МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ ФЕДЕРАЦИИ

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ИНОСТРАННЫЙ ЯЗЫК
АНГЛИЙСКИЙ ЯЗЫК

Учебно-методическое пособие
для подготовки к экзамену
по направлению подготовки 08.03.01 «Строительство»

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С23 Иностранный язык. Английский язык: учебно-методическое пособие для подготовки к экзамену по направлению подготовки 08.03.01 «Строительство» / С.В. Сботова, В.С. Горбунова, Е.Г. Стешина. – Пенза: ПГУАС, 2016. – 52 с.

Содержатся описание структуры экзамена по дисциплине «Иностранный язык», критерии оценивания экзаменационного ответа, методические указания по переводу английской оригинальной научно-технической литературы, методические указания по аннотированию и реферированию английского текста страноведческой тематики, устные экзаменационные темы.

Учебно-методическое пособие подготовлено на кафедре «Иностранные языки» и предназначено для студентов, обучающихся по направлению подготовки 08.03.01. «Строительство».

ПРЕДИСЛОВИЕ

Учебно-методическое пособие содержит задания различного уровня сложности, позволяющие обучать и контролировать знания студентов-бакалавров. В учебно-методическом пособим также представлены задания, на основе выполнения которых проверяются знания изучаемого материала и осуществляется практика использования его в устной речи на английском языке.

Предлагаемые материалы нацелены на контроль базовых знаний и навыков, приобретенных в результате изучения английского языка. Методические указания содержат тексты, которые имеют задания для проверки понимания, развития навыков устной речи и контроля знаний.

Содержание учебно-методического пособия к практическим занятиям направлено на удовлетворение требований, предъявляемых к результатам освоения дисциплины, и способствует формированию следующих компетенций:

– способность к коммуникации в устной и письменной форме на русском и иностранных языках для решения задач межличностного и межкультурного взаимодействия.

Планируемые результаты обучения (показатели достижения заданного уровня освоения компетенции):

знать:

- грамматический строй изучаемого языка;
- базовую разговорную, общенаучную и специальную лексику по направлению подготовки, в том числе термины и научную фразеологию;
- историю и культуру стран изучаемого языка;
- стилистические различия между научным и публицистическим стилем;
- основные приемы и методы перевода;
- правила оформления деловой и технической документации на иностранном языке;

уметь:

– выполнить перевод со словарем научного текста по теме направления подготовки, оформить перевод согласно существующим требованиям;
– выполнить перевод без словаря общенаучного или страноведческого текста;
– осуществить перевод и реферирование публицистической статьи;
– правильно пользоваться специальной литературой: словарями, справочниками, электронными ресурсами интернета;
– вести беседу на темы, предусмотренные рабочей программой;
– выступать с устным сообщением на темы, предусмотренные рабочей программой;
– подготовить аннотацию и реферат научного текста или статьи;

владеть:

– устной (диалогической и монологической) и письменной речью в пределах тем, предусмотренных рабочей программой;
– основными приемами и методами перевода
– основами подготовки научного доклада и презентации;

иметь представление:

– стилистических особенностях научного и публицистического стиля;
– о научной терминологии, классификации, функционировании и способах перевода терминов и фразеологизмов.

– способность осознать основные проблемы своей предметной области, при решении которых возникает необходимость в сложных задачах выбора, требующих использования количественных и качественных методов.

Планируемые результаты обучения (показатели достижения заданного уровня освоения компетенции):

знать:

– основные факты из истории строительства;
– базовую общенаучную и специальную лексику по направлению подготовки, в том числе термины и научную фразеологию;
– архитектуру стран изучаемого языка;
– стилистические различия между научным и публицистическим стилем;
– основные приемы и методы перевода;
– правила оформления деловой и технической документации на иностранном языке;

уметь:

– выполнить перевод со словарем научного текста по теме направления подготовки, оформить перевод согласно существующим требованиям;
– выполнить перевод без словаря общенаучного текста;
– осуществить перевод и реферирование публицистической статьи;

– правильно пользоваться специальной литературой: словарями, справочниками, электронными ресурсами интернета;
– вести беседу на темы, предусмотренные рабочей программой;
– выступать с устным сообщением на темы, предусмотренные рабочей программой.
– подготовить аннотацию и реферат научного текста или статьи;

владеть:

– устной (диалогической и монологической) и письменной речью в пределах тем, предусмотренных рабочей программой;
– основными приемами и методами перевода
– основами подготовки научного доклада и презентации;

иметь представление:

– стилистических особенностях научного и публицистического стиля;
– о научной терминологии, классификации, функционировании и способах перевода терминов и фразеологизмов.

– способность решать стандартные задачи профессиональной деятельности на основе информационной и библиографической культуры с применением информационно-коммуникационных технологий и с учетом основных требований информационной безопасности.

В результате изучения дисциплины (модуля) обучающийся должен:

знать:

– правила оформления деловой и технической документации на иностранном языке;
– виды, формы, структуру, функции и стилистику деловой корреспонденции;
– требования к составлению официальной корреспонденции и некоторые общепринятые правила;
– иностранный язык в объеме, необходимом для возможности получения информации делового содержания из зарубежных источников;
– речевые клише для устного делового общения;

уметь:

– применять знания иностранного языка для осуществления деловой межличностной коммуникации;
– получать и сообщать информацию на иностранном языке в письменной и устной форме, оформлять профессиональную и деловую корреспонденцию;
– читать и понимать деловую документацию и корреспонденцию по направлению подготовки, анализировать полученную информацию.
– работать с иноязычными источниками деловой информации;
– общаться лично и по телефону с иноязычными партнерами на деловую тематику;

– грамотно и корректно вести деловую переписку с зарубежными коллегами;
– организовывать деловые встречи, презентации на иностранном языке;

владеть:

– основами деловых устных и письменных коммуникаций и речевого этикета изучаемого иностранного языка;
– навыками анализа и составления договорной документации на иностранном языке;
– устной (диалогической и монологической) и письменной речью в области деловой коммуникации;
– навыками работы с коммерческой корреспонденцией (письмо, факс, телекс, электронная почта, запрос, заказ, рекламации и другие);

иметь представление:

– о стилистических особенностях сферы профессиональной коммуникации;
– о научной терминологии, классификации, функционировании и способах перевода терминов и фразеологизмов области сферы профессиональной коммуникации.

Аутентичность материала, на основе которого построено содержание учебно-методического пособия для подготовки к экзамену, способствует формированию и развитию у студентов словарного запаса на иностранном (английском) языке в сфере научной и профессиональной коммуникации; навыков чтения и понимания профессиональной корреспонденции и документации с целью поиска необходимой информации.

Профессионально-ориентированный характер учебно-методического пособия для подготовки к экзамену готовит студентов к установлению международных контактов в сфере профессиональной деятельности, в которых они смогут выступать в качестве полноценных деловых партнеров, повышая тем самым мотивацию изучения дисциплины «Иностранный язык».

ВВЕДЕНИЕ

Учебно-методическое пособие по подготовке к экзамену по английскому языку входит в состав учебно-методического комплекса дисциплины «Иностранный язык» для студентов, обучающихся по направлению подготовки 08.03.01.«Строительство». Его следует использовать для проверки знаний студентов, имеющих различный уровень знаний по английскому языку.

Учебно-методическое пособие содержит тексты и задания, предусматривающие проверку знаний лексического и грамматического материала по страноведческой тематике и по тематике профиля вуза.

Настоящее учебно-методическое пособие по подготовке к экзамену состоит из следующих разделов:

Раздел I «Методические указания по переводу английской оригинальной научно-технической литературы» содержит образцы перевода английских научно-технических текстов; примеры научно-технических текстов на английском языке для чтения и перевода.

Раздел II «Методические указания по аннотированию и реферированию английского текста страноведческой тематики» клише для аннотирования и реферирования текста; примеры текстов по страноведению для аннотирования и реферирования.

В разделе III содержатся вопросы самоконтроля для собеседования по устным экзаменационным темам, что позволяет студентам подготовиться к третьему вопросу экзамена – монологическое сообщение и собеседование по изученной тематике курса.

Цель представленного учебно-методического пособия – организация подготовки студентов к сдаче экзамена по дисциплине «Иностранный язык» по указанным направлениям подготовки. Рекомендуется использование тематического материала в предложенной в пособии последовательности, так как задания организованы по принципу увеличения трудности и постепенной детализации информации.

Для успешного выполнения заданий необходимо хорошо изучить грамматику современного английского языка и выполнить соответствующие упражнения и тесты. Учебно-методическое пособие предлагается использовать при подготовке к итоговым экзаменам.

СТРУКТУРА ЭКЗАМЕНА ПО ДИСЦИПЛИНЕ «ИНОСТРАННЫЙ ЯЗЫК» И КРИТЕРИИ ОЦЕНИВАНИЯ ЭКЗАМЕНАЦИОННОГО ОТВЕТА

Настоящее учебно-методическое пособие по подготовке к экзамену по дисциплине «Иностранный язык» (английский язык) предназначено для студентов, обучающихся по направлению подготовки 08.03.01 «Строительство».

Цель учебно-методического пособия – организация подготовки студентов к сдаче экзамена по дисциплине «Иностранный язык» по указанным направлениям подготовки.

Для определения уровня сформированности компетенции предлагается следующая **структура экзамена** по дисциплине «Иностранный язык»:

1. Чтение и письменный перевод на русский язык со словарем оригинального научного текста по направлению подготовки объемом 1200-1400 печатных знаков.

2. Чтение оригинального текста страноведческой тематики на иностранном языке. Объем текста – 1000-1200 печатных знаков. Форма проверки: реферирование содержания текста на иностранном языке;

3. Устное монологическое сообщение на иностранном языке по пройденной тематике курса.

В качестве **критериев оценки экзаменационного ответа** используются:

I. Критерии оценки перевода оригинального научного текста по направлению подготовки (с использованием словаря).

Нормативные требования: перевод текста объемом 1200-1400 п. зн. за 1 академический час.

В переводе текста оценивается точность и полнота передачи как основной, так и второстепенной информации.

Перевод оценивается в 100 баллов.

При этом за правильный перевод:

1) лексических единиц дается от 0 до 40 баллов (верный выбор эквивалентов слов; переведены все слова, как нейтральной, так и терминологической лексики; переданы все реалии и имена собственные; правильно переведены все свободные и условные словосочетания);

2) грамматических единиц и конструкций – 0–40 баллов (верный перевод видовременных форм глагола, залога и наклонения глагола, модальных глаголов, неличных форм глагола и конструкций с ними; правильно передано число и падеж существительных; учтены при переводе степени сравнения прилагательных и наречий);

3) синтаксических конструкций – 0–10 баллов (верно выбрано значение слов-заместителей; переданы эмфатические конструкции);

4) стилистически правильный (адекватный) перевод – 0–10 баллов.

Примечание: За творческие находки, удачные оригинальные трансформации, другие способы уточнения смысла текста добавляется от 3-х до 10 баллов, правильный (адекватный) перевод – 0–10 баллов.

