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АНГЛИЙСКИЙ ЯЗЫК ДЛЯ АСПИРАНТОВ

Методические указания
к кандидатскому экзамену по английскому языку
для аспирантов всех специальностей

Воронеж 2012

Министерство образования и науки РФ
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«Воронежский государственный архитектурно-строительный университет»

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УДК 802.0(07)
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Английский язык для аспирантов : метод. указания для подготовки к сдаче кандидатского экзамена по англ. языку для асп. всех специальностей / Воронеж. гос. арх.-строит. ун-т; сост.: З.Е. Фомина, Н.В. Меркулова, М.Г. Кочнева. – Воронеж, 2012. – 29 с.

Содержат требования к кандидатскому экзамену по иностранному (английскому) языку, практические рекомендации по подготовке и оформлению реферата (письменного перевода), а также перечень наиболее часто задаваемых вопросов экзаменаторов с возможными вариантами ответов. Приведены примеры выполнения 3-х заданий экзаменационного билета. В приложении даны тексты по основным направлениям подготовки аспирантов, а также таблицы основных грамматических явлений английского языка.

Предназначены для аспирантов всех специальностей.

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ВВЕДЕНИЕ

Методические указания «Английский язык для аспирантов» включают требования к кандидатскому экзамену, образцы выполнения заданий экзаменационного билета: чтение и реферирование на английском языке оригинального текста по специальности аспиранта, чтение и передача информации на русском языке оригинального текста по специальности и беседа об исследовательской деятельности и научных интересах аспиранта на иностранном языке.

Предложен перечень наиболее типичных вопросов о сфере научных интересов аспиранта с возможными вариантами ответов. Дается образец оформления, а также примерная структура реферата (письменного перевода аутентичных англоязычных научно-технических текстов).

Приложение содержит примеры экзаменационных текстов по основным направлениям подготовки аспирантов, а также базовые явления грамматики английского языка в таблицах.

Предназначены для аспирантов, обучающихся по всем специальностям.

1. ТРЕБОВАНИЯ К КАНДИДАТСКОМУ ЭКЗАМЕНУ

Основная цель курса иностранного (английского) языка для аспирантов - подготовка высокообразованного специалиста, научного работника, владеющего иностранным языком как средством осуществления научной, профессиональной и творческой деятельности в иноязычной сфере, а также средством межкультурной коммуникации в сферах науки, культуры и быта страны изучаемого языка.

Изучения иностранного языка аспирантами всех специальностей имеет целью достижение ими практического владения языком, позволяющего использовать его в научно-исследовательской работе.

1. Лексика: к концу практического курса обучения лексический запас аспиранта должен составлять не менее 5500 лексических единиц с учетом вузовского минимума, включая 500 терминов по специальности аспиранта. Рекомендуется составление терминологического словаря с учетом специфики научной сферы деятельности аспиранта.

2. Грамматика: аспирант должен знать и практически владеть грамматическим минимумом по иностранному языку, необходимым и достаточным для осуществления устной и письменной коммуникации в научно-профессиональной, деловой, бытовой и учебной сферах. Рекомендуется использование в устной и письменной речи сложных грамматических конструкций, характерных для научного стиля.

3. Чтение: аспирант должен уметь читать (и переводить) оригинальную научную литературу по своей специальности (научно-популярные статьи из журналов, газет, интернет-источников и т.д.) с последующей фиксацией полученной информации в виде плана, резюме, сообщения и пр. Предполагает-

ся освоение аспирантами следующих видов чтения: изучающее, ознакомительное, просмотровое, поисковое.

4. Говорение: аспирант должен владеть подготовленной и неподготовленной монологической и диалогической речью, в особенности в рамках научно-профессиональной тематики аспиранта. Предполагается обсуждение профессиональных тем (в т.ч., в ходе публичных выступлений), а также умение общаться на иностранном языке в условиях естественной (бытовой и учебной) коммуникации.

5. Письмо: аспирант должен уметь фиксировать полученную из научно-профессиональных текстов информацию в форме плана, аннотации, резюме, письменного сообщения, реферата. Написание реферата (письменного перевода) является одной из основных задач обучения аспиранта и реализуется на базе работы с текстами научного стиля различных жанров (монографии, статьи и сборники научных трудов, материалы конференций, интернет-форумов и порталов по специальной тематике аспиранта).

6. Фонетика: в ходе практической работы рекомендуется работа по коррекции произношения аспиранта.

7. Культура и традиции стран изучаемого языка: развитие научной мысли в Великобритании, США: великие ученые и открытия.

8. Правила речевого этикета: нормы речевого этикета, публичное выступление по профессиональной тематике аспиранта.

2. СТРУКТУРА КАНДИДАТСКОГО ЭКЗАМЕНА

Кандидатский экзамен по иностранному (английскому) языку проводится в два этапа.

На первом этапе аспирант выполняет письменный перевод (реферат) научного текста по специальности на язык обучения объемом 15000-25000 печатных знаков. Перевод оценивается с точки зрения его адекватности, соответствия нормам русского языка и знания терминологии по данной специальности. Успешное выполнение письменного перевода реферата является условием допуска ко второму (устному) этапу экзамена. Реферат оценивается по зачетной системе.

Второй этап экзамена проводится в устной форме и включает 3 вопроса:

1. Изучающее чтение оригинального текста по специальности аспиранта объемом 2000-3000 печатных знаков. Форма выполнения – полный адекватный письменный перевод на русский язык с использованием словарей. Время выполнения работы – 45-60 минут. Форма проверки – передача основного содержания текста на иностранном языке в виде резюме.

