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высшего образования

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«УТВЕРЖДАЮ»

Первый проректор И.Г. Гайрабеков 20<u>10</u>г.

### РАБОЧАЯ ПРОГРАММА

дисциплины

«Иностранный язык (английский)»

Направление подготовки

09.06.01 Информатика и вычислительная техника

Профиль подготовки

«Автоматизация и управление технологическими процессами и производствами (промышленность)»

Квалификация выпускника

Исследователь. Преподаватель – исследователь.

#### 1. Цель и задачи дисциплины

#### 1.1. Цель дисциплины:

Основной целью изучения иностранного языка аспирантами является формирование коммуникативной компетенции, позволяющей использовать иностранный язык в научной работе.

#### 1.2. Задачи дисциплины:

- формирование фонетических, лексических, грамматических, переводческих, аналитических навыков, умений рассуждать, анализировать, высказывать мнение по тексту.
- развитие языковых, познавательных способностей, готовности к коммуникации на основе предложенного материала.
- расширение лингвистических, культурологических знаний, развитие умений выделять основные проблемы.
- -практическое использование приобретенных знаний в диалогическом и монологическом высказывании.

# 2.Место дисциплины в структуре основной профессиональной образовательной программы

Дисциплина «Иностранный язык» относится к базовой части цикла дисциплин аспирантуры, направленная на подготовку аспирантов к научно-исследовательской деятельности и формированию необходимых компетенций.

# 3. Требования к уровню подготовки аспиранта, завершившего изучение данной дисциплины

Процесс изучения дисциплины направлен на формирование следующих универсальных компетенций:

- готовность участвовать в работе российских и международных исследовательских коллективов по решению научных и научно-образовательных задач (УК-3);
- готовность использовать современные методы и технологии научной коммуникации на государственном и иностранном языках (УК-4).

В результате освоения дисциплины обучающийся должен

#### Зиять.

- базовую лексику общего языка и терминологию своей специальности; **Уметь:** 

- читать на иностранном языке художественную и научную литературу и тексты общественно политического и делового характера, переводить тексты по специальности со словарем;
  - вести беседу на профессиональные и бытовые темы;
- подготовить письменное и устное сообщение на профессионально-ориентированную тему (доклад, статья).

# 4.Объем дисциплины и виды учебной работы

Таблица 1

Вид учебной работы		Всего		Семестры		Семестры	
		часов		1	2	1	2
	_	ОФО	ЗФО	ОФО	ОФО	3ФО	3ФО
Контактная раб	ота (всего)	40/1,1	40/1,1	20/0,6	20/0,6	20/0,6	20/0,6
В том числе:							
Практические з	анятия	40/1,1	40/1,1	20/0,6	20/0,6	20/0,6	20/0,6
Самостоятельная работа		140/3,8 8	140/3,8 8	52/1,4	88/2,4	52/1,4	88/2,4
В том числе:							
II		69/1.0	69/1.0	20/0.0	40/1,1	28/0,7	40/1,1
Чтение, презен	тации	68/1,9	68/1,9	28/0,8	1	7	1
77 1		CO/1.7	60/1.7	20/0.6	40/1,1	20/0,6	40/1,1
Написание реф	ерата	60/1,7	60/1,7	20/0,6	1		1
Подготовка к зачету		6/0,16	6/0,16	2/0,05	4/0,1	2/0,05	4/0,1
Подготовка к эн	сзамену	6/0,16	6/0,16	2/0,05	4/0,1	2/0,05	4/0,1
Вид промежуточной атте-							
стации							
		зачет,	зачет,	зачет	канд.э	зачет	канд.э
Вид отчетности		канд.эк	канд.		кза-		кза-
		замен	экза-		мен		мен
			мен				
Общая трудо-	Всего в ч.	180	180	90	90	90	90
емкость дис-	Всего в						
циплины	3/e	5	5	2	3	2	3

# 5. Содержание дисциплины

# 5.1. Разделы дисциплины и виды занятий

Таблица 2

№	Наименование раздела	Практ.	Всего	
п/	дисциплины по семест-	зан. ча-	часов/	
П	рам	сы/з.е.	3.e.	
1.	Фонетика	1/0,02	1/0,02	
2.	Грамматика	4/0,1	4/0,1	
3.	Устная речь	4/0,1	4/0,1	
4.	Чтение	5/0,1	5/0,1	
5.	Письмо	1/0,02	1/0,02	
6.	Лексика	5/0,1	5/0,1	
1.	Грамматика	4/0,1	4/0,1	
2.	Устная речь	4/0,1	4/0,1	
3.	Чтение	4/0,1	4/0,1	
4.	Письмо	4/0,1	4/0,1	
5.	Лексика	4/0,1	4/0,1	

# 5.2. Лабораторный практикум – не предусмотрен.

# 5.3. Практические занятия (семинары)

# Таблица 3

№ п/п	Наименование раздела дисци- плины	Содержание раздела
		1 семестр
1.	Грамматика	Повторение времен. Present Simple and Present Continuous. Action and state verbs Past Simple and Present Perfect Simple. Used to+ infinitive Subject and Object questions.