Шкала соответствия количества набранных баллов оценке:

100 баллов – 86 баллов = «Отлично»

85 баллов – 75 баллов = «Хорошо»

74 балла – 55 баллов = «Удовлетворительно»

54 балла и менее = «Неудовлетворительно»

II. Критерии оценки реферирования на иностранном языке основного содержания иноязычного текста страноведческого характера (без использования словаря).

Нормативные требования: объем текста 1000–1200 п. зн.; время на подготовку 8-10 минут.

При устной передаче основного содержания иноязычного текста общенаучного характера оцениваются:

– полнота и точность передачи основной информации;

– знание нейтральной лексики;

– знание терминов;

– социокультурные знания, необходимые для понимания текста;

– связность передачи содержания;

– логичность построения сообщения (раскрытие причинно-следственных связей).

Показатели оцениваются по 5-балльной шкале: 5 баллов (отлично), 4 балла (хорошо), 3 балла (удовлетворительно), 2 балла (неудовлетворительно); баллы суммируются, и выводится средний балл.

III. Критерии оценки устного монологического сообщения по изученной тематике курса.

Перечень тем, выносимых на экзамен:

1. Рассказ о себе.
2. Университет.
3. Моя Родина – Россия.
4. Страны изучаемого языка.
5. Столицы стран изучаемого языка.
6. Мое направление подготовки.
7. История автомобилестроения.
8. Виды двигателей и принципы их функционирования.
9. Автомобиль и защита окружающей среды.
10. Электромобиль. Гибридный автомобиль.

Нормативные требования: объем высказывания 12–25 фраз.

«Отлично»: 86 – 100 баллов:

– Полное раскрытие темы.

– Богатый лексический запас.

– Правильное лексическое, грамматическое и фонетическое оформление высказывания.

– Естественный темп речи, отсутствие заметных пауз.

– Полная смысловая завершенность и логичность высказывания.

– Наличие выводов, заключения.

«Хорошо»: 75 – 85 баллов:

– Тема раскрыта почти полностью.

– Достаточный лексический запас.

– Небольшое количество грамматических, лексических и фонетических ошибок.

– Естественный темп речи с незначительными паузами и повторами.

– Смысловая завершенность и логичность высказывания несколько нарушены

– Наличие выводов, заключения.

«Удовлетворительно»: 55 – 74 балла:

– Тема раскрыта частично.

– Запас лексики недостаточный.

– Умеренное количество ошибок в грамматике и лексике.

– Темп речи замедленный с частыми паузами и повторами.

– Смысловая завершенность и логичность высказывания значительно нарушены.

– Выводы и заключение отсутствуют.

«Неудовлетворительно»: 54 балла и менее:

– Тема не раскрыта.

– Бедный лексический запас.

– Большое количество грамматических, лексических и фонетических ошибок.

– Медленный темп речи. Длительные паузы.

– Смысловая незавершенность высказывания.

– Отсутствие логики в высказывании.

– Отсутствие выводов и заключения.

Результаты по трем заданиям суммируются, выводится средний балл.

МЕТОДИЧЕСКИЕ УКАЗАНИЯ ПО ПЕРЕВОДУ АНГЛИЙСКОЙ ОРИГИНАЛЬНОЙ НАУЧНО-ТЕХНИЧЕСКОЙ ЛИТЕРАТУРЫ

Расширение экономических связей между странами ведет к росту объема переводимых строительных и общетехнических текстов. Правильный перевод руководств по эксплуатации, информационной и нормативной документации с одного языка на другой приобретает все более важное значение.

Какие требования предъявляются к переводу узкоспециализированных технических текстов?

1. Понятие «точного» и «буквального» перевода

«Точность» перевода означает верность передачи смысла оригинала. При «буквальном» переводе производится механическая замена иностранных слов русскими. Это приводит к искажению смысла или даже его потере. В то же время недопустим и слишком свободный пересказ текста с изменением стиля оригинала. Требования, предъявляемые к последнему, должны быть соблюдены и в переведенном тексте.

2. Что необходимо обеспечить при переводе?

Прежде всего, технический перевод должен обеспечить правильность перевода. То есть нужно соблюсти его точность, а не буквальность. Это особенно важно в тех случаях, когда в тексте речь идет о правилах безопасности.

Искажение смысла документа в этих случаях может привести к аварии или даже несчастному случаю. Желательно также сохранить соотношение авторского и языкового контекста.

Важно выбрать точное значение слова при наличии нескольких вариантов. Многозначность, т.е. наличие у одного слова нескольких значений, – явление, имеющее место в каждом языке.

Одни и те же слова, применяемые в различных областях техники, нередко имеют разное значение. Если на это не обращать внимания, искажение смысла при переводе неизбежно.

Необходимо обеспечить правильность перевода аббревиатур и сокращений. В технической литературе их довольно много. Это может создавать некоторые трудности. Наиболее распространенные сокращения нужно знать.

Устойчивые словосочетания также могут представлять определённую сложность при переводе, поэтому следует следить за адекватностью используемых эквивалентов, ведь слова, образующие такие словосочетания, по отдельности имеют один смысл, а в сочетании друг с другом – совсем другой.

При буквальном переводе устойчивого словосочетания его смысл чаще всего теряется. Поэтому переводчик должен знать наиболее важные словосочетания того языка, с которого он переводит.

3. С какими трудностями сталкиваются переводчики строительных текстов?

Одна из главных сложностей – необходимость освоения большого объема лексики. Помимо общеупотребительных слов нужно знать все строительные и технические термины, значение которых может отличаться от того, с каким эти слова употребляются в беллетристике и разговоре. Под термином понимается отдельное слово или их группа, которой обозначается определенное понятие. Особую трудность составляет перевод слов, которые в России используются редко или вообще неизвестны. В этом случае при переводе приходится подбирать слова, которые наиболее близки к ним по смыслу.

Переводчик должен понимать особенности технического текста, правила построения которого существенно отличаются от форм, применяемых в литературе и при разговоре. В технических текстах используется официально-деловой стиль. Выражения, передающие эмоции (метафоры, эпитеты и т.п.), отсутствуют. Это создает определенные трудности при переводе. Студенту необходимо быть знакомым с темой перевода, то есть он должен обладать специальными познаниями по данной теме.

Таким образом, перевод общетехнических и строительных документов представляет собой трудоемкий процесс, требующий от студентов отличного знания языка и профессиональной терминологии, а также специальных познаний в области, к которой относится переводимый текст.

Примеры научно-технических текстов на английском языке для перевода

Text 1. Civil Engineering

Civil engineering is a professional engineering discipline that deals with the design, construction, and maintenance of the physical and naturally built environment, including works like roads, bridges, canals, dams, and buildings. Civil engineering is the oldest engineering discipline after military engineering, and it was defined to distinguish non-military engineering from military engineering. Civil engineering takes place on all levels: in the public sector from municipal through to national governments, and in the private sector from individual homeowners through to international companies.

History of the civil engineering profession

Engineering has been an aspect of life since the beginnings of human existence. The earliest practice of civil engineering may have commenced between

4000 and 2000 BC in Ancient Egypt and Mesopotamia (Ancient Iraq) when humans started to abandon a nomadic existence, creating a need for the construction of shelter. During this time, transportation became increasingly important leading to the development of the wheel and sailing.

Until modern times there was no clear distinction between civil engineering and architecture, and the term engineer and architect were mainly geographical variations referring to the same person, often used interchangeably. The construction of Pyramids in Egypt (circa 2700–2500 BC) might be considered the first instances of large structure constructions. Other ancient historic civil engineering constructions include the Qanat water management system (older than 3000 years and longer than 71 km,) the Parthenon by Iktinos in Ancient Greece (447–438 BC), the Appian Way by Roman engineers (312 BC), the Great Wall of China (220 BC) and the stupas constructed in ancient Sri Lanka like the Jetavanaramaya and the extensive irrigation works in Anuradhapura. The Romans developed civil structures throughout their empire, including especially aqueducts, insular, harbors, bridges, dams and roads.

Text 2. The Institution of Civil Engineers

In the 18th century, the term civil engineering was coined to incorporate all things civilian as opposed to military engineering. The first self-proclaimed civil engineer was John Smeaton who constructed the Eddy stone lighthouse. In 1771 Smeaton and some of his colleagues formed the Smeatonian Society of Civil Engineers, a group of leaders of the profession who met informally over dinner. Though there was evidence of some technical meetings, it was little more than a social society.

In 1818 the Institution of Civil Engineers was founded in London, and in 1820 the eminent engineer Thomas Telford became its first president. The institution received a Royal Charter in 1828, formally recognizing civil engineering as a profession. Its charter defined civil engineering as the art of directing the great sources of power in nature for the use and convenience of man, as the means of production and of traffic in states, both for external and internal trade, as applied in the construction of roads, bridges, aqueducts, canals, river navigation and docks for internal intercourse and exchange, and in the construction of ports, harbors, moles, breakwaters and lighthouses, and in the art of navigation by artificial power for the purposes of commerce, and in the construction and application of machinery, and in the drainage of cities and towns.

The first private college to teach Civil Engineering in the United States was Norwich University founded in 1819 by Captain Alden Partridge. The first degree in Civil Engineering in the United States was awarded by Rensselaer Polytechnic Institute in 1835. The first such degree to be awarded to a woman was granted by Cornell University to Nora Stanton Blatch in 1905.

Text 3. Building Materials

A building material is any material which is used for a construction purpose. Many naturally occurring substances, such as clay, sand, wood and rocks, even twigs and leaves have been used to construct buildings. Apart from naturally occurring materials, many man-made products are in use, some more and some less synthetic. The manufacture of building materials is an established industry in many countries and the use of these materials is typically segmented into specific specialty trades, such as carpentry, plumbing, roofing and insulation work. They provide the make-up of habitats and structures including homes.

The tent is the home of choice among nomadic groups all over the world. Two well known types include the conical teepee and the circular yurt. It has been revived as a major construction technique with the development of tensile architecture and synthetic fabrics. Modern buildings can be made of flexible material such as fabric membranes, and supported by a system of steel cables; rigid or internal (air pressure).

Wood

A natural material for building dwellings for thousands of years, wood was also used to make Churches in the past. The main problems with wood structures are fire risk and durability. Wood is an aesthetically pleasing material that never goes out of trend completely, though the current popularity of plastic is taking its place in many construction sites.

Text 4. Mud and clay

The amount of each material used leads to different styles of buildings. The deciding factor is usually connected with the quality of the soil being used. Larger amounts of clay usually mean using the cob/adobe style, while low clay soil is usually associated with sod building. The other main ingredients include more or less sand/gravel and straw/grasses. Rammed earth is both an old and newer take on creating walls, once made by compacting clay soils between planks by hand; now forms and mechanical pneumatic compressors are used.

Soil and especially clay is good thermal mass; it is very good at keeping temperatures at a constant level. Homes built with earth tend to be naturally cool in the summer heat and warm in cold weather. Clay holds heat or cold, releasing it over a period of time like stone. Earthen walls change temperature slowly, so artificially raising or lowering the temperature can use more resources than in say a wood built house, but the heat/coolness stays longer.

Peoples building with mostly dirt and clay, such as cob, sod, and adobe, resulted in homes that have been built for centuries in western and northern Europe as well as the rest of the world, and continue to be built, though on a smaller scale. Some of these buildings have remained habitable for hundreds of years.