2. Беглое чтение оригинального текста по специальности аспиранта объемом 1000-1500 печатных знаков. Время выполнения – 1-2 минуты. Форма проверки - передача извлеченной информации на родном языке.

3. Беседа на иностранном языке с экзаменаторами, связанная со специальностью и научной деятельностью аспиранта.

Результаты экзамена оцениваются по пятибалльной системе.

Образец экзаменационного билета

1. Read and translate (in writing) Text 1 using dictionaries. Sum it up (in English).
2. Read Text 2 connecting with your profession and retell it in Russian.
3. Speak about the aims and the tasks of your research work.

3. ПРАКТИЧЕСКИЕ РЕКОМЕНДАЦИИ К ОТВЕТАМ НА ВОПРОСЫ ЭКЗАМЕНА

1. Первый вопрос – чтение и перевод оригинального текста по специальности аспиранта. Объем – 2000-3000 печатных знаков. Форма выполнения работы – полный адекватный письменный перевод на русский язык с использованием словарей.

Время выполнения задания – 45-60 минут. Форма проверки – передача основного содержания текста на английском языке в форме резюме, отражающего тематику текста, основную авторскую идею с подведением итогов и выводами из прочитанного.

Пример текста:

Architecture

en.wikipedia.org

Architecture (Latin *architectura*, from the Greek *αρχιτέκτων* – *arkhitekton*, from *αρχι*- "chief" and *τέκτων* "builder, carpenter") can mean:

- The art and science of designing and erecting buildings and other physical structures.
- The practice of an architect, where architecture means to offer or render professional services in connection with the design and construction of a building, or group of buildings and the space within the site surrounding the buildings.
- A general term to describe buildings and other structures.
- A style and method of design and construction of buildings and other physical structures.

A wider definition may comprise all design activity, from the macro-level (urban design, landscape architecture) to the micro-level (construction details and furniture). Architecture is both the process and product of planning, designing and constructing form, space and ambience that reflect functional, technical, social, and aesthetic considerations. Architecture also encompasses the pragmatic aspects of realizing buildings and structures, including scheduling, cost estimating and construction administration.

Architectural works are often perceived as cultural and political symbols and as works of art. Historical civilizations are often identified with their surviving architectural achievements.

Architecture sometimes refers to the activity of designing of any kind of system and the term is common in the information technology world.

Architects plan, design and review the construction of buildings and structures for the use of people. Architects also coordinate and integrate engineering design, which has as its primary objective the creative manipulation of materials and forms using mathematical and scientific principles.

Пример перевода текста:* **Архитектура*

Термин «архитектура» (от латинского «*architectura*»), образован от греческого «*αρχι*» («главный») и «*τεκτων*» («строитель», «плотник») может означать:

- наука и искусство проектирования и возведения зданий и иных сооружений;
- профессиональная деятельность архитектора, заключающаяся в предоставлении комплекса услуг, связанных с проектированием и строительством зданий или групп сооружений с оформлением окружающего пространства;
- общий термин для описания зданий и прочих сооружений;
- стиль и способ проектирования и строительства зданий и иных конструкций.

Более широкое определение может включать любой вид конструктивной деятельности: от макро-уровня (дизайн городской среды, ландшафтная архитектура) до микро-уровня (строительные элементы и фурнитура). Архитектура является одновременно процессом и результатом планирования, создания форм, пространства и среды исходя из функциональных, технических, социальных и эстетических соображений. Архитектура также затрагивает практические аспекты возведения зданий и сооружений, включая график работ, расчет стоимости и соблюдение строительных норм.

Архитектурные творения часто воспринимаются как в качестве культурно-политических символов, так и произведений искусства. Исторические цивилизации зачастую идентифицируются по сохранившимся архитектурным достижениям.

Иногда термин «архитектура» относится к деятельности по проектированию любой системы и является общепринятым в сфере информационных технологий.

Архитекторы планируют, проектируют и пересматривают вопросы строительства зданий и сооружений для удобства людей. Архитекторы также принимают участие в инженерном проектировании, имеющем основной целью творческие преобразования материалов и форм с использованием математических расчетов и научных принципов.

ФРАЗЫ ДЛЯ РЕЗЮМИРОВАНИЯ ТЕКСТА

The article goes on to say that...

I'd like to speak about...
I'm going to speak about...
First of all, I'd like to tell you a few words about...
And now some words about...
It's necessary to say that...
It should be noted / said / stressed that...
I'd also like to add that...
I think...
To my mind...
As you know...
In conclusion I can say that...
In conclusion it should be said that...
In conclusion I'd like to say that...

Пример резюмирования текста на английском языке

The article I am going to review is taken from the Internet. It is called Architecture. ***It deals with*** the definition of Architecture as a multifunctional term.

First of all, architecture can mean the art of designing and erecting different types of buildings and structures. It can also mean the practice of an architect in planning, designing and constructing activities.

It should be said that at the same time it can refer to a style and method of designing and constructing buildings and other structures.

The article goes on to say that architectural works are often perceived as cultural and political symbols and as works of art.

I'd like to add that the term architecture is common in the information technology world.

It should be stressed that architects plan, design and review the construction of buildings and structures for the use of people.

In conclusion I'd like to say that architecture is not only the process but also the product of planning, designing and constructing form, space and ambience which reflect functional, social and aesthetic considerations.

2. Второй вопрос – беглое чтение оригинального текста по специальности аспиранта. Объем – 1000-1500 печатных знаков. Время выполнения – 2 минуты. Форма проверки – передача содержания на русском языке.