		Comparative and superlatives adjectives. Relative clauses. Present and Past trends: Present Continuous/Past Simple Adjectives and adverbs
2.	Лексика	Международный проект Новые компании Языки мира Время сделать перерыв? Потребительские тенденции Дома и за его пределами
3.	Чтение	Тексты: Computer Literacy What is a computer? Application of computers Development of Electronics Microelectronics and Microminiaturization The First Calculating Devices The First Computers Some First Computer Models Four Generations of computers
4.	Устная речь	Знакомство и приветствие. Прием посетителей. Текст по специальности. Статья общественно-политического характера. Беседа по телефону. Назначение деловых встреч. Текст по специальности. Статья общественно-политического характера. Выражение мнений. Согласие и противоположное мнение. Участие в собрании или дискуссии. Статья общественно-политического характера. Советы и предложения. Текст по специальности. Статья общественно-политического характера. Передача сообщения. Мобильный телефон. Текст по специальности. Статья общественно-политического характера.

		Просьбы и предложения. Обмен информацией. Текст по специальности. Статья общественно-политического характера.
5.	Письмо	The Structure of Business Letters. Simple Commercial Letters. Enquiries and Offers. Accepting of Declining. Faxes, Telexes, Cables. Sale of Goods through Agents.
_		2 семестр
1.	Грамматика	Passive: Present Simple, Present Continuous, Present Perfect Simple, Past Simple, Will Future, Past Simple, Past Continuous, Past Perfect, Modal verbs: must, mustn't, need, needn't, have to, need to.  Arrangement and intentions: Present Continuous, to be going to+ infinitive. Time clauses 1st and 2 <sup>nd</sup> conditionals. Expressing probability.  Present Perfect, Present Simple, Present Continuous.  Time phrases.  3 <sup>rd</sup> Conditionals: should have (done) shouldn't have (done).  Reporting spoken language: statements, questions, orders and requests.
2.	Лексика	Преодоление культурных различий В международном масштабе Что если Передвижение по городу Опасные происшествия Новости плохие, новости хорошие Беседа о научной работе и планах на будущее
3.	Чтение	Тексты:     Data Processing and Data Processing     Systems     Advantages of Computer Data Processing     Computer System Architecture     Hardware, Software, and Firmware

		C	
		Steps in the Developing of Computers	
		From the History of Computer Deve-	
		lopment in Russia	
		Functional Units of Digital Computers	
		Some Features of a Digital Computers	
4.	Устная речь	Проведение переговоров и презен-	
		таций. Текст по специальности.	
		Статья общественно-политического	
		характера.	
		Виды делового общения. Текст по	
		специальности. Статья обществен-	
		но-политического характера.	
		E-mail сообщения. Текст по специ-	
		альности. Статья общественно-	
		политического характера.	
		Описание процесса. Методы интер-	
		вьюирования. Текст по специально-	
		сти. Статья общественно-	
		политического характера.	
		Бизнес корреспонденция. Текст по	
		специальности. Статья обществен-	
		но-политического характера.	
		Обмен новой информации. Проща-	
		ние. Текст по специальности. Ста-	
		тья общественно-политического ха-	
		рактера.	
		Текст по специальности. Статья	
		общественно-политического харак-	
		тера.	
5.	Письмо	Contracts in Export Trade and Their	
		Performance.	
		Orders in Import Trade and Their Ex-	
		ecution.	
		Complaints and Claims Arbitration.	
		Sea Transportation of goods.	
		Marine Insurance goods.	
		Financial Documents.	
	<u> </u>	Tinanciai Documents.	

# 6. Самостоятельная работа

Работа с грамматическим материалом, подготовка презентаций, чтение научной литературы по теме диссертации, поиск и анализ зарубежной литературы по теме в интернете.

## 6.1. Темы и вопросы самостоятельной работы

#### Таблица 4

Темы для самостоятельной работы
1 семестр
Чтение Robert Oppenheimer «The Reason that We did This Job is Because It was an Organic Necessity».
Презентации: Russia and Europe, or Russia in Europe?
Грамматика Modal equivalents.
2 семестр
Чтение Public Speaking in Politics: General Issues.
Презентации: Putin and Europe.
Грамматика Complex object, Complex subject.

## 6.2. Темы рефератов

- 1. Inauguration Speeches. Abraham Lincoln's Inaugural Address.
- 2. Obama's Inaugural Address.
- 3. Bill Gates' Graduation Speech in Harvard.
  - **7. Оценочные средства** измерения уровня освоения аспирантами дисциплины «Иностранный (английский язык)», включают в себя:

## Вопросы проведения аттестации

# 1. Тест по грамматике

#### Test A

# I. Translate into English using verbs in Present, Past and Future Indefinite Passive.

Их находят –их нашли – их найдут.