Text 5. The civil engineer

Civil engineers typically possess an academic degree with a major in civil engineering. The length of study for such a degree is usually three to five years and the completed degree is usually designated as a Bachelor of Engineering, though some universities designate the degree as a Bachelor of Science. The degree generally includes units covering physics, mathematics, project management, design and specific topics in civil engineering. Initially such topics cover most, if not all, of the sub-disciplines of civil engineering. Students then choose to specialize in one or more sub-disciplines towards the end of the degree. While an Undergraduate (BEng / BSc) Degree will normally provide successful students with industry accredited qualification, some universities offer postgraduate engineering awards (MEng / MSc) which allow students to further specialize in their particular area of interest within engineering.

In most countries, a Bachelor's degree in engineering represents the first step towards professional certification and the degree program itself is certified by a professional body. After completing a certified degree program the engineer must satisfy a range of requirements (including work experience and exam requirements) before being certified. Once certified, the engineer is designated the title of Professional Engineer (in the United States, Canada and South Africa), Chartered Engineer (in most Commonwealth countries), Chartered Professional Engineer (in Australia and New Zealand), or European Engineer (in much of the European Union). There are international engineering agreements between relevant professional bodies which are designed to allow engineers to practice across international borders.

Practically all certifying bodies maintain a code of ethics that they expect all members to abide by or risk expulsion. In this way, these organizations play an important role in maintaining ethical standards for the profession. An engineer's work must also comply with numerous other rules and regulations such as building codes and legislation pertaining to environmental law.

Text 6. Rock

Rock structures have existed for as long as history can recall. It is the longest lasting building material available, and is usually readily available. There are many types of rock throughout the world all with differing attributes that make them better or worse for particular uses. Rock is a very dense material so it gives a lot of protection too, its main draw-back as a material is its weight and awkwardness. Its energy density is also considered a big draw-back, as stone is hard to keep warm without using large amounts of heating resources.

Dry stone walls have been built for as long as humans have put one stone on top of another. Eventually different forms of mortar were used to hold the stones together, cement being the most commonplace now.

The granite-strewn uplands of Dart moor National Park, United Kingdom, for example, provided ample resources for early settlers. Circular huts were constructed from loose granite rocks throughout the Neolithic and early Bronze Age, and the remains of an estimated 5,000 can still be seen today. Granite continued to be used throughout the medieval period (see Dart moor longhouse) and into modern times. Slate is another stone type, commonly used as roofing material in the United Kingdom and other parts of the world where it is found.

Mostly stone buildings can be seen in most major cities, some civilizations built entirely with stone such as the Pyramids in Egypt, the Aztec pyramids and the remains of the Inca civilization.

Text 7. Thatch

Thatch is one of the oldest of building materials known; grass is a good insulator and easily harvested. Many African tribes have lived in homes made completely of grasses year round. In Europe, thatch roofs on homes were once prevalent but the material fell out of favor as industrialization and improved transport increased the availability of other materials. Today, though, the practice is undergoing a revival. In the Netherlands, for instance, many new buildings have thatched roofs with special ridge tiles on top.

Brush

Brush structures are built entirely from plant parts and are generally found in tropical and sub-tropical areas, such as rainforests, where very large leaves can be used in the building. Native Americans use them for resting and living in, too. These are built mostly with branches, twigs and leaves, and bark, similar to a beaver's lodge. These were variously named wiki ups, lean tos, and so forth.

Ice

Ice was used by the Inuit for igloos, but has also been used for ice hotels as a tourist attraction in northern areas that might not otherwise see many winter tourists.

Sand

Sand is used with cement and sometimes lime to make mortar for masonry work and plaster. Sand is used as a part of the concrete mix.

Text 8. Concrete

Concrete is a composite building material made from the combination of aggregate and a binder such as cement. The most common form of concrete is Portland cement concrete, which consists of mineral aggregate (generally gravel and sand), Portland cement and water. After mixing, the cement hydrates and eventually hardens into a stone-like material. When used in the generic sense, this is the material referred to by the term concrete.

For a concrete construction of any size, as concrete has a rather low tensile strength, it is generally strengthened using steel rods or bars (known as rebar). This strengthened concrete is then referred to as reinforced concrete. In order to minimize any air bubbles that would weaken the structure, a vibrator is used to eliminate any air that has been entrained when the liquid concrete mix is poured around the ironwork. Concrete has been the predominant building material in this modern age due to its longevity, formability, and ease of transport. Recent advancements, such as Insulating concrete forms, combine the concrete forming and other construction steps (installation of insulation). All materials must be taken in required proportions as described in standards.

Text 9. Metal

Metal is used as structural framework for larger buildings such as skyscrapers, or as an external surface covering. There are many types of metals used for building. Steel is a metal alloy whose major component is iron, and is the usual choice for metal structural building materials. It is strong, flexible, and if refined well and/or treated lasts a long time. Corrosion is metal's prime enemy when it comes to longevity.

The lower density and better corrosion resistance of aluminum alloys and tin sometimes overcome their greater cost. Brass was more common in the past, but is usually restricted to specific uses or specialty items today.

Metal figures quite prominently in prefabricated structures such as the Quonset hut, and can be seen used in most cosmopolitan cities. It requires a great deal of human labor to produce metal, especially in the large amounts needed for the building industries.

Other metals used include titanium, chrome, gold, and silver. Titanium can be used for structural purposes, but it is much more expensive than steel. Chrome, gold, and silver are used as decoration, because these materials are expensive and lack structural qualities such as tensile strength or hardness.

Text 10. A building

A building or edifice is a structure with a roof and walls standing more or less permanently in one place, such as a house or factory.[1] Buildings come in a variety of sizes, shapes and functions, and have been adapted throughout history for a wide number of factors, from building materials available, to weather conditions, to land prices, ground conditions, specific uses and aesthetic reasons. To better understand the term *building* compare the list of nonbuilding structures.

Buildings serve several needs of society – primarily as shelter from weather, security, living space, privacy, to store belongings, and to comfortably live and work. A building as a shelter represents a physical division of the human habitat (a place of comfort and safety) and the *outside* (a place that at times may be harsh and harmful).

Ever since the first cave paintings, buildings have also become objects or canvasess of artistic expression. In recent years, interest in sustainable planning and building practices has also become an intentional part of the design process of many new buildings.

Text 11. Residential buildings

Single-family residential buildings are most often called houses or homes. Residential buildings containing more than one dwelling unit are called a duplex, apartment building to differentiate them from 'individual' houses. A condominium is an apartment that the occupant owns rather than rents. Houses may also be built in pairs (semi-detached), in terraces where all but two of the houses have others either side; apartments may be built round courtyards or as rectangular blocks surrounded by a piece of ground of varying sizes. Houses which were built as a single dwelling may later be divided into apartments or bedsitters; they may also be converted to another use e.g. an office or a shop.

Building types may range from huts to multi-million dollar high-rise apartment blocks able to house thousands of people. Increasing settlement density in buildings (and smaller distances between buildings) is usually a response to high ground prices resulting from many people wanting to live close to work or similar attractors. Other common building materials are brick, concrete or combinations of either of these with stone.

Residential buildings have different names for their use depending if they are seasonal include holiday cottage (vacation home) or timeshare; size such as a cottage or great house; value such as a shack or mansion; manner of construction such as a log home or mobile home; proximity to the ground such as earth sheltered house, stilt house, or tree house. Also if the residents are in need of special care such as a nursing home, orphanage or prison; or in group housing like barracks or dormitorys.

Historically many people lived in communal buildings called longhouses, smaller dwellings called pit-houses and houses combined with barns sometimes called housebarns.

Buildings are defined to be substantial, permanent structures so other dwelling forms such as houseboats, yurts, and motorhomes are dwellings but not buildings.

Text 12. Manufacturing plant

A factory (previously manufactory) or manufacturing plant is an industrial site, usually consisting of buildings and machinery, or more commonly a complex having several buildings, where workers manufacture goods or operate machines processing one product into another.

Factories arose with the introduction of machinery during the Industrial Revolution when the capital and space requirements became too great for cottage industry or workshops. Early factories that contained small amounts of machinery, such as one or two spinning mules, and fewer than a dozen workers have been called "glorified workshops".[1]

Most modern factories have large warehouses or warehouse-like facilities that contain heavy equipment used for assembly line production. Large factories tend to be located with access to multiple modes of transportation, with some having rail, highway and water loading and unloading facilities.

Factories may either make discrete products or some type of material continuously produced such as chemicals, pulp and paper, or refined oil products. Factories manufacturing chemicals are often called *plants* and may have most of their equipment – tanks, pressure vessels, chemical reactors, pumps and piping – outdoors and operated from control rooms. Oil refineries have most of their equipment outdoors.

Discrete products may be final consumer goods, or parts and sub-assemblies which are made into final products elsewhere. Factories may be supplied parts from elsewhere or make them from raw materials. Continuous production industries typically use heat or electricity to transform streams of raw materials into finished products.

The term *mill* originally referred to the milling of grain, which usually used natural resources such as water or wind power until those were displaced by steam power in the 19th century. Because many processes like spinning and weaving, iron rolling, and paper manufacturing were originally powered by water, the term survives as in *steel mill*, *paper mill*, etc.

Text 13. Assembly line

Factory Automation with industrial robots for palletizing food products like bread and toast at a bakery in Germany.

Henry Ford further revolutionized the factory concept in the early 20th century, with the innovation of the mass production. Highly specialized laborers situated alongside a series of rolling ramps would build up a product such as (in Ford's case) an automobile. This concept dramatically decreased production costs for virtually all manufactured goods and brought about the age of consumerism.

In the mid– to late 20th century, industrialized countries introduced next-generation factories with two improvements:

1. Advanced statistical methods of quality control, pioneered by the American mathematician William Edwards Deming, whom his home country initially ignored. Quality control turned Japanese factories into world leaders in cost-effectiveness and production quality.

2. Industrial robots on the factory floor, introduced in the late 1970s. These computer-controlled welding arms and grippers could perform simple tasks such

as attaching a car door quickly and flawlessly 24 hours a day. This too cut costs and improved speed.

Some speculation as to the future of the factory includes scenarios with rapid prototyping, nanotechnology, and orbital zero-gravity facilities.

Text 14. Structural engineering

The Eiffel Tower is a historical achievement of structural engineering.

Structural engineers are trained to understand and calculate the stability, strength and rigidity of built structures for buildings[1] and nonbuilding structures, to develop designs and integrate their design with that of other designers, and to supervise construction of projects on site. They can also be involved in the design of machinery, medical equipment, vehicles etc. where structural integrity affects functioning and safety.

Structural engineering theory is based upon applied physical laws and empirical knowledge of the structural performance of different materials and geometries. Structural engineering design utilizes a number of relatively simple structural elements to build complex structural systems. Structural engineers are responsible for making creative and efficient use of funds, structural elements and materials to achieve these goals[2].

Text 15. Structural Engineer (Professional)

Structural engineers are responsible for engineering design and analysis. Entry-level structural engineers may design the individual structural elements of a structure, for example the beams, columns, and floors of a building. More experienced engineers may be responsible for the structural design and integrity of an entire system, such as a building.