Пример текста:

Skyscraper

www.wikipedia.org

A skyscraper is a tall, continuously habitable building of many stories, often designed for office and commercial use. There is no official definition or height above which a building may be classified as a skyscraper. One common feature is that skyscrapers tend to make use of a steel framework structure from which walls

are suspended, rather than having load-bearing walls as seen in conventional buildings.

As there is no official definition of what constitutes a skyscraper, a relatively small building may be considered one if it protrudes well above its built environment and changes the overall skyline. The maximum height of structures has progressed historically with building methods and technologies. 'Supertall' has arisen as a contemporary expression for exceptionally tall buildings, although again there is no formal definition.

The Emporis Standards Committee defines a high-rise building as "a multi-storey structure between 35–100 metres tall, or a building of unknown height from 12–39 floors" and a skyscraper as "a multi-storey building whose architectural height is at least 100 metres." Some structural engineers define a highrise as any vertical construction for which wind is a more significant load factor than earthquake or weight. Note that this criterion fits not only high-rises but some other tall structures, such as towers.

The word *skyscraper* often carries a connotation of pride and achievement. The skyscraper, in name and social function, is a modern expression of the age-old symbol of the world center or *axis mundi*: a pillar that connects earth to heaven and the four compass directions to one another.

Пример передачи общего содержания текста на русском языке

В данной статье речь идет о небоскребах и высотных зданиях.

Небоскреб представляет собой пригодное для жилья и использования высотное здание, часто предназначенное под офисы и для иных коммерческих целей.

Не существует четкого определения, какой именно высоты здание считается небоскребом. Однако общим признаком подобных конструкций является наличие стального каркаса, на котором крепятся возвышающиеся несущие стены. За неимением четких критериев, даже сравнительно невысокое здание может выглядеть небоскребом, если оно выделяется на фоне окружающих его построек.

С развитием технологий и методов строительства высота сооружений постоянно увеличивалась в ходе истории. По стандартам комитета всемирной организации «Emporis», высотными считаются многоэтажные здания от 35 до 100 метров высотой, либо 12-39-этажные здания любой высоты, а небоскребами являются многоэтажные сооружения свыше 100 метров.

В качестве вывода можно констатировать тот факт, что небоскребы являются синонимом гордости и достижений современности и часто устанавливаются в знаменательных местах («ось земли»).

3. Третий вопрос – беседа на английском языке с экзаменаторами, связанная со специальностью и научной деятельностью аспиранта.

Рекомендуется подготовить рассказ-представление о себе, своей специальности (образовании), рассказать о научном руководителе, о сфере научных интересов и направлении исследования, обозначить примерную тему диссертации и обосновать актуальность проводимой работы, а также практическое применение предполагаемых результатов исследования.

Пример рассказа о научных интересах аспиранта

1. What is your name?

-My name is Ivan Ivanovich Ivanov.

2. What educational institution did you graduate from? When?

-I graduated from Voronezh State University of Architecture and Civil Engineering in 20...

3. What is your speciality?

-My speciality is .../ My profession is ...

4. Why did you decide to take a post-graduate course?

-I decided to take a post graduate-course because I had been interested in science since my 3-d year at the University / because scientific approach is very important in my profession.

5. What is the subject of your future scientific research?

-The subject of my scientific research is ...

-My future scientific research is devoted to the problem of ...

- My future scientific research deals with the problem of ...

6. Who is your scientific supervisor?

-My scientific supervisor is Ivan Petrovich Petrov, Professor, Doctor of technical/economic sciences, Head of the Chair of ... / Head of the Department of ...

-He has got a lot of publications devoted to the problem of ...

7. Have you ever participated in any scientific conferences?

-Yes, I've participated in many conferences devoted to the most actual problems of economy/physics/geodesy/hydrology etc.

-Not yet, but I hope, together with my supervisor, I'll prepare some reports for scientific conferences/I'll take part in several conferences in the near future.

8. Do you have any publications?

-Yes, I've got some publications connected with my research.

- Not yet, but I hope, together with my supervisor, I'll prepare some publications, they will be devoted to my research.

9. What methods are you going to use in your investigation?

-Together with my supervisor we are going to apply such methods as theoretical, experimental, practical and computational methods because they will help me to complete my research.

10. What will your scientific research give the world? In what way can your investigation/research be useful to ... science?

-I think / I hope / I dare say that the problem of our scientific research is very urgent and our scientific research will be very useful for ... / it will help people in the field of ...

ПРИМЕРНЫЙ ПЕРЕЧЕНЬ ВОПРОСОВ О СПЕЦИАЛЬНОСТИ И НАУЧНОЙ ДЕЯТЕЛЬНОСТИ АСПИРАНТА

1. Who is your scientific supervisor and what is his/her contribution to science?

My scientific supervisor is E.I. Shmitko. He is doctor of technical science, professor, head of the chair of "Technology of Building Materials and Structures". He has many publications devoted to the problem of cellular concrete. My scientific supervisor is considered to be a competent specialist. He is the man to be relied on.

2. What does your scientific work deal with? Or: What problem do you investigate?

My scientific work deals with the problem concerning structure of cellular concrete. Or: I'm going to investigate the problem

3. What can you say about your scientific work?

While speaking about my scientific work it should be said that it is very important for building industry.

It is common knowledge that cellular concrete is widely used in construction. But technology of cellular concrete has not fully investigated several operations that result in some variable properties of concrete.

It should be stressed that it is the density that determines the properties of cellular concrete.

The aim of my research is to control the characteristics of cellular concrete structures. I will determine the possibilities of controlling the characteristics of cellular concrete structures by means of different factors.

I'm going to carry out the theoretical analysis of experimental data. I will also deliver some recommendations for producing cellular concrete with better properties and characteristics.