Его прощают – его простили – его простят.

Её ищут – её искали – её будут искать.

Мне предлагают – мне предложили – мне предложат.

Нас встречают – нас встретили – нас встретят.

Вам дают – вам дали – вам дадут.

# II. Write the following sentences in the Passive Voice.

- 1. This letter (to write) yesterday.
- 2. This question (to answer) at the last lesson.
- 3. This text (to translate) by him tomorrow.
- 4. The task (to give) by the teacher at every lesson.

- 5. This agreement (to sign) next month.
- 6. You (to show) the way to the city tomorrow.
- 7. The house (to build), soon we shall move into a new flat.
- 8. You often (to ask) by the teacher at the lessons?

## III. Translate the following sentences into English.

- 1. Все были уверены, что Борис хорошо сдаст экзамены.
- 2. Он говорил, что Лев Толстой его любимый писатель.
- 3. Я знал, что вы живете в Москве, но не знал вашего адреса.
- 4. Он сказал, что бросит курить.
- 5.Все знали, что она поедет в Рим.
- 6. Простите, мы не думали, что вы ждете нас.
- 7. Я не знал, что вы тоже любите футбол.
- 8. Я был уверен, что он будет выдающимся артистом.

## IV. Put into Indirect Speech.

- 1. I said to Boris: "Does your friend live in London?"
- 2. I said to the man: "Are you living in a hotel?"
- 3. Nick said to his friend: "Will you stay at the 'Hilton'?"
- 4. He said to me: "Do you often go to see your friends?"
- 5. He said to me "Will you see your friends before you leave St. Petersburg?"
- 6. Mike said to Jane: "Will you come to the railway station to see me off?"
- 7. She said to me: "Have you sent them a telegram?"
- 8. She said to me: "Did you send them a telegram yesterday?"

# V. Put questions to the italicized words.

- 1. Girls are beating boys in subjects such as science and math.
- 2. Alexander switches on his computer every day.
- 3. Computers can be divided into three main types.
- 4. Computers have resulted in massive unemployment in many countries.

# VI. Put into Past Tenses using Sequence of Tenses.

- 1. Nick says he is going to the hotel to see his friends, who have just arrived in St. Petersburg from the United States of America.
- 2. He says they have not been here for a long time.
- 3. He says they were friends at school.
- 4. He says he will take them to the theatre on Sunday.
- 5. They say they will write me a letter when they return home.
- 6. Mike says he is sure Ann and Kate will be excellent guides.
- 7. He says they have made good progress in English.
- 8. Oleg says that in a day or two several English students will come to pay a visit to their school and he will probably have to act as interpreter.

#### Test B

# I. Translate into English using verbs in Present, Past and Future Indefinite Passive.

Мне рассказывают – мне рассказали – мне расскажут.

Ему показывают – ему показали – ему покажут

Нас спрашивают – нас спросили – нас спросят.

Им отвечают – им ответили – им ответят.

Её оставляют – её оставили – её оставят.

Вас забывают – вас забыли – вас забудут.

## II. Write the following sentences in the Passive Voice.

- 1. We thought about our friend all the time.
- 2. The doctor will operate on him in a week.
- 3. The teacher sent for the pupil's parents.
- 4. They looked for the newspaper everywhere.
- 5. Nobody sleeps in the bed.
- 6. The neighbor asked for the telegram.
- 7. Everybody listened to the lecturer with attention.
- 8. The senior students laughed at the freshman.

## III. Translate the following sentences into English.

- 1. Я был уверен, что он будет выдающимся артистом.
- 2. Я боялся, что вы не последуете моему совету.
- 3. Я думал, что он подождет меня.
- 4. Я не знал, что ты будешь работать в читальном зале.
- 5. Сестра сказала, что хочет приехать к нам сама.
- 6. Я знала, что она очень занята.
- 7. Никто не знал, что вы ждете здесь. Пойдемте в дом.
- 8. Гид предупредил нас, что в этой части города движение довольно сильное.

# IV. Put into Indirect Speech.

- 1. He said to us: "Come here tomorrow."
- 2. I said to Mike: "Send me a telegram as soon as you arrive."
- 3. Father said to me: "Don't stay there long."
- 4. Peter said to them: "Don't leave the room until I come back."
- 5. "Take my luggage to Room 145," he said to the porter.
- 6. He said to me: "Ring me up tomorrow."
- 7. "Bring me a cup of black coffee," she said to the waiter.
- 8."Don't be late for dinner," said mother to us.