Structural engineers often specialize in particular fields, such as bridge engineering, building engineering, pipeline engineering, industrial structures, or special mechanical structures such as vehicles, ships or aircraft.

Structural engineering has existed since humans first started to construct their own structures. It became a more defined and formalised profession with the emergence of the architecture profession as distinct from the engineering profession during the industrial revolution in the late 19th century. Until then, the architect and the structural engineer were usually one and the same – the master builder. Only with the development of specialised knowledge of structural theories that emerged during the 19th and early 20th centuries did the professional structural engineer come into existence.

The role of a structural engineer today involves a significant understanding of both static and dynamic loading, and the structures that are available to resist them. The complexity of modern structures often requires a great deal of creativity from the engineer in order to ensure the structures support and resist the loads they are subjected to. A structural engineer will typically have a four or five year

undergraduate degree, followed by a minimum of three years of professional practice before being considered fully qualified. Structural engineers are licensed or accredited by different learned societies and regulatory bodies around the world (for example, the Institution of Structural Engineers in the UK). Depending on the degree course they have studied and/or the jurisdiction they are seeking licensure in, they may be accredited (or licensed) as just structural engineers, or as civil engineers, or as both civil and structural engineers. Another international organisation is IABSE (International Association for Bridge and Structural Engineering). The aim of that association is to exchange knowledge and to advance the practice of structural engineering worldwide in the service of the profession and society.

Text 16. History of Structural Engineering

Structural engineering dates back to 2700 B.C.E. when the step pyramid for Pharaoh Djoser was built by Imhotep, the first engineer in history known by name. Pyramids were the most common major structures built by ancient civilizations because the structural form of a pyramid is inherently stable and can be almost infinitely scaled (as opposed to most other structural forms, which cannot be linearly increased in size in proportion to increased loads).

However, it's important to note that the structural stability of the pyramid is not primarily a result of its shape. The integrity of the pyramid is intact as long as each of the stones is able to support the weight of the stone above it. The limestone blocks were taken from a quarry near the build site. Since the compressive strength of limestone is anywhere from 30 to 250 MPa, the blocks will not fail under compression. Therefore, the structural strength of the pyramid stems from the material properties of the stones from which it was built rather than the pyramid's geometry.

Throughout ancient and medieval history most architectural design and construction was carried out by artisans, such as stone masons and carpenters, rising to the role of master builder. No theory of structures existed, and understanding of how structures stood up was extremely limited, and based almost entirely on empirical evidence of 'what had worked before'. Knowledge was retained by guilds and seldom supplanted by advances. Structures were repetitive, and increases in scale were incremental[4].

No record exists of the first calculations of the strength of structural members or the behavior of structural material, but the profession of structural engineer only really took shape with the Industrial Revolution and the re-invention of concrete (see History of Concrete). The physical sciences underlying structural engineering began to be understood in the Renaissance and have since developed into computer-based applications pioneered in the 1970s.

Text 17. Building structures

Structural building engineering includes all structural engineering related to the design of buildings. It is a branch of structural engineering closely affiliated with architecture.

Structural building engineering is primarily driven by the creative manipulation of materials and forms and the underlying mathematical and scientific ideas to achieve an end which fulfills its functional requirements and is structurally safe when subjected to all the loads it could reasonably be expected to experience. This is subtly different from architectural design, which is driven by the creative manipulation of materials and forms, mass, space, volume, texture and light to achieve an end which is aesthetic, functional and often artistic.

The architect is usually the lead designer on buildings, with a structural engineer employed as a sub-consultant. The degree to which each discipline actually leads the design depends heavily on the type of structure. Many structures are structurally simple and led by architecture, such as multi-storey office buildings and housing, while other structures, such as tensile structures, shells and gridshells are heavily dependent on their form for their strength, and the engineer may have a more significant influence on the form, and hence much of the aesthetic, than the architect.

The structural design for a building must ensure that the building is able to stand up safely, able to function without excessive deflections or movements which may cause fatigue of structural elements, cracking or failure of fixtures, fittings or partitions, or discomfort for occupants. It must account for movements and forces due to temperature, creep, cracking and imposed loads. It must also ensure that the design is practically buildable within acceptable manufacturing tolerances of the materials. It must allow the architecture to work, and the building services to fit within the building and function (air conditioning, ventilation, smoke extract, electrics, lighting etc.). The structural design of a modern building can be extremely complex, and often requires a large team to complete.

Text 18. Elements of a building

Columns

Columns are elements that carry only axial force – compression – or both axial force and bending (which is technically called a beam-column but practically, just a column). The design of a column must check the axial capacity of the element, and the buckling capacity.

The buckling capacity is the capacity of the element to withstand the propensity to buckle. Its capacity depends upon its geometry, material, and the effective length of the column, which depends upon the restraint conditions at the top and bottom of the column. The effective length is $K * l$where $l$is the real length of the column and K is the factor dependent on the restraint conditions.

The capacity of a column to carry axial load depends on the degree of bending it is subjected to, and vice versa. This is represented on an interaction chart and is a complex non-linear relationship.

Beams

A beam may be defined as an element in which one dimension is much greater than the other two and the applied loads are usually normal to the main axis of the element. Beams and columns are called line elements and are often represented by simple lines in structural modeling.

- cantilevered (supported at one end only with a fixed connection)
- simply supported (supported vertically at each end; horizontally on only one to withstand friction, and able to rotate at the supports)
- fixed (supported at both ends by fixed connection; unable to rotate at the supports)
- continuous (supported by three or more supports)
- a combination of the above (ex. supported at one end and in the middle)

Beams are elements which carry pure bending only. Bending causes one part of the section of a beam (divided along its length) to go into compression and the other part into tension. The compression part must be designed to resist buckling and crushing, while the tension part must be able to adequately resist the tension.

Text 19. Parts of a building

Trusses

A truss is a structure comprising two types of structural elements; compression members and tension members (i.e. struts and ties). Most trusses use gusset plates to connect intersecting elements. Gusset plates are relatively flexible and minimize bending moments at the connections, thus allowing the truss members to carry primarily tension or compression.

Trusses are usually utilised in large-span structures, where it would be uneconomical to use solid beams.

Plates

Plates carry bending in two directions. A concrete flat slab is an example of a plate. Plates are understood by using continuum mechanics, but due to the complexity involved they are most often designed using a codified empirical approach, or computer analysis.

They can also be designed with yield line theory, where an assumed collapse mechanism is analysed to give an upper bound on the collapse load (see Plasticity). This technique is used in practice but because the method provides an upper-bound, i.e. an unsafe prediction of the collapse load, for poorly conceived collapse mechanisms great care is needed to ensure that the assumed collapse mechanism is realistic.

Shells

Shells derive their strength from their form, and carry forces in compression in two directions. A dome is an example of a shell. They can be designed by making a hanging-chain model, which will act as a catenary in pure tension, and inverting the form to achieve pure compression.

Arches

Arches carry forces in compression in one direction only, which is why it is appropriate to build arches out of masonry. They are designed by ensuring that the line of thrust of the force remains within the depth of the arch. It is mainly used to increase the bountifulness of any structure.

Catenaries

Catenaries derive their strength from their form, and carry transverse forces in pure tension by deflecting (just as a tightrope will sag when someone walks on it). They are almost always cable or fabric structures. A fabric structure acts as a catenary in two directions.

Text 20. Building construction

Building construction is the process of adding structure to real property or construction of buildings. The majority of building construction jobs are small renovations, such as addition of a room, or renovation of a bathroom. Often, the owner of the property acts as laborer, paymaster, and design team for the entire project. Although building construction projects typically include various common elements, such as design, financial, estimating and legal considerations, many projects of varying sizes reach undesirable end results, such as structural collapse, cost overruns, and/or litigation. For this reason, those with experience in the field make detailed plans and maintain careful oversight during the project to ensure a positive outcome.

Commercial building construction is procured privately or publicly utilizing various delivery methodologies, including cost estimating, hard bid, negotiated price, traditional, management contracting, construction management-at-risk, design & build and design-build bridging.

Residential construction practices, technologies, and resources must conform to local building authority regulations and codes of practice. Materials readily available in the area generally dictate the construction materials used (e.g. brick versus stone, versus timber). Cost of construction on a per square meter (or per square foot) basis for houses can vary dramatically based on site conditions, local regulations, economies of scale (custom designed homes are often more expensive to build) and the availability of skilled tradespeople. As residential construction (as well as all other types of construction) can generate a lot of waste, careful planning again is needed here.

МЕТОДИЧЕСКИЕ УКАЗАНИЯ ПО АННОТИРОВАНИЮ И РЕФЕРИРОВАНИЮ АНГЛИЙСКОГО ТЕКСТА СТРАНОВЕДЧЕСКОЙ ТЕМАТИКИ

Render the following texts:

Text 1
British Museum

The British Museum is a museum dedicated to human history, art, and culture, located in the Bloomsbury area of London. Its permanent collection, numbering some 8 million works,[is among the largest and most comprehensive in existence and originates from all continents, illustrating and documenting the story of human culture from its beginnings to the present.

The British Museum was established in 1753, largely based on the collections of the physician and scientist Sir Hans Sloane. The museum first opened to the public on 15 January 1759, in Montagu House in Bloomsbury, on the site of the current museum building. Its expansion over the following two and a half centuries was largely a result of an expanding British colonial footprint and has resulted in the creation of several branch institutions, the first being the British Museum (Natural History) in South Kensington in 1881. Some objects in the collection, most notably the Elgin Marbles from the Parthenon, are the objects of controversy and of calls for restitution to their countries of origin.

Until 1997, when the British Library (previously centred on the Round Reading Room) moved to a new site, the British Museum housed both a national museum of antiquities and the national library in the same building. The museum is a non-departmental public body sponsored by the Department for Culture, Media and Sport, and as with all other national museums in the United Kingdom it charges no admission fee, except for loan exhibitions. Neil MacGregor became director of the museum in August 2002, succeeding Robert G. W. Anderson. In April 2015, MacGregor announced that he would step-down as Director on 15 December. On 29 September 2015, the Board of Trustees confirmed Hartwig Fischer, who will assume his post in Spring 2016, as his successor.

Text 2
Albert Einstein

Albert Einstein (1879-1955) was a German-born theoretical physicist. He developed the general theory of relativity, one of the two pillars of modern physics (alongside quantum mechanics). Einstein's work is also known for its influence on the philosophy of science. Einstein is best known in popular culture for his mass–energy equivalence formula $E = mc^2$ (which has been dubbed "the world's most famous equation"). He received the 1921 Nobel Prize in Physics for his "services to theoretical physics", in particular his discovery of the law of the photoelectric effect, a pivotal step in the evolution of quantum theory.

Near the beginning of his career, Einstein thought that Newtonian mechanics was no longer enough to reconcile the laws of classical mechanics with the laws of the electromagnetic field. This led to the development of his special theory of relativity. He realized, however, that the principle of relativity could also be extended to gravitational fields, and with his subsequent theory of gravitation in 1916, he published a paper on general relativity. He continued to deal with problems of statistical mechanics and quantum theory, which led to his explanations of particle theory and the motion of molecules. He also investigated the thermal properties of light which laid the foundation of the photon theory of light. In 1917, Einstein applied the general theory of relativity to model the large-scale structure of the universe.