In conclusion I'd like to say that my recommendations will be useful for enterprises producing products from cellular concrete.

5. Do you need any special equipment for fulfilling your investigation?

For fulfilling my investigation I will use different measuring devices, plants, tools and computer programs.

6. What illustrations are you going to prepare to demonstrate the results of your investigation?

To demonstrate the results of my investigation I am going to prepare different tables, diagrams, graphs, drawings because they will help me to convincingly and precisely prove my conclusions.

7. What conclusions will you make if the results of your research are positive/negative?

If the results of my research are positive I will make the conclusion that I have managed to increase the quality of cellular concrete and to develop a new complex method for its estimation.

If the results of my research are negative I will make the conclusion that I have to further investigate the problem under other conditions and with other parameters.

8. How do you plan your research?

First of all, I make up the plan of my research. Then I analyze literature concerning the field of my research both in Russian and in English, sum up the information obtained, carry out my experiment, make conclusions and apply the results of my research in practice.

9. What have you already managed to do?

I have already managed to make up the plan of my research, to analyze some literature both in English and in Russian, and to prepare an article dealing with my research for publication.

10. What points of your plan have you failed to fulfill?

I have failed to make my experiment, to make conclusions and to apply the results of my research in practice.

11. How will you continue your investigation?

I will continue to analyze literature concerning my research. I will carry out my experiment, make conclusions and apply the results of my research in practice.

12. How many English publications important for your research have you found?

I have found about twenty English publications important for my research and I have already analyzed all of them.

13. How many key terms have you selected from the English publications?

I have selected about 50 key terms from the English publications. The most important of them are: cellular concrete, foam generator, foam liquid concentrate and others.

14. What points of view expressed in the publications do you criticize?

It should be said that at present I only analyze literature and get acquainted with different points of view, so I don't criticize anything.

15. Who are the best informed scientists in the field of your research?

The best informed scientists in the field of my research are Ye.M. Chernyshov, A.N. Fedin, Ye.I Shmitko, J. Gonsales, Sh. Wood and others.

16. How long can it take you to complete your research?

I think that it can take me about two years to complete my research.

17. By what time/by when will you have completed your research?

I hope that I will have completed my research by the end of 2015.

18. What contribution may your research make into science?

I think that the recommendations done by me will be useful for building industry.

19. Did you take part in scientific conferences?

Yes, I did. I took part in scientific conferences held in our University and in some other institutions.

20. Did you make any reports? What were they devoted to? Were your reports a success?

Yes, I did. I made some reports. They were devoted to the problem of my research. I think that my reports were a success because there were a lot of questions and I answered all of them.

21. Are you going to take part in scientific conferences in the future?

There is no doubt about it. I will certainly take part in scientific conferences and I will make reports devoted to the theme of my research.

21. Have you got any publications?

Not yet. But in the near future I am going to prepare some articles for publication. They will be devoted to the theme of my research.

Or: Yes, I have. I have got two publications devoted to the theme of my investigation. They were published in the proceedings of our University.

22. What is the purpose of your publications?

The main purpose of my publications is to attract attention of scientists to the problem of my research and to make a certain contribution to science.

23. How long have you been working at your research?

I have been working at my research for about two years/ since 2010.

24. By when had you completed your précis?

I had completed my précis by the end of April/September.

25. Speak about your précis?

While speaking about my précis it should be said that I have analyzed about 20 papers to prepare it. It consists of an introduction, seven main parts, professional vocabulary and references. The main parts deal with the history of cellular concrete and the technology of its production. Professional vocabulary contains 80 key-terms connected with problem being investigated. References have 10 names.

26. What do you think the social role of your investigation is?

In my opinion, my investigation will help to improve the quality of production, to reduce a total cost of housing construction and to provide people with harmless and safe houses to live in.

27. Why are you interested in such a problem?

I am interested in such a problem because I consider it to be urgent and timely but not thoroughly investigated yet.

28. What kind of sources do you prefer to use for the theoretical substantiation/grounds of your research?

For the theoretical grounds of my research I prefer to use some works of my scientific supervisor, different publications of Russian and foreign scientists and the materials presented by the Internet.

29. Could you speak about the historical background of your problem?

As far as I know some aspects of this problem have been already investigated both by Russian and foreign scientists but still some of them should be further studied. So, my task is to fill in this gap, and I will do my best to accomplish it.

30. Can you say now what structure of your dissertation will be? How many chapters will it consist of?

Now I can't exactly say anything about the structure of my dissertation. But I think that it will consist of three chapters, conclusions and Appendix. We will decide this problem with my scientific supervisor together. I am sure he/she will help me.

ЗАКЛЮЧЕНИЕ

Данные методические указания призваны помочь аспирантам в подготовке к сдаче кандидатского экзамена по иностранному (английскому) языку и в написании реферата по прочитанной литературе.

Работа с настоящими методическими указаниями способствует развитию основных навыков по всем видам речевой деятельности, необходимых и достаточных для осуществления устной и письменной коммуникации, а также навыков и умений перевода специальных научных текстов, что соответствует требованиям к кандидатскому экзамену по иностранному языку.

Рекомендуются к использованию как для самостоятельной работы, так и для работы под руководством преподавателя.

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Приложение 1

**Примеры научно-технических текстов
по основным направлениям подготовки аспирантов**

Text 1: Portland Cement Production

<http://www.cement.org/basics>

Two different processes, "dry" and "wet," are used in the manufacture of portland cement.

When rock is the principal raw material, the first step after quarrying in both processes is the primary crushing. Mountains of rock are fed through crushers capable of handling pieces as large as an oil drum. The first crushing reduces the rock to a maximum size of about 6 inches. The rock then goes to secondary crushers or hammer mills for reduction to about 3 inches or smaller.