# V. Put questions to the sentences.

- 1. Babbage was lamenting about errors in some tables to his friend Herschel.
- 2. At that time, steam was a new and largely unexplored source of energy.

- 3. The Mark I took six seconds for a multiplication and twelve for a division.
- 4. Until the late 1970s, the computer was viewed as a massive machine.

## VI. Put into Past Tenses using Sequence of Tenses.

- 1. He says they have not been here for a long time.
- 2. He says they were friends at school.
- 3. He says he will take them to the theatre on Sunday.
- 4. My uncle says that he has just come back from Caucuses.
- 5. She says that she will bring and show us the photos.
- 6. The teacher says that they have made a good progress in English.
- 7. She says that Boris told her a lot of interesting things about the South.
- 8. Ann says she has just met Boris in the street.

#### Test C

# I. Translate into English using verbs in Present, Past and Future Indefinite Passive.

Их видят – их видели – их увидят.

Его слушают – его слушали – его будут слушать.

Её оставляют – её оставили – её оставят.

Нас защищают – нас защищали – нас защитят.

Мне разрешают – мне разрешили – мне разрешат.

Им покупают – им купили – им купят.

# II. Write the following sentences in the Passive Voice.

- 1. The group spoke to the headmistress yesterday.
- 2. The young mothers looked after her babies with great care
- 3. They sent for Jim and told him to prepare a report on that subject.
- 4. The lecturer is making a report.
- 5. The students translated this text last lesson.
- 6. They has shown a new film at our cinema.
- 7. They told me about the meeting.
- 8. She will meet us at the station.

# III. Translate the following sentences into English.

- 1. Гид предупредил нас, что в этой части города движение довольно сильное.
- 2. Секретарь не заметил, что директор с кем-то разговаривает.
- 3. Все мы знали, что ее семья опять в Санкт-Петербурге.
- 4. Лена сказала, что она дарит нам эту картину.
- 5. Я знала, что она работает на заводе, что у нее есть муж и двое детей, что семья у нее очень дружная и она счастлива.
- 6. Все мы знали, что ее семья опять в Санкт-Петербурге.
- 7. Лена сказала, что она дарит нам эту картину.

8. Я знала, что она работает на заводе.

## IV. Put into Indirect Speech.

- 1. Jane said to us: "Please tell me all you know about it."
- 2. She said to Nick: "Please don't say anything about it to your sister."
- 3. The teacher said to me: "Hand this note to your parents, please."
- 4. Oleg said to his sister: "Put the letter into an envelope and give it to Kate."
- 5. "Please help me with this work, Henry," said Robert.
- 6. "Please bring me some fish soup," he said to the waitress.
- 7. "Don't worry over such a small thing," she said to me.
- 8. "Please don't mention it to anybody," Mary said to her friend.

## V. Put questions to the sentences.

- 1. Computer technology has opened a variety of opportunities for people who are creative risk-takers.
- 2. Many of them have been rewarded greatly with fame and fortune.
- 3. The Apple Computer company sold their computers to thousands of American schools at discounted rates.
- 4. In 1890 John Loud created the first ball point pen.

## VI. Put into Past Tenses using Sequence of Tenses.

- 1. He says they were friends at school.
- 2. Oleg says that in a day or two several English students will come to pay a visit to their school and he will probably have to act as interpreter.
- 3. Ann says she has just met Boris in the street.
- 4. She says Boris told her a lot of interesting things about his travels in the south.
- 5. He says that he will come to see us next week.
- 6. She says that they have not been here for a long time.
- 7. Peter says that his wife and he spent most of their time on the beach.
- 8. He says he feels better now.

# 2. Чтение, перевод и анализ текста по профилю.

#### **Automation**

Automation" is a new word for a new purpose. Ordinarily automation is any improvement in the control of some activity or process by non-human automatic means, but sometimes the term is defined more narrowly. Recent steps in automation have followed each other with unusual speed. Many people are surprised to learn that in industries like chemical and oil-refining entire processes have become very nearly automatic. They want to know how this has happened. Electronic computers are becoming very good at routine clerical workin offices and factories. "

Automation has many sides. It includes, for example, developments that are no more than advanced mechanization - transfer-machines in engineering, many kinds of machinery

for making finished goods, and mechanical equipment for handling and assembly. Machines of this kind are automatic in that they do the actual work on their own; the operators only watch them and correct them whenever they go wrong - when, for instance, tools wear out.

But automation can also mean automatic control of processes and machinery, and this is a very different thing from mechanization, though the twogo together. Control is necessary in a vast number of processes in order to maintain the quality of a product when the operating conditions, such as temperature and pressure, change from time to time.