He was visiting the United States when Adolf Hitler came to power in 1933 and, being Jewish, did not go back to Germany, where he had been a professor at the Berlin Academy of Sciences. He settled in the U.S., becoming an American citizen in 1940. On the eve of World War II, he endorsed a letter to President Franklin D. Roosevelt alerting him to the potential development of "extremely powerful bombs of a new type" and recommending that the U.S. begin similar research. This eventually led to what would become the Manhattan Project. Einstein supported defending the Allied forces, but largely denounced the idea of using the newly discovered nuclear fission as a weapon. Later, with the British philosopher Bertrand Russell, Einstein signed the Russell–Einstein Manifesto, which highlighted the danger of nuclear weapons. Einstein was affiliated with the Institute for Advanced Study in Princeton, New Jersey, until his death in 1955.

Einstein published more than 300 scientific papers along with over 150 non-scientific works. On 5 December 2014, universities and archives announced the release of Einstein's papers, comprising more than 30,000 unique documents. Einstein's intellectual achievements and originality have made the word "Einstein" synonymous with "genius"

Text 3
Climate in the United Kingdom

The United Kingdom straddles the geographic mid-latitudes between 49 and 61 N. It is on the western seaboard of Afro-Eurasia, the world's largest land mass. These conditions allow convergence between moist maritime air and dry continental air. In this area, the large temperature variation creates atmospheric instability and this is a major factor that influences the often unsettled weather the country experiences, where many types of weather can be experienced in a single day.

The climate in the United Kingdom is defined as a temperate oceanic climate, or *Cfb* on the Köppen climate classification system, a classification it shares with most of northwest Europe. Regional climates are influenced by the Atlantic Ocean and latitude. Northern Ireland, Wales and western parts of England and Scotland, being closest to the Atlantic Ocean, are generally the mildest, wettest and windiest

regions of the UK, and temperature ranges here are seldom extreme. Eastern areas are drier, cooler, less windy and also experience the greatest daily and seasonal temperature variations. Northern areas are generally cooler, wetter and have slightly larger temperature ranges than southern areas. Though the UK is mostly under the influence of the maritime tropical air mass from the south-west, different regions are more susceptible than others when different air masses affect the country: Northern Ireland and the west of Scotland are the most exposed to the maritime polar air mass which brings cool moist air; the east of Scotland and north-east England are more exposed to the continental polar air mass which brings cold dry air; the south and south-east of England are more exposed to the continental tropical air mass which brings warm dry air (and consequently most of the time the warmest summer temperatures); and Wales and the south-west of England are the most exposed to the maritime tropical air mass which brings warm moist air. If the air masses are strong enough in their respective areas during the summer there can sometimes be a large difference in temperature between the far north of Scotland (including the Islands) and south-east of England – often a difference of 10–15 °C (18-27 °F) but sometimes of as much as 20 °C (36 °F) or more. An example of this could be that in the height of summer the Northern Isles could have temperatures around 15 °C (59 °F) and areas around London could reach 30 °C (86 °F).

Text 4
Michael Faraday

Michael Faraday (1791–1867) was an English scientist who contributed to the fields of electromagnetism and electrochemistry. His main discoveries include those of electromagnetic induction, diamagnetism and electrolysis.

Although Faraday received little formal education, he was one of the most influential scientists in history. It was by his research on the magnetic field around a conductor carrying a direct current that Faraday established the basis for the concept of the electromagnetic field in physics. Faraday also established that magnetism could affect rays of light and that there was an underlying relationship between the two phenomena. He similarly discovered the principle of electromagnetic induction, diamagnetism, and the laws of electrolysis. His inventions of electromagnetic rotary devices formed the foundation of electric motor technology, and it was largely due to his efforts that electricity became practical for use in technology.

As a chemist, Faraday discovered benzene, investigated the clathrate hydrate of chlorine, invented an early form of the Bunsen burner and the system of oxidation numbers, and popularized terminology such as anode, cathode, electrode, and ion. Faraday ultimately became the first and foremost Fullerian Professor of Chemistry at the Royal Institution of Great Britain, a lifetime position.

Faraday was an excellent experimentalist who conveyed his ideas in clear and simple language; his mathematical abilities, however, did not extend as far as trigonometry or any but the simplest algebra. James Clerk Maxwell took the work of Faraday and others, and summarized it in a set of equations that is accepted as the basis of all modern theories of electromagnetic phenomena. On Faraday's uses of the lines of force, Maxwell wrote that they show Faraday "to have been in reality a mathematician of a very high order – one from whom the mathematicians of the future may derive valuable and fertile methods." The SI unit of capacitance is named in his honour: the farad.

Albert Einstein kept a picture of Faraday on his study wall, alongside pictures of Isaac Newton and James Clerk Maxwell. Physicist Ernest Rutherford stated; "When we consider the magnitude and extent of his discoveries and their influence on the progress of science and of industry, there is no honour too great to pay to the memory of Faraday, one of the greatest scientific discoverers of all time"

Text 5
System of Education in the United Kingdom

The quality of a country's future life, commercially, industrially and intellectually, depends on the quality of its education system. The state in the United Kingdom provides a full range of free schooling. Those parents who prefer to send their children to private educational institutions, are free to do so. There are about 2500 fee-paying, or public schools in the country.

Schooling is voluntary under the age of five, and compulsory from 5 to 16. Generally, primary education in the UK takes place in infant schools (for ages 5-7) and junior schools (for ages 8—11); secondary education takes place in secondary schools. Pupils can stay at school voluntarily for up to three years longer. Until 1964 children took an 'eleven plus exam' at the age of 11 and were 'streamed' according to the results of the exam for education in different types of secondary schools. Grammar schools provided a mainly academic course for the top 20 %, technical schools specialized in technical studies, modern schools provided a general education with a practical bias. In 1965 non-selective comprehensive schools were introduced, though the old system still exists.

Having completed a compulsory education, 16 year-olds may start work, remain at school or study at a Further Education college. At schools and colleges they can take the school-leaving General Certificate of Secondary Education (GCSE) exams — in a range of subjects. Other students prefer to pursue work-based training such as General National Vocational Qualifications (GNVQs), which provide skills and knowledge some in vocational areas such as business, engineering, etc. Having completed GCSEs most students usually specialize in three to four subjects leading to General Certificate of Education (GCE) A Levels. Others can take higher grade GNVQs.

Many students then move towards higher education training at universities, colleges and institutes offering studies at degree level and higher. The most common degree courses, which usually take three years to complete are the Bachelor of Arts (BA), Bachelor of Science (BSc), Bachelor of Education (BEd), Bachelor of Engineering (BEng) and Bachelor of Laws (LLB). Master degrees for those undertaking further study include the Master of Arts (MA), Master of Science (MSc), Master of Business Administration (MBA) and Master of Laws (LLM). Then there are research-based postgraduate courses leading to the Master of Philosophy (MPhil) and Doctor of Philosophy (PhD/DPhil).

These academic qualifications involve thousands of courses at more than 180 higher educational establishments in Britain. The most famous British universities are, of course, Oxford and Cambridge called 'Oxbridge' and famous for their academic excellence.

Text 6
University of Cambridge

The University of Cambridge (informally Cambridge University or simply Cambridge) is a collegiate public research university in Cambridge, England. Founded in 1209, Cambridge is the second-oldest university in the English-speaking world and the world's fourth-oldest surviving university. The university grew out of an association of scholars who left the University of Oxford after a dispute with the townspeople. The two ancient universities share many common features and are often jointly referred to as "Oxbridge".

Cambridge is consistently ranked as one of the world's best universities. The university has educated many notable alumni, including eminent mathematicians, scientists, politicians, lawyers, philosophers, writers, actors, and foreign Heads of State. Ninety-two Nobel laureates have been affiliated with Cambridge as students, faculty, staff or alumni.

Cambridge is formed from a variety of institutions which include 31 constituent colleges and over 100 academic departments organized into six schools. Cambridge University Press, a department of the university, is the world's oldest publishing house and the second-largest university press in the world. The university also operates eight cultural and scientific museums, including the Fitzwilliam Museum, and a botanic garden. Cambridge's libraries hold a total of around 15 million books, eight million of which are in Cambridge University Library, a legal deposit library. Throughout its history, the university has featured in literature and artistic works by numerous authors including Geoffrey Chaucer, E. M. Forster and C. P. Snow.

In the year ended 31 July 2015, the university had a total income of £1.64 billion, of which £397 million was from research grants and contracts. The central university and colleges have a combined endowment of around £5.89 billion, the largest of any university outside the United States. The university is closely linked with the development of the high-tech business cluster known as "Silicon

Fen". It is a member of numerous associations and forms part of the "golden triangle" of leading English universities and Cambridge University Health Partners, an academic health science centre.

Text 7
University Of London

The University of London is a collegiate research university located in London, England, consisting of 18 constituent colleges, 10 research institutes and a number of central bodies.

The university is the second largest university by number of full-time students in the United Kingdom, with 142,990 campus-based students and over 50,000 distance learning students in the University of London International Programmes. The university was established by Royal Charter in 1836, as a degree-awarding examination board for students holding certificates from University College London (previously called London University) and King's College London and "other such other Institutions, corporate or unincorporated, as shall be established for the purpose of Education, whether within the Metropolis or elsewhere within our United Kingdom". The university moved to a federal structure in 1900.

For most practical purposes, ranging from admissions to funding, the constituent colleges operate on a semi-independent basis, with some recently obtaining the power to award their own degrees whilst remaining in the federal university. The nine largest colleges of the university are King's College London; University College London; Birkbeck; Goldsmiths; the London Business School; Queen Mary; Royal Holloway; SOAS; and the London School of Economics and Political Science. The specialist colleges of the university include Heythrop College, specialising in philosophy and theology, and St George's, specialising in medicine. Imperial College London was formerly a member before it left the University of London in 2007. On 16 July 2015 it was announced that City University London would join the federal University of London, becoming one of its constituent colleges from August 2016.

Many notable individuals have passed through the university, either as staff or students, including at least 4 monarchs, 52 presidents or prime ministers, 74 Nobel laureates, 6 Grammy winners, 2 Oscar winners and 3 Olympic gold medalists.

Text 8
University of Oxford

The University of Oxford (informally Oxford University or simply Oxford) is a collegiate research university located in Oxford, England. While having no known date of foundation, there is evidence of teaching as far back as 1096, making it the oldest university in the English-speaking world and the world's second-oldest surviving university. It grew rapidly from 1167 when Henry II banned Eng-

lish students from attending the University of Paris. After disputes between students and Oxford townsfolk in 1209, some academics fled northeast to Cambridge where they established what became the University of Cambridge. The two "ancient universities" are frequently jointly referred to as "Oxbridge".