In the wet process, the raw materials, properly proportioned, are then ground with water, thoroughly mixed and fed into the kiln in the form of a "slurry" (containing enough water to make it fluid). In the dry process, raw materials are ground, mixed, and fed to the kiln in a dry state. In other respects, the two processes are essentially alike.

The raw material is heated to about 2,700 degrees F in huge cylindrical steel rotary kilns. Kilns are frequently as much as 12 feet in diameter - large enough to accommodate an automobile and longer in many instances than the height of a 40-story building. Kilns are mounted with the axis inclined slightly from the horizontal. As the material moves through the kiln, certain elements are driven off in the form of gases. The remaining elements unite to form a new substance with new physical and chemical characteristics. The new substance, called clinker, is formed in pieces about the size of marbles.

Clinker is discharged red-hot from the lower end of the kiln and generally is brought down to handling temperature in various types of coolers. The heated air from the coolers is returned to the kilns, a process that saves fuel and increases burning efficiency.

Text 2: A central heating system

en.wikipedia.org/wiki/Central_heating

A central heating system provides warmth to the whole interior of a building (or portion of a building) from one point to multiple rooms. When combined with other systems in order to control the building climate, the whole system may be a HVAC (heating, ventilation and air conditioning) system.

Central heating differs from local heating in that the heat generation occurs in one place, such as a furnace room in a house or a mechanical room in a large building (though not necessarily at the "central" geometric point). The most common method of heat generation involves the combustion of fossil fuel in a furnace or boiler. The resultant heat then gets distributed: typically by forced-air through ductwork, by water circulating through pipes, or by steam fed through pipes. In-

creasingly, buildings utilize solar-powered heat sources, in which case the distribution system normally uses water circulation.

In much of northern Europe and in urban portions of Russia, where people seldom require air conditioning in homes due to the temperate climate, most new housing comes with central heating installed. Such areas normally use gas heaters, district heating, or oil-fired systems. In the western and southern United States natural-gas-fired central forced-air systems occur most commonly; these systems and central-boiler systems both occur in the far northern regions of the USA. Steam-heating systems, fired by coal, oil or gas, feature in the USA, Russia and Europe: primarily for larger buildings. Electrical heating systems occur less commonly and are only practical with low cost electricity or when geothermal heat pumps are used. Considering the combined system of central generating plant and electric resistance heating, the overall efficiency will be less than for direct use of fossil fuel for space heating.

Electric heating or resistance heating converts electricity directly to heat. Electric heat is often more expensive than heat produced by combustion appliances like natural gas, propane, and oil. Electric resistance heat can be provided by base-board heaters, space heaters, radiant heaters, furnaces, wall heaters, or thermal storage systems.

In larger commercial applications, central heating is provided through an air handler which incorporates similar components as a furnace but on a larger scale.

Text 3: Types of ventilation

[en.wikipedia.org/wiki/Ventilation_\(architecture\)](https://en.wikipedia.org/wiki/Ventilation_(architecture))

Mechanical or forced ventilation: through an air handling unit or direct injection to a space by a fan. A local exhaust fan can enhance infiltration or natural ventilation, thus increasing the ventilation air flow rate.

Natural ventilation occurs when the air in a space is changed with outdoor air without the use of mechanical systems, such as a fan. Most often natural ventilation is assured through operable windows but it can also be achieved through temperature and pressure differences between spaces. Open windows or vents are not a good choice for ventilating a basement or other below ground structure. Allowing outside air into a cooler below ground space will cause problems with humidity and condensation.

Mixed Mode Ventilation or Hybrid ventilation: utilises both mechanical and natural ventilation processes. The mechanical and natural components may be used in conjunction with each other or separately at different times of day. The natural component, sometimes subject to unpredictable external weather conditions may not always be adequate to ventilate the desired space. The mechanical component is then used to increase the overall ventilation rate so that the desired internal conditions are met. Alternatively the mechanical component may be used as a control measure to regulate the natural ventilation process, for example, to restrict the air change rate during periods of high wind speeds.

Text 4: Key elements of a fire safety policy

en.wikipedia.org/wiki/Fire_safety

Fire safety refers to precautions that are taken to prevent or reduce the likelihood of a fire that may result in death, injury, or property damage, alert those in a structure to the presence of a fire in the event one occurs, better enable those threatened by a fire to survive, or to reduce the damage caused by a fire. Fire safety measures include those that are planned during the construction of a building or implemented in structures that are already standing, and those that are taught to occupants of the building.

Threats to fire safety are referred to as *fire hazards*. A fire hazard may include a situation that increases the likelihood a fire may start or may impede escape in the event a fire occurs.

Fire safety is often a component of building safety. Those who inspect buildings for violations of the Fire Code and go into schools to educate children on Fire Safety topics are fire department members known as *fire prevention officers*. The Chief Fire Prevention Officer or Chief of Fire Prevention will normally train newcomers to the Fire Prevention Division and may also conduct inspections or make presentations.

Text 5: The automotive Industry

ru.wikipedia.org/wiki/English

The automotive industry designs, develops, manufactures, markets, and sells the world's motor vehicles.

About 250 million vehicles are in use in the United States. Around the world, there were about 806 million cars and light trucks on the road in 2007; they burn over 260 billion gallons of gasoline and diesel fuel yearly. The numbers are increasing rapidly, especially in China and India. In the opinion of some, urban transport systems based around the car have proved unsustainable, consuming excessive energy, affecting the health of populations, and delivering a declining level of service despite increasing investments. Many of these negative impacts fall disproportionately on those social groups who are also least likely to own and drive cars. The sustainable transport movement focuses on solutions to these problems.

