Теплогазоснабжение,вентиляция и охрана воздушного бассейна. – Брест.2012. – ч.1 – 47с.

3) Шпудейко, Л. Н., Гайдук, И. И. Методические указания для самостоятельной аудиторной работы для студентов специальности 1-70 04 02 «Теплогазоснабжение,вентиляция и охрана воздушного бассейна.- Брест.2012.-ч.2-49с.

4) Хведченя, Л. В. Грамматика английского языка / Л. В. Хведченя. – Минск: Издательство Гревцова, 2011.

ПРОТОКОЛ СОГЛАСОВАНИЯ УЧЕБНОЙ ПРОГРАММЫ
ПО ДИСЦИПЛИНЕ «ИНОСТРАННЫЙ ЯЗЫК (АНГЛИЙСКИЙ)»
С ДРУГИМИ ДИСЦИПЛИНАМИ СПЕЦИАЛЬНОСТИ

| Название учебной дисциплины, с которой требуется согласование | Название кафедры | Предложения об изменениях в содержании учебной программы учреждения высшего образования по учебной дисциплине | Решение, принятое кафедрой, разработавшей учебную программу (с указанием даты и номера протокола) |
|---|---|---|---|
| Сельскохозяйственные мелиорации. Мелиоративное почвоведение. Мелиоративные и строительные \| машины и оборудование. Рекультивация и охрана земель. | Природообустройства | | Рассмотрена и рекомендована к утверждению протокол № 10 от 03.05.2023 |
| Отопление. Вентиляция. Теплоснабжение. Газоснабжение. | Теплогазоснабжения и вентиляции | | Рассмотрена и рекомендована к утверждению протокол № 10 от 03.05.2023 |
| Гидротехнические сооружения. Водоотведение и очистка сточных вод | Кафедра водоснабжения, водоотведения и охраны водных ресурсов | | Рассмотрена и рекомендована к утверждению протокол № 10 от 03.05.2023 |

Содержание учебной программы
согласовано с выпускающей кафедрой

И.о. заведующего выпускающей кафедры,
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# ДОПОЛНЕНИЯ И ИЗМЕНЕНИЯ К УЧЕБНОЙ ПРОГРАММЕ

Регистрационный № УД-23-1-048/уч. от 23.06.2023

Иностранный язык (английский)

для специальностей:

7-07-0732-02 Инженерные сети, оборудование зданий и сооружений *(профилизация – Теплогазоснабжение, вентиляция и охрана воздушного бассейна)*

7-07-0732-02 Инженерные сети, оборудование зданий и сооружений *(профилизация – Водоснабжение, водоотведение и охрана водных ресурсов)*

6-05-0811-03 Мелиорация и водное хозяйство

(дневная форма получения высшего образования)
(заочная форма получения высшего образования)
(заочная форма получения высшего образования, интегрированного со средним специальным образованием)

на 2024-2025 учебный год

| № п/п | Дополнения и изменения | Основание |
|---|---|---|
| 1. | Для всех специальностей дневной формы получения высшего образования:<br><br>Внести в п. 3.2 раздела 3 «Информационно-методическая часть» сведения о текущей и промежуточной аттестации (информация прилагается). | Постановление Министерства образования Республики Беларусь от 13.10.2023 № 319 «Правила проведения аттестации студентов, курсантов, слушателей при освоении содержания образовательных программ высшего образования» |
| 2. | Для специальности 7-07-0732-02 Инженерные сети, оборудование зданий и сооружений (профилизация – Теплогазоснабжение, вентиляция и охрана воздушного бассейна) заочной формы получения высшего образования:<br><br>Внести в п. 3.2 раздела 3 «Информационно-методическая часть»:<br>– текущая и промежуточная аттестации для данной специальности не предусмотрены. | Постановление Министерства образования Республики Беларусь от 13.10.2023 № 319 «Правила проведения аттестации студентов, курсантов, слушателей при освоении содержания образовательных программ высшего образования» |
| 3. | Для специальности 7-07-0732-02 Инженерные сети, оборудование зданий и сооружений (профилизация – Теплогазоснабжение, вентиляция и охрана воздушного бассейна) заочной формы получения высшего образования, интегрированного со средним специальным образованием:<br><br>Внести в п. 3.2 раздела 3 «Информационно-методическая часть»:<br>– текущая и промежуточная аттестации для данной специальности не предусмотрены. | Постановление Министерства образования Республики Беларусь от 13.10.2023 № 319 «Правила проведения аттестации студентов, курсантов, слушателей при освоении содержания образовательных программ высшего образования» |

Учебная программа пересмотрена и одобрена на заседании кафедры лингвистических дисциплин и межкультурных коммуникаций (протокол №8 от 26 апреля 2024 г.).

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