The university is made up of a variety of institutions, including 38 constituent colleges and a full range of academic departments which are organized into four divisions. All the colleges are self-governing institutions as part of the university, each controlling its own membership and with its own internal structure and activities. Being a city university, it does not have a main campus; instead, all the buildings and facilities are scattered throughout the city centre. Most undergraduate teaching at Oxford is organized around weekly tutorials at the self-governing colleges and halls, supported by classes, lectures and laboratory work provided by university faculties and departments.

Oxford is the home of several notable scholarships, including the Clarendon Scholarship which was launched in 2001 and the Rhodes Scholarship which has brought graduate students to study at the university for more than a century. The university operates the largest university press in the world and the largest academic library system in Britain. Oxford has educated many notable alumni, including 27 Nobel laureates, 26 British prime ministers (most recently David Cameron, the incumbent) and many foreign heads of state.

Text 9
William Shakespeare

April 23 is the birthday of William Shakespeare, the greatest English writer.

The last half of the XVI and the beginning of the XVII centuries are known as the golden age of English literature. It was the time of the English Renaissance, and sometimes it is even called «the age of Shakespeare».

By that time England had become a powerful state. English trade was flourishing. The yoke of the feudal barons had been thrown off. New branches of science were developing. At the same time there was no change for the better in the life of the English people, and the power of gold grew stronger.

Shakespeare saw these contradictions and reflected them in his works.

William Shakespeare, the greatest and most famous of English writers, and probably the greatest playwright who has ever lived, was born in the town of Stratford-on-Avon, Warwickshire.

In spite of his fame we know very little about his life. The things that we know about Shakespeare’s life begin with the date when he was baptized in the church of Stratford, On April 26, 1564, when he was only a few days old. So he is believed to have been born on April 23.

His father, John Shakespeare, was a merchant and he had several houses in Stratford. Two of them were side by side in Henley Street, and it was in one of them that William was born. William’s mother, Mary Arden, was a farmer’s daughter of Wilmcote, near Stratford.

William lived in Stratford until he was about twenty-one, when he went to London. We do not know why he left Stratford-on-Avon.

There is a story that Shakespeare's first job in London was holding rich men's horses at the theatre door. But nobody can be sure that this story is true.

Later, Shakespeare became an actor and a member of one of the chief acting companies. Soon he began to write plays for this company and in a few years became a well-known author.

Text 10
Harvard University

Harvard University is a private research university in Cambridge, Massachusetts (US), established 1636, whose history, influence and wealth have made it one of the world's most prestigious universities.

Established originally by the Massachusetts legislature and soon thereafter named for John Harvard (its first benefactor), Harvard is the United States' oldest institution of higher learning, and the Harvard Corporation (formally, the *President and Fellows of Harvard College*) is its first chartered corporation. Although never formally affiliated with any denomination, the early College primarily trained Congregationalist and Unitarian clergy. Its curriculum and student body were gradually secularized during the 18th century, and by the 19th century Harvard had emerged as the central cultural establishment among Boston elites. Following the American Civil War, President Charles W. Eliot's long tenure (1869–1909) transformed the college and affiliated professional schools into a modern research university; Harvard was a founding member of the Association of American Universities in 1900. James Bryant Conant led the university through the Great Depression and World War II and began to reform the curriculum and liberalize admissions after the war. The undergraduate college became coeducational after its 1977 merger with Radcliffe College.

The University is organized into eleven separate academic units—ten faculties and the Radcliffe Institute for Advanced Study—with campuses throughout the Boston metropolitan area: its 209-acre (85 ha) main campus is centered on Harvard Yard in Cambridge, approximately 3 miles (5 km) northwest of Boston; the business school and athletics facilities, including Harvard Stadium, are located across the Charles River in the Allston neighborhood of Boston and the medical, dental, and public health schools are in the Longwood Medical Area. Harvard's $37.6 billion financial endowment is the largest of any academic institution.

Harvard is a large, highly residential research university. The nominal cost of attendance is high, but the University's large endowment allows it to offer generous financial aid packages. It operates several arts, cultural, and scientific museums, alongside the Harvard Library, which is the world's largest academic and private library system, comprising 79 individual libraries with over 18 million volumes. Harvard's alumni include eight U.S. presidents, several foreign heads of state, 62 living billionaires, 335 Rhodes Scholars, and 242 Marshall Scholars. To

date, some 150 Nobel laureates and 5 Fields Medalists (when awarded) have been affiliated as students, faculty, or staff.

Text 11
Isaac Newton

Sir Isaac Newton (1642-1727) was an English physicist and mathematician (described in his own day as a "natural philosopher") who is widely recognized as one of the most influential scientists of all time and a key figure in the scientific revolution. His book "Mathematical Principles of Natural Philosophy", first published in 1687, laid the foundations for classical mechanics. Newton made seminal contributions to optics, and he shares credit with Gottfried Wilhelm Leibniz for the development of calculus.

Newton's *Principia* formulated the laws of motion and universal gravitation, which dominated scientists' view of the physical universe for the next three centuries. By deriving Kepler's laws of planetary motion from his mathematical description of gravity, and then using the same principles to account for the trajectories of comets, the tides, the precession of the equinoxes, and other phenomena, Newton removed the last doubts about the validity of the heliocentric model of the Solar System. This work also demonstrated that the motion of objects on Earth and of celestial bodies could be described by the same principles. His prediction that Earth should be shaped as an oblate spheroid was later vindicated by the measurements of Maupertuis, La Condamine, and others, which helped convince most Continental European scientists of the superiority of Newtonian mechanics over the earlier system of Descartes.

Newton built the first practical reflecting telescope and developed a theory of colour based on the observation that a prism decomposes white light into the many colours of the visible spectrum. He formulated an empirical law of cooling, studied the speed of sound, and introduced the notion of a Newtonian fluid. In addition to his work on calculus, as a mathematician Newton contributed to the study of power series, generalized the binomial theorem to non-integer exponents, developed a method for approximating the roots of a function, and classified most of the cubic plane curves.

Newton was a fellow of Trinity College and the second Lucasian Professor of Mathematics at the University of Cambridge. He was a devout but unorthodox Christian, and, unusually for a member of the Cambridge faculty of the day, he refused to take holy orders in the Church of England, perhaps because he privately rejected the doctrine of the Trinity. Beyond his work on the mathematical sciences, Newton dedicated much of his time to the study of biblical chronology and alchemy, but most of his work in those areas remained unpublished until long after his death. In his later life, Newton became president of the Royal Society. Newton served the British government as Warden and Master of the Royal Mint.

Text 12
St Paul's Cathedral

St Paul's Cathedral, London, is an Anglican cathedral, the seat of the Bishop of London and the mother church of the Diocese of London. It sits on Ludgate Hill at the highest point of the City of London. Its dedication to Paul the Apostle dates back to the original church on this site, founded in AD 604. The present church, dating from the late 17th century, was designed in the English Baroque style by Sir Christopher Wren. Its construction, completed in Wren's lifetime, was part of a major rebuilding programme in the City after the Great Fire of London.

The cathedral is one of the most famous and most recognisable sights of London. Its dome, framed by the spires of Wren's City churches, dominated the skyline for 300 years. At 365 feet (111 m) high, it was the tallest building in London from 1710 to 1962. The dome is among the highest in the world. St Paul's is the second largest church building in area in the United Kingdom after Liverpool Cathedral.

St Paul's Cathedral occupies a significant place in the national identity. It is the central subject of much promotional material, as well as of images of the dome surrounded by the smoke and fire of the Blitz. Services held at St Paul's have included the funerals of Lord Nelson, the Duke of Wellington and Sir Winston Churchill; Jubilee celebrations for Queen Victoria; peace services marking the end of the First and Second World Wars; the wedding of Charles, Prince of Wales and Lady Diana Spencer, the launch of the Festival of Britain and the thanksgiving services for the Golden Jubilee, the 80th Birthday and the Diamond Jubilee of Elizabeth II.

Text 13
Trafalgar Square

Trafalgar Square is a public square in the City of Westminster, Central London, built around the area formerly known as Charing Cross. Its name commemorates the Battle of Trafalgar, a British naval victory in the Napoleonic Wars with France and Spain that took place on 21 October 1805 off the coast of Cape Trafalgar, Spain.

The site of Trafalgar Square had been a significant landmark since the 13th century and originally contained the King's Mews. After George IV moved the mews to Buckingham Palace, the area was redeveloped by John Nash but progress was slow after his death and the square did not open until 1844. Nelson's Column at its centre is guarded by four lion statues. A number of commemorative statues and sculptures occupy the square but the Fourth Plinth, left empty since 1840, has been host to contemporary art since 1999.

The square has been used for community gatherings and political demonstrations including Bloody Sunday, the first Aldermaston March, anti-war protests and campaigns against climate change. A Christmas tree has been donated to the square by Norway since 1947 and is erected for twelve days before and after

Christmas Day. The square is a centre of annual celebrations on New Year's Eve. It was well known for its feral pigeons until their removal in the early-21st century.

Text 14
Buckingham Palace

Buckingham Palace is the official London residence and administrative headquarters of the reigning monarch of the United Kingdom. Located in the City of Westminster, the palace is often at the centre of state occasions and royal hospitality. It has been a focus for the British people at times of national rejoicing.

Originally known as Buckingham House, the building at the core of today's palace was a large townhouse built for the Duke of Buckingham in 1703 on a site that had been in private ownership for at least 150 years. It was acquired by King George III in 1761as a private residence for Queen Charlotte and became known as "The Queen's House". During the 19th century it was enlarged, principally by architects John Nash and Edward Blore, who constructed three wings around a central courtyard. Buckingham Palace became the London residence of the British monarch on the accession of Queen Victoria in 1837.

The last major structural additions were made in the late 19th and early 20th centuries, including the East front, which contains the well-known balcony on which the royal family traditionally congregates to greet crowds. The palace chapel was destroyed by a German bomb during World War II; the Queen's Gallery was built on the site and opened to the public in 1962 to exhibit works of art from the Royal Collection.

The original early 19th-century interior designs, many of which survive, include widespread use of brightly coloured scagliola and blue and pink lapis, on the advice of Sir Charles Long. King Edward VII oversaw a partial redecoration in a *Belle Époque* cream and gold colour scheme. Many smaller reception rooms are furnished in the Chinese regency style with furniture and fittings brought from the Royal Pavilion at Brighton and from Carlton House. The palace has 775 rooms, and the garden is the largest private garden in London. The state rooms, used for official and state entertaining, are open to the public each year for most of August and September, and on selected days in winter and spring.

Text 15
Elizabeth II

Elizabeth II (Elizabeth Alexandra Mary; born 21 April 1926) is, and has been since her accession in 1952, Queen of the United Kingdom, Canada, Australia, and New Zealand, and Head of the Commonwealth. She is also Queen of 12 countries that have become independent since her accession: Jamaica, Barbados, the Bahamas, Grenada, Papua New Guinea, Solomon Islands, Tuvalu, Saint Lucia, Saint Vincent and the Grenadines, Belize, Antigua and Barbuda, and Saint Kitts and Nevis.