With rapidly rising oil prices, industries such as the automotive industry, are experiencing a combination of pricing pressures from raw material costs and changes in consumer buying habits. The industry is also facing increasing external competition from the public transport sector, as consumers re-evaluate their private vehicle usage.

The automotive market is formed by the demand and the industry. The European automotive market has always boasted a higher number of smaller cars than the United States. With the high fuel prices and the world petroleum crisis, the United States may see its automotive market become more like the European market with fewer large vehicles on the road and more small cars. For luxurious cars, with the current volatility in oil prices, going for smaller cars is not only smart, but

also trendy. And because fashion is of high importance with the upper classes, the little green cars with luxury trimmings become quite plausible.

Text 6: Road construction

en.wikipedia.org/wiki/Road

Road construction requires the creation of a continuous right-of-way, overcoming geographic obstacles and having grades low enough to permit vehicle or foot travel and may be required to meet standards set by law or official guidelines. The process is often begun with the removal of earth and rock by digging or blasting, construction of embankments, bridges and tunnels, and removal of vegetation (this may involve deforestation) and followed by the laying of pavement material. A variety of road building equipment is employed in road building.

After design, approval, planning, legal and environmental considerations have been addressed alignment of the road is set out by a surveyor. Roads are designed and built for primary use by vehicular and pedestrian traffic. Storm drainage and environmental considerations are a major concern. Drainage systems must be capable of carrying the ultimate design flow from the upstream catchment with approval for the outfall from the appropriate authority to a watercourse, creek, river or the sea for drainage discharge.

A borrow pit (source for obtaining fill, gravel, and rock) and a water source should be located near or in reasonable distance to the road construction site. Approval from local authorities may be required to draw water or for working (crushing and screening) of materials for construction needs. The top soil and vegetation is removed from the borrow pit and stockpiled for subsequent rehabilitation of the extraction area. Side slopes in the excavation area not steeper than one vertical to two horizontal for safety reasons.

Old road surfaces, fences, and buildings may need to be removed before construction can begin. Trees in the road construction area may be marked for retention. These protected trees should not have the topsoil within the area of the tree's drip line removed and the area should be kept clear of construction material and equipment. Compensation or replacement may be required if a protected tree is damaged. Much of the vegetation may be mulched and put aside for use during reinstatement. The topsoil is usually stripped and stockpiled nearby for rehabilitation of newly constructed embankments along the road. Stumps and roots are removed and holes filled as required before the earthwork begins. Final rehabilitation after road construction is completed will include seeding, planting, watering and other activities to reinstate the area to be consistent with the untouched surrounding areas.

Text 7: Artificial intelligence

http://en.wikipedia.org/wiki/Artificial_intelligence

Artificial intelligence (AI) is the intelligence of machines and the branch of computer science that aims to create it. AI textbooks define the field as "the study and design of intelligent agents" where an intelligent agent is a system that perceives its environment and takes actions that maximize its chances of success. John

McCarthy, who coined the term in 1956, defines it as "the science and engineering of making intelligent machines."

The field was founded on the claim that a central property of humans, intelligence—the sapience of *Homo sapiens*—can be so precisely described that it can be simulated by a machine. This raises philosophical issues about the nature of the mind and the ethics of creating artificial beings, issues which have been addressed by myth, fiction and philosophy since antiquity. Artificial intelligence has been the subject of optimism, but has also suffered setbacks and, today, has become an essential part of the technology industry, providing the heavy lifting for many of the most difficult problems in computer science.

AI research is highly technical and specialized, deeply divided into subfields that often fail to communicate with each other. Subfields have grown up around particular institutions, the work of individual researchers, the solution of specific problems, longstanding differences of opinion about how AI should be done and the application of widely differing tools. The central problems of AI include such traits as reasoning, knowledge, planning, learning, communication, perception and the ability to move and manipulate objects. General intelligence (or "strong AI") is still among the field's long term goals.

Text 8: Production, cost, and efficiency

en.wikipedia.org

In microeconomics, production is the conversion of inputs into outputs. It is an economic process that uses inputs to create a commodity for exchange or direct use. Production is a flow and thus a rate of output per period of time. Distinctions include such production alternatives as for consumption (food, haircuts, etc.) vs. investment goods (new tractors, buildings, roads, etc.), public goods (national defense, small-pox vaccinations, etc.) or private goods (new computers, bananas, etc.), and "guns" vs. "butter".

Opportunity cost refers to the economic cost of production: the value of the next best opportunity foregone. Choices must be made between desirable yet mutually exclusive actions. It has been described as expressing "the basic relationship between scarcity and choice." The opportunity cost of an activity is an element in ensuring that scarce resources are used efficiently, such that the cost is weighed against the value of that activity in deciding on more or less of it. Opportunity costs are not restricted to monetary or financial costs but could be measured by the real cost of output forgone, leisure, or anything else that provides the alternative benefit (utility).

Inputs used in the production process include such primary factors of production as labour services, capital (durable produced goods used in production, such as an existing factory), and land (including natural resources). Other inputs may include intermediate goods used in production of final goods, such as the steel in a new car.

Economic efficiency describes how well a system generates desired output with a given set of inputs and available technology. Efficiency is improved if more

output is generated without changing inputs, or in other words, the amount of "waste" is reduced. A widely-accepted general standard is Pareto efficiency, which is reached when no further change can make someone better off without making someone else worse off.

Much applied economics in public policy is concerned with determining how the efficiency of an economy can be improved. Recognizing the reality of scarcity and then figuring out how to organize society for the most efficient use of resources has been described as the "essence of economics," where the subject "makes its unique contribution."

Text 9: Public relations (PR)

[en.wikipedia.org>Public relations](https://en.wikipedia.org/Public_relations)

Public relations (PR) is the actions of a corporation, store, government, individual, etc., in promoting goodwill between itself and the public, the community, employees, customers, etc.

An earlier definition of public relations, by The first World Assembly of Public Relations Associations, held in Mexico City, in August 1978, was "the art and social science of analyzing trends, predicting their consequences, counseling organizational leaders, and implementing planned programs of action, which will serve both the organization and the public interest." Others define it as the practice of managing communication between an organization and its publics.

The European view of public relations notes that besides a relational form of interactivity there is also a reflective paradigm that is concerned with publics and the public sphere; not only with relational, which can in principle be private, but also with public consequences of organizational behaviour. A much broader view of interactive communication using the Internet, as outlined by Phillips and Young in *Online Public Relations Second Edition* (2009), describes the form and nature of Internet-mediated public relations. It encompasses social media and other channels for communication and many platforms for communication such as personal computers (PCs), mobile phones and video game consoles with Internet access. The increasing use of the mentioned technologies give the media a democratisation power and thus, aid to the demystification of subjects.

Public relations is used to build rapport with employees, customers, investors, voters, or the general public. Almost any organization that has a stake in how it is portrayed in the public arena employs some level of public relations. There are a number of public relations disciplines falling under the banner of corporate communications, such as analyst relations, media relations, investor relations, internal communications and labor relations. Most of them include the aspect of peer review to get liability.

Приложение 2
Образец оформления титульного листа реферата

Министерство образования и науки РФ
Федеральное государственное бюджетное учреждение
высшего профессионального образования
«Воронежский государственный архитектурно-строительный университет»

Кафедра иностранных языков
Кафедра [экономики и управления]

Реферат:

«[тема реферата]»

Выполнил: аспирант И.И. Иванов

Научный руководитель: д.ф.н., профессор И.И. Петров

Принял: д.ф.н., профессор А.Н. Светлова

Консультант по английскому языку: к.ф.н., доцент А.И. Маркова

Воронеж 2012

Образец оформления титульного листа реферата

Ministry of Education and Science of the Russian Federation
Federal State Budget-Financed Establishment
of Supreme Professional Education
Voronezh State University of Architecture and Civil Engineering

Chair of Foreign Languages
Chair of [Economy and Management]

PRECIS
on the theme: «[...] »

Fulfilled by: a post-graduate I.I. Ivanov

Scientific supervisor: Doctor of technical science,
professor I.I. Petrov

Adopted by: Doctor of Philology,
professor A.N. Svetlova

Consultant in English: Candidate of Philological
science, associate professor A.I. Markova

Voronezh 2012

Примерная структура реферата

1. **Содержание** – содержание на русском языке
2. **Contents** – содержание на английском языке
3. **Аннотация** – аннотация на русском языке (объем 10-12 строк)
4. **Abstract** – аннотация на английском языке (объем 10-12 строк)
5. **Введение** – введение в проблематику реферата на русском языке (объем примерно 1 страница)
6. **Introduction** – введение в проблематику реферата на английском языке (объем примерно 1 страница)
7. **Глава I, II, III** – основная часть реферата: перевод с английского языка на русский аутентичного научно-технического текста по специальности аспиранта
8. **Chapter I, II, III** – аутентичный научно-технический текст по специальности аспиранта на английском языке
9. **Заключение** – выводы на русском языке (объем примерно 1 страница)
10. **Conclusion** – выводы на английском языке (объем примерно 1 страница)
11. **References** / Библиографический список – список используемых источников: научные книги, монографии, статьи, интернет-ресурсы, словари
12. **Professional Vocabulary** / Терминологический тезаурус – словарь профессиональных терминов (оформляется в соответствии с английским алфавитом с указанием части речи: [n] – существительное, [adj] – прилагательное, [v] – глагол)
13. **Authentic Materials** / Аутентичные материалы – оригинал/ксерокопия/скан/скрин-шот текстов на английском языке
14. **Supplement** – приложение
15. **Table** – таблица

**Образец
оформления содержания реферата на английском языке**

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**Образец
оформления аннотации к реферату на английском языке**

Abstract

The précis deals with the problem of quality control in the sphere of building construction. This problem seems to be of great importance nowadays because it hasn't been thoroughly investigated yet.

The first chapter is devoted to the historical background of the theoretical approaches in the field of quality management. The second part contains the practical analysis of existing methods of quality control in the constructional sphere. The third chapter is aimed to sum up theoretical and practical experience of the carried out investigation. A lot of graphs and tables are given to illustrate the results of the work.

In conclusion the authors state that the implementation of quality control system appears to be one of most challenges in the building industry.

**Образец
оформления «Введения» в реферате на английском языке**

Introduction

Construction has traditionally been one of the largest sectors of economy solving many problems of public nature and social issues: GDP growth, civil engineering and housing repairs. Therefore, it is important that the industry is functioning effectively, in particular, due to the process of implementation of quality management system.

The level of competition in this dynamically growing industry is very high.

The quality management system in construction is a product of our time. This is a modern tool to ensure quality performance of construction, excluding all sorts of risks that threaten the safe operation of constructed facilities.

Quality control and safety represent increasingly important concerns for project managers. Defects or failures in constructed facilities can result in very large costs. Good project managers try to ensure that the job is done right and that no major accidents occur on the project. Implementing a quality management system, such as, for example, the integrated management system, in a building firm has a positive effect on the image of the organization.