Elizabeth was born in London to the Duke and Duchess of York, later King George VI and Queen Elizabeth, and was the elder of their two daughters. She was educated privately at home. Her father acceded to the throne on the abdication of his brother Edward VIII in 1936, from which time she was the heir presumptive. She began to undertake public duties during World War II, serving in the Auxiliary Territorial Service. In 1947, she married Prince Philip, Duke of Edinburgh, with whom she has four children: Charles, Anne, Andrew, and Edward.

Elizabeth's many historic visits and meetings include a state visit to the Republic of Ireland and reciprocal visits to and from the Pope. She has seen major constitutional changes, such as devolution in the United Kingdom, Canadian patriation, and the decolonisation of Africa. She has also reigned through various wars and conflicts involving many of her realms. She is the world's oldest reigning monarch as well as Britain's longest-lived. In 2015, she surpassed the reign of her great-great-grandmother, Queen Victoria, to become the longest-reigning British monarch and the longest-reigning queen regnant in world history.

Times of personal significance have included the births and marriages of her children, grandchildren and great grandchildren, her coronation in 1953, and the celebration of milestones such as her Silver, Golden and Diamond Jubilees in 1977, 2002, and 2012, respectively. Moments of sadness for her include the death of her father, aged 56; the assassination of Prince Philip's uncle, Lord Mountbatten; the breakdown of her children's marriages in 1992 (her *annus horribilis*); the death in 1997 of her son's former wife, Diana, Princess of Wales; and the deaths of her mother and sister in 2002. Elizabeth has occasionally faced republican sentiments and severe press criticism of the royal family, but support for the monarchy and her personal popularity remain high.

Text 16
Victoria

Victoria (Alexandrina Victoria; 24 May 1819 – 22 January 1901) was Queen of the United Kingdom of Great Britain and Ireland from 20 June 1837 until her death. From 1 May 1876, she had the additional title of Empress of India.

Victoria was the daughter of Prince Edward, Duke of Kent and Strathearn, the fourth son of King George III. Both the Duke of Kent and King George III died in 1820, and Victoria was raised under close supervision by her German-born mother Princess Victoria of Saxe-Coburg-Saalfeld. She inherited the throne aged 18, after her father's three elder brothers had all died, leaving no surviving legitimate children. The United Kingdom was already an established constitutional monarchy, in which the sovereign held relatively little direct political power. Privately, Victoria attempted to influence government policy and ministerial appointments; publicly, she became a national icon who was identified with strict standards of personal morality.

Victoria married her first cousin, Prince Albert of Saxe-Coburg and Gotha, in 1840. Their nine children married into royal and noble families across the continent, tying them together and earning her the sobriquet "the grandmother of Europe". After Albert's death in 1861, Victoria plunged into deep mourning and avoided public appearances. As a result of her seclusion, republicanism temporarily gained strength, but in the latter half of her reign her popularity recovered. Her Golden and Diamond Jubilees were times of public celebration.

Her reign of 63 years and seven months is known as the Victorian era. It was a period of industrial, cultural, political, scientific, and military change within the United Kingdom, and was marked by a great expansion of the British Empire. She was the last British monarch of the House of Hanover. Her son and successor, Edward VII, belonged to the House of Saxe-Coburg and Gotha, the line of his father.

Text 17
Sherlock Holmes

Sherlock Holmes is a fictional private detective created by British author Sir Arthur Conan Doyle. Known as a "consulting detective" in the stories, Holmes is known for a proficiency with observation, forensic science, and logical reasoning that borders on the fantastic, which he employs when investigating cases for a wide variety of clients, including Scotland Yard. First appearing in print in 1887, the character's popularity became widespread with the first series of short stories in *The Strand Magazine*, beginning with "A Scandal in Bohemia" in 1891; additional stories appeared from then to 1927, eventually totalling four novels and 56 short stories. All but one are set in the Victorian or Edwardian periods, taking place between about 1880 to 1914. Most are narrated by the character of Holmes's friend and biographer Dr. Watson, who usually accompanies Holmes during his investigations and often shares quarters with him at the address of 221B Baker Street, London, where many of the stories begin.

Though not the first fictional detective, Sherlock Holmes is arguably the most well-known, with *Guinness World Records* listing him as the "most portrayed movie character" in history.[1] Holmes's popularity and fame are such that many have believed him to be not a fictional character but a real individual; numerous literary and fan societies have been founded that pretend to operate on this principle. The stories and character have had a profound and lasting effect on mystery writing and popular culture as a whole, with both the original tales as well as thousands written by authors other than Conan Doyle being adapted into stage and radio plays, television, films, video games, and other media for over one hundred years.

Text 18
Robert Burns

Robert Burns (25 January 1759 – 21 July 1796), also known as Rabbie Burns, the Bard of Ayrshire and various other names and epithets,[nb 1] was a Scottish poet and lyricist. He is widely regarded as the national poet of Scotland and is celebrated worldwide. He is the best known of the poets who have written in the Scots language, although much of his writing is also in English and a light Scots dialect, accessible to an audience beyond Scotland. He also wrote in standard English, and in these writings his political or civil commentary is often at its bluntest.

He is regarded as a pioneer of the Romantic movement, and after his death he became a great source of inspiration to the founders of both liberalism and socialism, and a cultural icon in Scotland and among the Scottish diaspora around the world. Celebration of his life and work became almost a national charismatic cult during the 19th and 20th centuries, and his influence has long been strong on Scottish literature. In 2009 he was chosen as the greatest Scot by the Scottish public in a vote run by Scottish television channel STV.

As well as making original compositions, Burns also collected folk songs from across Scotland, often revising or adapting them. His poem (and song) "Auld Lang Syne" is often sung at Hogmanay (the last day of the year), and "Scots Wha Hae" served for a long time as an unofficial national anthem of the country. Other poems and songs of Burns that remain well known across the world today include "A Red, Red Rose", "A Man's a Man for A' That", "To a Louse", "To a Mouse", "The Battle of Sherramuir", "Tam o' Shanter" and "Ae Fond Kiss".

Text 19
Marie Tussaud

Marie Tussaud was born as Marie Grosholtz in 1761 in Strasbourg, France. Her mother worked as a housekeeper for Dr. Philippe Curtius in Bern, Switzerland, who was a physician skilled in wax modelling. Curtius taught Tussaud the art of wax modelling.

Tussaud created her first wax sculpture, of Voltaire, in 1777. Other famous people she modelled at that time include Jean-Jacques Rousseau and Benjamin Franklin. During the French Revolution she modelled many prominent victims. In her memoirs she claims that she would search through corpses to find the severed heads of executed citizens, from which she would make death masks. Her death masks were held up as revolutionary flags and paraded through the streets of Paris. Following the doctor's death in 1794, she inherited his vast collection of wax models and spent the next 33 years travelling around Europe. When she married Francois Tussaud in 1795, the show acquired a new name: Madame Tussaud's. In 1802 she went to London, having accepted an invitation from Paul Philidor, a magic lantern and phantasmagoria pioneer, to exhibit her work alongside his show at the Lyceum Theatre, London. She did not fare particularly well financially, with Philidor taking half of her profits. As a result of the Napoleonic Wars,

she was unable to return to France, so she traveled throughout Great Britain and Ireland exhibiting her collection. From 1831 she took a series of short leases on the upper floor of "Baker Street Bazaar" (on the west side of Baker Street, Dorset Street and King Street), which later featured in the Druce-Portland case sequence of trials of 1898–1907. This became Tussaud's first permanent home in 1836.[6] One of the main attractions of her museum was the Chamber of Horrors

УСТНЫЕ ЭКЗАМЕНАЦИОННЫЕ ТЕМЫ ДЛЯ СОБЕСЕДОВАНИЯ

Text 1. My Speciality and Professional Practice

1. Read and translate the text:

I study at the Penza State University of Architecture and Construction. The University trains highly qualified specialists for construction industry. I entered the Building faculty as I want to be a building engineer. The work of building engineer involves designing, construction and maintenance of industrial, public and residential buildings.

The students of our faculty take studies in different subjects dealing with industrial and building construction. We study architecture, construction mechanics, structural design, builder's plant, metal structures, hydraulics, Economics and English.

In the course of studies we take professional practices at various building enterprises and construction sites where the students work as building workers, foremen and junior engineering staff. They often take their first professional practice in student building teams.

During the pre-diploma practice the students of our faculty work as building engineers at the design institutions, on construction sites or at some other building enterprises. The students gather material for their graduation papers. At the end of the fifth year they submit their graduation papers and are allocated to various building enterprises throughout the country.

Look through the vocabulary:

1) a building engineer – инженер-строитель
2) industrial construction – промышленное строительство.
3) public construction – гражданское строительство
4) building construction – гражданское строительство
5) to design – проектировать
6) designing – проектирование
7) maintenance – обслуживание, эксплуатация
8) industrial building – промышленное здание
9) public building – общественное здание
10) residential building – жилой дом
11) to take studies in – изучать
15) builder's plant – строительные машины
16) hydraulics – гидравлика
17) Economics – политэкономия
18) professional practice – производственная практика
19) to take professional practice (at) – проходить производственную практику
20) building enterprises – строительные организации
21) junior engineering staff – младший инженерный персонал
22) foreman – мастер, прораб
23) a student building team – студенческий стройотряд
24) pre-diploma practice – преддипломная практика

12) to deal with – относиться к
13) construction mechanics – строительная механика
14) structural design – конструктивное проектирование
25) a design institution – проектный институт
26) to gather – собирать
27) to submit a graduation paper – предъявлять дипломную работу
28) to allocate – распределять

3. Answer the questions:

1. What faculty do you study at?
2. What is your future speciality?
3. What does the work of a building involve?
4. What subjects do you study?
5. Where do students take their first professional practice?
6. What do they do during pre– diploma practice?
7. When do the students have to submit their graduation papers?
8. Where are the young engineers allocated to?

4.Complete the sentences:

1. During their pre-diploma practice the students work as …
2. The students take studies in different subjects dealing with …
3. The work of a building engineer involves …
4. This summer we take our first professional practice in …
5. At the end of the fifth year the students submit …
6. The University trains …
7. The students gather material for …
8. In the course of studies the students take …

Text 2. Building Materials

1. Read and translate the text:

One of the primary tasks of a civil engineer is to select all the necessary building materials and adapt them for the construction.

All building materials are classified according to their structure and according to their use. According to their structure building materials may be natural and artificial. Natural building materials are stone, clay, sand, lime and timber. Artificial materials are brick, concrete, cement, steel and plastics. According to their use building materials are divided into three groups: main, binding and secondary.

Main or structural building materials are brick, stone, concrete, timber and metals. They are used for bearing structures. Structural materials should be hard, durable, fire and weather resistant and easily fastened together.

Timber, stone and brick are the most ancient building materials.

Wood is light, cheap and easy to work, but it is not fire and weather resistant. Wood is often used in modern construction for window and door frames.

Stone possesses mechanical strength, durability, compactness, porosity, sound and heat insulation. It is fire-resistant. Different types of natural and artificial stones are used for the construction of modern buildings.

Brick is artificial stone made of clay and sand. Bricks are chiefly used for the construction of walls. They present a pleasant appearance and give strength and firmness to the structures. Structural steel and concrete are the most widely used building materials now. They possess in increased, mechanical strength, durability and are weather resistant.