With the attention to conformance as the measure of quality during the construction process, the specification of quality requirements in the design and contract documentation becomes extremely important. Quality requirements should be clear and verifiable, so that all parties in the project can understand the requirements for conformance. Safety during the construction project is also influenced in large part by decisions made during the planning and design process.

This report is focused on the creation and implementation of quality systems in constructional organizations as an effective mechanism to ensure competitiveness in the market.

Образец оформления
«Терминологического тезауруса» в реферате на английском языке

Professional vocabulary / Терминологический тезаурус

A

Automatic [adj.] – автоматический

B

Build [v] – строить

Building materials [n, pl.] – строительные материалы

Button [n] – кнопка

C

Control [v] – управлять

Concentration [n] – концентрация

D

Define [v] – определять

Degree [n] – степень

E

Electromagnetic [adj.] – электромагнитный

Equip [v] – оборудовать

Efficiency [n] – эффективность

F

Firm [n] – фирма, предприятие и т.д.

Приложение 3
Элементы грамматики английского языка в таблицах

MODAL VERBS

прошедшее	настоящее	будущее	значение
could was/were able to	can to be able to	--- will be able to	физическая возможность, способность
might was/were allowed to	may to be allowed to	--- will be allowed to	разрешение, предположение
---	must	---	непреложное дол- женствование
---	ought (to)	---	долженствование (в мягкой форме), со- вет
had (got) to was/were to	to have (got) to to be to	will have (got) to ---	подчинение зако- нам, правилам
was/were obliged to	to be obliged to	will be obliged to	вынужденность действия (по распи- санию)
---	should	---	официальное обяза- тельство
---	should	---	долженствование (в мягкой форме), со- вет
would	---	---	субъективное пред- положение, намере- ние

СИСТЕМА ВРЕМЕН АНГЛИЙСКОГО ГЛАГОЛА

INDEFINITE ACTIVE		
Past	Present	Future
1) V+ed (правильные гла- голы) 2) 2ф. V (неправильные глаголы)	-V -V+s – 3л.ед.ч.	-shall+ V -will+
1) I published an article 2) I took part in the confer- ence	-I work at the bank -S/he likes the work	I'll be at home tomor- row They'll take English courses

INDEFINITE PASSIVE: to be+3φ.V		
Past	Present	Future
-was+ 3φ.V -were+	-am+ -is+ 3φ.V -are+	-shall be+ 3φ.V -will be+
-It was made of steel and concrete -The books were written in 2005	-The article is devoted to the problem of demographic crisis	-The problem will be discussed next time
PERFECT ACTIVE: to have+V+ed/3φ.V		
Past	Present	Future
had+	-have+ -has+	-shall have+ -will
By 2010 I had studied all the material on the problem	I've already translated this article He has already published some articles	By the end of the term you'll have studied the material
PERFECT PASSIVE: to have been+3φ.V		
Past	Present	Future
had been+	-have been+ -has	-shall have been+ -will
The problem had been discussed since 1990-s	The problem has already been discussed	The problem will have been discussed by the end of the conference
CONTINUOUS ACTIVE: to be+V-ing		
Past	Present	Future
-was+ -were+	-am+ -is+ -are+	-shall be+ -will
When you called I was working on a computer	I'm working at the problem of fireproof materials	Tomorrow we'll be working at our new article

CONTINUOUS PASSIVE: to be+being+3φ.V		
Past	Present	Future
-was being+ -were	-am -is being+ -are	X
The structure was being reconstructed since the last century	The structure is being built by Turkish specialists	X
PERFECT CONTINUOUS: Perfect to be+V-ing		
Past	Present	Future
had been+	-have been+ -has	-shall have been+ -will
He had been reading this grammar before he passed his exam	I have been reading this grammar material for 20 minutes	By 2008 scientists will have been studying the problem for over 5 years

НЕЛИЧНЫЕ ФОРМЫ ГЛАГОЛА

1.Gerund – сочетает свойства глагола и существительного: V+ing

Герундий непереходных глаголов

	Active
Non-perfect	V+ing: going
Perfect	having+3φV: having gone

Герундий переходных глаголов

	Active	Passive
Non-perfect	V+ing: writing	being+3φV: being written
Perfect	having+3φV: having written	having been+3φV: having been written

1. Participle I: -ing-формы – причастие настоящего времени

	Active	Passive
одновременность	V+ing	V+being+3φV
	the scientists discussing the problem	the problem being discussed
предшествование	having+3φV	having been+3φV
	the scientist having investigated the problem	the problem having been investigated

2. Participle II: -ed-формы (3φV - для неправильных V) – причастие прошедшего времени

	Active	Passive
одновременность	X	X
предшествование	X	+ed / 3φV (неправильные V)
		the problem investigated / the article written

3. Инфинитив: to-формы – неопределенная форма глагола

	Active	Passive
одно- времен- ность	-to+V -to be+V+ing	to be+3φV
	-I have an article to translate -He is known to be working at the problem	The work seems to be done
пред- шество- вание	-to have been+V+ing -to have been+3φV	to have been+3φV
	-He appears to have been working at the problem for many years -He seems to have been experienced in this field	The theme is known to have been worked out

Глаголы, наиболее употребляемые в инфинитивных конструкциях

Passive	-S/he, it is -They are	known expected said reported assumed stated	to	известно ожидают говорят сообщают полагают утверждают	что...
Active	S/he, it	happens seems appears proved	to	случается кажется оказалось по-видимому	что...

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АНГЛИЙСКИЙ ЯЗЫК ДЛЯ АСПИРАНТОВ

Методические указания
к кандидатскому экзамену по английскому языку
для аспирантов всех специальностей

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