Concrete is a mixture of cement, sand, crushed stone and water. The most important component of concrete is cement. Sand and crushed stone are used as aggregates. Concrete is used for making mass concrete, reinforced concrete or precast reinforced concrete. Reinforced concrete is combination of steel and concrete.

Binding materials are lime gypsum and cement. They are used for making different mortars for the purpose of binding together masonry units. They are also used for making artificial stones, and as constituents of wall plaster. Gypsum is used nowadays for making gypsum blocks. Cement is used for concrete making. Only high quality cement is employed for reinforced concrete work. Cement is a binding materials made of limestone and clay.

Secondary materials are timber, plastics, glass, some metals and some stones. They are used for the interior finish of the building and secondary work. One of the most widely used secondary materials is plastics. Plastics have good insulating properties and are fire and corrosion resistant. They add colour and beauty to modern houses.

2. Look through the vocabulary:

1) to classify – классифицировать
2) structure – сооружение, конструкция
3) bearing structure – несущая конструкция
4) structural – структурный, строительный, конструктивный
5) natural – естественный
6) artificial stone– искусственный камень
7) clay – глина
8) sand – песок
9) lime – известь
10) timber, wood – лесоматериалы
11) brick – кирпич
12) concrete – бетон
13) cement – цемент
18) hard – твердый
19) hardness – твердость
20) durable – прочный, долговечный
21) durability – долговечность
22) resistance – сопротивление
23) fire-resistant – огнеупорный
24) weather-resistant – устойчивый к влиянию погоды
25) corrosion-resistant – коррозийно-устойчивый
26) strength – крепость, сопротивление
27) mortar – строительный раствор
28) property – свойство
29) to fasten – соединять, скреплять
30) finishing – отделочный
31) ancient – древний

14) steel – сталь
15) plastics – пластмассы
16) binding – вяжущие
17) secondary – второстепенные
32) aggregate – заполнитель
33) crushed stone – щебень
34) to insulate – изолировать
35) light – легкий
36) cheap – дешевый

3. Match the words and word combinations with the Russian equivalents:

bearing structure	долговечность, прочность
resistance	крепость, сопротивление
natural	строительный раствор
artificial	дерево, лесоматериалы
stone	кирпич
clay	вяжущие
sand	отделочный
lime	заполнитель
durability	щебень
strength	несущая конструкция
mortar	сопротивление
timber	естественный
brick	искусственный
binding	камень
finishing	глина
aggregate	песок
crushed stone	известь

4. Made up the sentences:

Brick		sand
Concrete	is made of	steel and concrete
Reinforced concrete	is a mixture of	cement, sand, crushed stone, water
Cement	is combination of	clay and sand
Glass		limestone and clay

5. Describe one of the building materials:

e.g. Brick is artificial stone made of … .
It is used for … .
It gives … .

6. Match the words with their definitions:

stone	heavy firm earth that is soft when wet but becomes hard when baked
sand	wood for building
clay	a piece of rock cut out for building
timber	a baked clay used for building
brick	a material of very small fine grains

concrete	a light artificial material produced chemically
steel	a material made by mixing sand, stone, cement and water
plastic	a metal consisting of iron and other metals

Text 3. On a Construction Site

1. Read and translate the text:

In the construction of any structure the first step is to make a careful survey of the site and to examine the soil. It is also necessary to clear the site, to erect accessive roads, to deliver building materials. After preparatory work the builders lay the foundation and erect the walls, the floors, the roof of a building.

The last stage of construction includes finishing work and installation of various facilities for gas, water and sewage services.

Construction work usually involves a large number of people of various building trades. Bricklayers, plumbers, welders, plasterers, painters, carpenters, engineers work on a construction site.

Most of the site operations are mechanized and reduced to a minimum. Many structures are assembled of precast elements.

Builders use different building machines in the process of construction. Bulldozers level the ground. Cranes hoist structural elements and place them into position. Lorries and trailers deliver building materials to the site.

Bricklayers build the walls and other parts made of bricks. Plumbers fix all the baths, water pipes and the sanitary fittings. Electricians run electric wires. Welders are employed in welding structural elements.

All the doors and window-frames are made by carpenters and put into their places by joiners. Plasterers put plaster or cement over all the walls and ceiling and make them smooth. Painters and decorators carry out finishing work. The building process takes place under supervision of foremen and engineers.

2. Look through the vocabulary:

1) construction site – строительная площадка
2) to survey – производить топографическую съемку
3) to examine – исследовать
4) to clear – очищать
5) soil – почва
6) accessive roads – подъездные пути
7) preparatory work – предварительная работа
8) to lay the foundation – закладывать фундамент
9) to erect – воздвигать, сооружать
10) finishing work – отделочная работа
11) installation – монтаж
12) facilities – удобства, оборудование
13) sewage services – канализация

14) to involve – вовлекать
15) bricklayer – каменьщик
16) plumber – водопроводчик
17) welder – сварщик
18) plasterer – штукатур
19) painter – маляр
20) carpenter – плотник
21) to assemble – собирать
22) precast elements – сборные элементы
23) bulldozer – бульдозер
24) lorry – грузовик
25) trailer –траллер
26) to hoist – поднимать
27) to deliver – доставлять

3. Answer the questions:

1. What are the main stages of construction process?
2. When do the builders lay the foundation?
3. What does the last stage of construction include?
4. Which specialists are involved in the process?
5. Why are most operations reduced to a minimum?
6. What building machines can you see on the site?
7. Who supervises the construction process?

4. Match the words and word combinations with the Russian equivalents:

to survey	монтаж
to examine	удобства, оборудование
accessive roads	канализация
preparatory work	вовлекать
to lay the foundation	собирать
to erect	доставлять
finishing work	производить топографическую съемку
installation	исследовать
facilities	подъездные пути
sewage services	предварительная работа
to involve	закладывать фундамент
to assemble	воздвигать, сооружать
to deliver	отделочные работы

Text 4. Parts of a Building

1. Read and translate the text:

A building consists of the superstructure and the substructure. The part of a building below the ground level is called the substructure and part above the ground the superstructure.

After the excavation is dug for the basement the foundation walls below the ground level are constructed. Then the frame-work is erected. It is the part upon which the stability of the structure depends.

Foundation is the lowest part of the building upon which the superstructure rests. It serves to keep the walls and floors from contact with the soil and prevent the structure from settlement. There are different types of foundations: strip, pile, isolated, raft and others. Mostly they are constructed of in-situ concrete, precast reinforced concrete elements, piles, field stone or brick.

Walls may be external and internal. External walls enclose area and support the weight of floors and roofs. They rest directly on the foundation structure. Internal walls or partitions subdivide the building into rooms. They may or may not support other parts of the building. Wood, brick, stone, concrete and other natural and artificial materials are used for the construction of walls.

Floors divide the building into stories. They may be either of timber or of a fire-resistant material.

Roofs are coverings or upper parts of a building constructed over the enclosed space. They keep out rain, snow and wind and preserve the interior from exposure to the weather. Roofs tie the walls and give strength and firmness to the structure. They may be flat and pitched roofs. The pitch is governed by climatic conditions and by the covering material used. The covering may be of wood, prefabricated units, slates and tiles.

The staircase leads to the upper floors. The staircase consists of stairs (steps). The steps between two landings are a flight of stairs. Wood, stone, concrete and metal may be used for the construction of stairs.

There are doors to provide a passage in and out of a room or a building and windows to admit light and air.

Doors, window frames and even stairs are delivered to the building site on lorries. They are to be fixed in the houses. A lot of houses are built of prefabricated blocks (prefabs).

2. Look through the vocabulary:

1) superstructure – надстройка
2) substructure – нулевой цикл
3) ground level – уровень земли
4) above – над
5) below – ниже, под
6) floor – перекрытие, пол

7) wall – стена
8) roof – крыша
9) basement – подвал, цоколь
10) foundation – фундамент
11) to dig (dug, dug) – копать, рыть
12) to erect – строить, возводить
13) stability – устойчивость
14) to depend upon – зависеть от
15) to rest – опираться
16) to keep from – предохранять
17) soil – почва
18) structure – сооружение
19) to prevent – предотвращать
20) settlement – оседание
21) strip – ленточный
22) pile – свайный
23) isolated – отдельный
24) raft – сплошной
25) in-situ concrete – монолитный бетон
26) mass concrete – монолитный бетон
27) precast reinforced concrete –сборный бетон
28) field stone – валун, булыжник
29) external – внешний
30) internal – внутренний
31) enclose – огораживать
32) area – пространство
33) support – нести
34) weight – вес
35) to divide – делить
36) to subdivide – подразделять
37) store – этаж
38) to cover – покрывать
39) exposure – воздействие
40) to tie – связывать
41) flat – плоский
42) pitched – с наклоном
43) tile – черепица
44) slate – шифер
45) staircase – лестница
46) to consist of – состоять из
47) stairs(steps) – ступеньки
48) stair landing – лестничная площадка
49) flight of stairs –лестничный пролет

50) lorry – грузовик
51) to assemble – собирать

3. Match the words and word combinations with the Russian equivalents:

superstructure	внешний
substructure	внутренний
ground level	воздействие
foundation	с наклоном
settlement	плоский
field stone	лестничный пролет
external	надстройка
internal	нулевой цикл
exposure	уровень земли
pitched	фундамент
flat	оседание
flight of stairs	валун, булыжник

4. Use gerund instead of infinitive:

e.g. Foundation is for … (to prevent the structure from settlement).
Foundation is for preventing the structure from settlement.

1) The foundation is for … (to keep the walls and floor from contact with the soil).
2) External walls are for … (to enclose area and support the weight of floors and roofs).
3) Internal walls are for … (to divide the building into rooms).
4) Floors are for … (to divide the building into stories).
5) Roofs are for … (to keep out rain and snow, to tie walls, to give strength and firmness to the structure).
6) The staircase is for … (to go upstairs).
7) Doors are for … (to provide a passage in and out).
8) Windows are for … (to admit light and air).

ЗАКЛЮЧЕНИЕ

В условиях более плотного сотрудничества с зарубежными государствами иностранный язык становятся всё более востребованным. Он используется на деловых встречах, конференциях, для официальной переписки.

Профильный характер материала, на основе которого построены все тексты и задания методических указаний по подготовке к экзамену, способствует формированию и развитию у студентов словарного запаса на иностранном (английском) языке; навыков чтения оригинальной литературы с целью поиска необходимой информации, перевода с русского языка на английский, подготовки монологических сообщений по заданной тематике.

Представленные методические указания по подготовке к экзамену по дисциплине «Иностранный язык» способствуют совершенствованию исходного уровня владения иностранным языком и достижению необходимого и достаточного уровня коммуникативной компетенции для практического применения иностранного языка в профессиональной деятельности направлений подготовки 08.03.01. «Строительство».

Авторы надеются, что предложенные методические указания к экзамену окажут реальную помощь выпускникам в подготовке к сдаче зачета по дисциплине «Иностранный язык» и в плане деловой коммуникации в сфере профессиональной деятельности.

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АНГЛИЙСКИЙ ЯЗЫК

Учебно-методическое пособие
для подготовки к экзамену
по направлению подготовки 08.03.01 «Строительство»

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