#### Vocabulary:

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oil-refining entire processes - нефтеперерабатывающая промышленность; control - управление;
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improvement - улучшение;
routine clerical work - однообразная канцелярская работа;engineering - проектирование;
goods - изделия, продукция;
mechanical equipment - механическое оборудование;
handling - обращение, управление;
```

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assembly - сборка;
purpose - цель;
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tools - инструменты;

are suiprised to learn - удивляются, когда узнают; in that they do - в том смысле, что они выполняют; on their own

- самостоятельно;

whenever they go wrong - всякий раз, когда они допускают погрешности; wear out - выходить из строя.

#### Match the phrases and translate them into Russian

automatic transfer mechanical; machines equipment means.

## Complete the sentences.

- a) automation is...;
- b) control is necessary in order to ...;
- c) In industries like chemical and oil-refining entire processes havebecome...;
- d) Electronic computers are becoming very good at...;
- e) Control is necessary in...

#### Get ready to answer the following questions:

- 1. What is automation?
- 2. What industries have become very nearly automatic?
- 3. What is the difference between "automation" and "automatic control"?
- 4. What is the purpose of automatic control?
- 5. Where are electronic computers employed?

#### Translate the sentences.

- 1. The problem to be studied can be simplified by the use of controlled experimental conditions;
  - 2. To produce this effect, it is actually much simpler to use alternating current;
- 3. The beginnings of all science are supposed to lie far back near the dawnof human history;
- 4. We know many human activities to have played a part in scientificinventions;
  - 5. To separate iron from sulphur is an easy task;
- 6. The function of a boiler is to transfer heat to the water in the most efficient manner;
  - 7. Mechanization is to be distinguished from more primitive tool using.

#### **Translate into English:**

Нет ничего нового в идее заменить человеческие усилия механизмами с автоматическим управлением. Однако слово «автоматика» появилось только после второй мировой войны. В наши дни автоматическое управление находит широкое применение во многих отраслях экономики внашей стране и в других высокоразвитых странах.

#### **AUTOMATION** (text B)

Automation is the system of manufacture performing certain tasks, previously done by people, by machines only. The sequences of operations are controlled automatically. The most familiar example of a highly automated system is an assembly plant for automobiles or other complex products.

The term automation is also used to describe nonmanufacturing systems in which automatic devices can operate independently of human control. Such devices as automatic pilots, automatic telephone equipment and automated control systems are used to perform various operations much faster and better than could be done by people.

Automated manufacturing had several steps in its development. Mechanization was the first step necessary in the development of automation. The simplification of work made it possible to design and build machines that resembled the motions of the worker. These specialized machines were motorized and they had better production efficiency.

Industrial robots, originally designed only to perform simple tasks in environments dangerous to human workers, are now widely used to transfer, manipulate, and position both

light and heavy work pieces performing all the functions of a transfer machine. In the 1920s the automobile industry for the first time used an integrated system oil production. This method of production was adopted by most car manufacturers and became known as Detroit automation.

The feedback principle is used in all automatic-control mechanisms when machines have ability to correct themselves. The feedback principle has been used for centuries. An outstanding early example is the fly ball governor invented in 1788 by James Watt to control the speed of the steam engine. The common household thermostat is another example of a feedback device

Using feedback devices, machines can start, stop, speed up, slow down count inspect, test, compare, and measure. These operations are commonlyapplied to a wide variety of production operations.

Computers have greatly facilitated the use of feedback in manufacturing processes. Computers gave rise to (the development of numerically controlled machines. The motions of these machines are controlled by punched paper or magnetic tapes. In numerically controlled machining centres machine tools can perform several different machining operations.

#### Vocabulary:

```
previously - ранее;
sequence - последовательность; аs-
sembly plant - сборочный завод;
nonmanufacturing - непроизводственный; de-
vice - устройство, прибор;
resemble - походить; efficien-
cy - эффективность;
flyball governor - центробежный регулятор;
steam engine - паровоз;
household thermostat - бытовой термостат; fa-
cilitate - способствовать:
punched - перфорированный;
aid - помощь;
dimension - измерение, размеры.
```

#### I. Find the following words and word combinations in the text.

автоматические устройства; автоматизированное производство;выполнять простые задачи; как легкие, так и тяжелые детали; интегрированная система производства; принцип обратной связи;

механизм может разгоняться и тормозить; компьютер автоматически посылает команды;высокоавтоматизированная система; непроизводственная система.

#### **Answer the questions:**

- 1. How is the term automation defined in the text?
- 2. What is the most «familiar example» of automation given in the text?
- 3. What was the first step in the development of automaton?
- 4. What were the first robots originally designed for?
- 5. What was the first industry to adopt the new integrated system of production?
- 6. What is feedback principle?
- 7. What do the abbreviations CAM and CAD stand for?
- 8. What is FMS?

#### AUTOMATIC CONTROL

History provides very early examples of automatic control, but they were little used in industry. Progress was slow until this century, but it received an important stimulus from the military needs of the last war and the pace has accelerated.

Automatic control is most advanced in industries like chemicals, oil- refining and food-processing, where materials are easy to handle. Because of it these industries have become highly automatic without any of the well-known inventions, such as transfer-machines and electronic computers. Control is also largely automatic in the manufacture of goods so different as iron and steel, cement and paper.

A system of control usually consists of three basic units - one that measures, one that controls, and one that corrects. If, for example, the condition to be controlled is the temperature of a boiler, the measuring unit records what ishappening to the temperature and tells the controlling unit, which compares the actual temperature with it should be and then tells the correcting unit to adjust a steam valve and so correct the temperature.

Controlling instruments are pneumatic, mechanical or hydraulic, and electric. Electric or electronic units are fast and able to send signals over long distances so giving "remote" control.

Automatic control is perhaps best known in plants where production is continuous, such as oil-refineries, but it is also found in factories that produce in batches.

#### Vocabulary:

automatic control - автоматическое управление; food-processing industry - пищевая промышленность; boiler - котел; to record - записывать; steam valve - паровой клапан; remote control - дистанционное управление; continuous - непрерывный.

#### I. Get ready to answer the following questions:

When did progress in automatic control receive an important stimulus? In what industries is automatic control most advanced?

What basic units does a system of control usually consist of? What kind of controlling instruments do you know?

What units are used to give "remote" control?

### II. Ask questions on all the parts of the following sentences:

Fresh applications of automatic control are still being found everywhere.

Orders for hundreds of computers of all sizes have been placed byenterprises.

#### **AUTOMATION IN INDUSTRY**

Many industries are highly automated or use automation technology in some part of their operation. In communications and especially in the telephone industry dialing and transmission are all done automatically. Railways are also controlled by automatic signaling devices, which have sensors that detect carriages passing a particular point. In this way the movement and location of trains can be monitored. Not all industries require the same degree of automation. Sales, agriculture, and some service industries are difficult to automate, though agriculture industry may become more mechanized, especially in the processing and packaging of foods. The automation technology in manufacturing and assembly is widely used in car and other consumer product industries.

Nevertheless, each industry has its own concept of automation that answersits particular production needs.

#### Vocabulary:

agriculture industry - сельскохозяйственная промышленность; particular production needs - определенные производственные нужды.

#### I. Find the following words and word combinations in the text:

```
высокоавтоматизированный; производство и сборка; собственная концепция автоматизации; набор и передача; устройство;датчик; определенная точка; движение и расположение; одинаковый уровень автоматизации.
```

#### II. Tell what industries use automation technologies.

#### **AUTOMATED PRODUCTION LINES**

An automated production line consists of a series of workstations connected by a transfer system to move parts between the stations. This is an example of fixed automation, since these lines are set up for long production runs, making large number of product units and running for several years between changeovers. Each station is designed to perform a specific processing operation, so that the part or product is constructed stepwise as it progresses along the line.

A raw work part enters at one end of the line, proceeds through each workstation and appears at the other end as a completed product. In the normal operation of the line, there is a work part being processed at each station, so that many parts are being processed simultaneously and a finished part is produced with each cycle of the line. The various operations, part transfers, and other activities taking place on an automated transfer line must all be sequenced and coordinated properly for the line to operate efficiently.

Modern automated lines are controlled by programmable logic controllers, which are special computers that can perform timing and sequencing functions required to operate such equipment. Automated production lines are utilized in many industries, mostly automobile, where they are used for processes such as machining and pressworking.

Machining is a manufacturing process in which metal is removed by a cutting or shaping tool, so that the remaining work part is the desired shape. Machinery and motor components are usually made by this process. In many cases, multiple operations are required to completely shape the part. If the part ismass-produced, an automated transfer line is often the most economical method of production. Many separate operations are divided among the workstations.

Pressworking operations involve the cutting and forming of parts from sheet metal. Examples of such parts include automobile body panels, outershells of laundry machines and metal furniture More than one processing step is often required to complete a compli-

cated part. Several presses are connected together in sequence by handling mechanisms that transfer the partially.

completed parts from one press to the next, thus creating an automatedpressworking line.

### Vocabulary:

automated production line - автоматизированная поточная линия;transfer system - система передачи;

workstation - рабочее место; stepwise - пошаговый;

raw work part - необработанная деталь;

changeover - переключение;

programmable logic controllers - программируемые логическиедиспетчеры.

#### 1. Give the English equivalents:

Готовое изделие (2 синонима), выбор времени, оборудование, механическая обработка, многократные действия.

# 2. Define the part of speech of each word according to the suffix and translate it into Russian.

Production, consists, properly, units, operation, simultaneously, efficiently, programmable, controller, functions, equipment, economical, partially.

**3.** Match the phrases and translate them into Russian.fixed automated manufacturing transfer automobile; production automation industry process system.

## **4.** Answer the questions:

- a) What does an automated production line consist of?
- b) What are modern automated lines cotrolled by?
- c) Where are automated production lines utilized in?

#### 5. Say in some words what automated production line is.

#### 7. AUTOMATED ASSEMBLY

Assembly operations have traditionally been performed manually, either at single assembly workstations or on assembly lines with multiple stations. Owing to Ihe high labour content and high cost of manual labour, greater attention has been given in recent years to the use of automation for assembly work.

Assembly operations can be automated using production line principles if the quantities are large, the product is small, and the design is simple.

#### PROMBLEMS OF THE MODERN WORLD

#### **POLLUTION**

Man has been trying to make his life easier for many centuries. In does so, he invented machines and instruments. They have been working and polluting the world we live in In this world around us, there are two things that do not belong to any one country: air and ocean water. In both the air and water, there is much pollution People are concerned about the air and water used by everyone, and they are also concerned about the future of the Earth.

One of the most important pollution problems is in the oceans. Many ships sail in the ocean water – fishing ships carrying people, some carrying oil. If a ship loses some of the oil in the water or trash from the ship is put into the ocean, the water becomes dirty. Many birds and fish die because of the polluted water. Many fish are dying in the sea, others are getting contaminated.

Fishermen catch contaminated fish which may be sold in markets and people may get sick from eating them. Fish may also move to another part of theocean. Lakes and rivers are getting polluted too. Some beaches are considered dangerous for swimming.

The second important problem is air pollution. Cars and factories pollutethe air we use. It also destroys the ozone layer which protects the Earth from the dangerous light of the Sun.

Another problem is that our forests are dying from acid rain. Thus, in turn, affects the balance of nature.

If we want our children to live in the same world we live in or in a better and healthier world, we must learn to protect the water, the air and the earth from pollution.

#### Vocabulary:

to make one's life easier - облегчить чью-либо жизнь;

to invent machines and instruments - изобретать машины и инструменты;загрязнять - to pollute;

to be concerned about smth - беспокоиться о чем-либо; to put trash into smth - сбрасывать мусор во что-либо; the polluted water - загрязненная вода;

to get contaminated - быть отравленным; air pollution - загрязнение воздуха;

to destroy the ozone layer - разрушать озоновый слой;

to die from acid rain - погибать из-за кислотных дождей;

to affect the balance of nature - оказывать влияние на гармонию в природе; to protect the water, the air and the earth from pollution - защищать воду, воздух и землю от загрязнения.

#### In this world around us

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to destroy the ozone layer - разрушать озоновый слой;

#### **ENVIRONMENTAL PROTECTION**

The scientific and technological progress of the past century has brought about not only rapid industrial development but it has caused the pollution of the environment. Today natural resources are exhausted; some species of flora and fauna are disappearing; city and industry waters are endangering lakes, riversand ponds. Big cities have a problem with air pollution.

In recent years the pollution problems have received great publicity due to the Environmental movement which has gained widespread support. Environmental activists stress that pollution is caused by industry and automobiles, they warn that acid rains threaten many forests. More and more people have started to realize that to keep air and water clean, strict pollution control is necessary.

The protection of natural resources and wildlife is becoming a political programme of a lot of countries. Numerous anti-pollution acts passed in different countries have brought about considerable improvements in environment. In many countries purifying systems for treatment of industrial waters have been installed, measures have been taken to protect rivers and seas from o.l waters. Wildlife reservation, models of undisturbed nature, have been developed in some parts of the world.

As the environmental problems have grown beyond the concern of a single country, their solution requires the co-operation of all nations.

Today environmental protection has become a universal problem Technological progress improves people's lives, but at the same time it brings about pollution and contamination of land, water and air. The atmosphere of the Earth and the depths of the oceans are poisoned with toxic wastes created by the humans. Millions of species - animals, birds, fish have already disappeared fromour planet. Natural resources are exhausted; the ecology of the planet is disbalanced.

Big cities face the environmental catastrophe too. Concentration of millions of people on a tiny area causes numerous problems. Some of them can be solvedonly at the expense of creating new ones. Thus, air pollution is caused by the ever-increasing number of automobiles that help to cope with the transportation problem. 1 he need for energy generates pollution on a large scale. Nuclear power plants threaten air, water and land. Radiation affects people's health The accident at Chernobyl in 1986 was tragic for many people. The necessity to employ all the inhabitants of the city leads to the creation of new factories that produce not only consumer goods, but wastes, noise and smog.

Another source of global danger is acid rain. It is a relatively new kind of pollution. Acid rains appeared as a reaction of the atmosphere to the air contamination. Acid rains damage water, forest, and soil resources. Acid rains cause the disappearance of fish from many lakes, bring death to the forests and woods in Europe and America.

The survival of our civilization depends on the ability of mankind to find a way out. The task of protecting the nature is of primary importance now. Recently the Environmental movement has gained widespread support. Environmental activists organizations of volunteers do their best to stop pollution of our planet. Due to this organizations many laws aimed

at protecting the nature were passed. Greenpeace organization was created in 1987. it carries out many campaigns against environment pollution. The saving nature and animals has become a political program in many countries. Man should change his attitude to the nature to save it.

More recently, the introduction of microprocessors and computers have made possible the development of computer-aided design and computer-aided manufacture (CAD and CAM) technologies. When using these systems a designer draws a part and indicates its dimensions with the help of a mouse light pen, or other input device. After the drawing has been completed the computer

automatically gives the instructions that direct a machinirtg centre to machine the part.

systems (FMS). A computer in FMS can be used to monitor and control the operation of the whole factory.

Automation has also had an influence on the areas of the economy other than manufacturing. Small computers are used in systems called word processors, which are rapidly becoming a standard part of the modern office They are used to edit texts, to type letters and so on.

#### Vocabulary:

```
previously - ранее;
sequence - последовательность; аssembly plant - сборочный завод;
nonmanufacturing - непроизводственный;device - устройство, прибор;
resemble - походить; efficiency - эффективность;
facilitate - способствовать:the scientific and technological progress - научный и технологическийпрогресс;
industrial development - промышленное развитие;
pollution of the environment - загрязнение окружающей среды;natural resources - природные ресурсы;
```

environmental movement - движение по защите окружающей среды.

#### **Answer the questions:**

- кислотные дожди;

- 1. What are advantages of industrial development?
- 2. What are disadvantages of industrial development?

species of flora and fauna - виды флоры и фауны; the protection of wildlife - защита дикой природы; acid rain

- 3. What do Environmental activists do?
- 4. What has been done in many countries to improve the environmen

## Итоговый (кандидатский) экзамен (весенний семестр)

Вопросы экзамена

а) **письменный перевод научного текста** по специальности с английского языка на русский. Объем перевода — 2500-3000 печатных знаков.

Проверка адекватности и терминологической грамотности перевода совместно с представителем кафедры (факультета) аспиранта/соискателя.

б) краткое обобщение (резюме) основного содержания текста по специальности с выделением ключевых моментов, опуская второстепенную информацию.

Объем текста— 1000-1500 печатных знаков.

в) устный доклад на иностранном языке по теме научного исследования аспиранта.

## Образец билета к кандидатскому экзамену

МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦІ ФГБОУ ВЫСШЕГО ОБРАЗОВАНИЯ ГРОЗНЕНСКИЙ ГОСУДАРСТВЕННЫЙ НЕФТЯНОЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТІ имени акад. М.Д. Миллионщикова	
«УТВЕРЖДА Первый прорег И.Г. Гайрабо	ктор
«»20	г.
Кандидатский экзамен по иностранному языку (английский) БИЛЕТ №1	
<ol> <li>Read, translate and give short summery. (45-60 min)</li> <li>Fluent reading. Give the essence of the text.(2-3 min)</li> <li>Talk about the scientific work.</li> </ol>	
Доцент, к.п.н. X.А. Акаева Зав. межфакультетской языковой кафедрой Т.Б. Хабусиева «» 20 г.	

### Требования и оценка видов речевой деятельности

На экзамене аспирант должен продемонстрировать умение пользоваться английским языком как средством профессионального общения в научной сфере.

Аспирант должен владеть орфографической, орфоэпической, лексической и грамматической нормами изучаемого языка и правильно использовать их во всех видах речевой коммуникации, в научной сфере в форме устного и письменного общения.

### Говорение

На экзамене аспирант должен продемонстрировать владение подготовленной монологической речью, а также неподготовленной монологической и диалогической речью в ситуации официального общения в пределах программных требований.

Оценивается содержательность, адекватная реализация коммуникативного намерения, логичность, связность, смысловая и структурная завершенность, нормативность высказывания.

#### **Чтение**

Аспирант должен продемонстрировать умение читать оригинальную литературу по специальности, опираясь на изученный языковой материал, фоновые страноведческие и профессиональные знания, навыки языковой и контекстуальной догадки.

Оцениваются навыки изучающего, а также поискового и просмотрового чтения. В первом случае оценивается умение максимально точно и адекватно извлекать основную информацию, содержащуюся в тексте, проводить обобщение и анализ основных положений предъявленного научного текста для последующего перевода на язык обучения, а также составления резюме на иностранном языке.

**Письменный перевод** научного текста по специальности оценивается с учетом общей адекватности перевода, то есть отсутствия смысловых искажений, соответствия норме и узусу языка перевода, включая употребление терминов.

**Резюме** (основная идея) прочитанного текста оценивается с учетом объема и правильности извлеченной информации, адекватности реализации коммуникативного намерения, содержательности, логичности, смысловой и структурной завершенности, нормативности текста.

При поисковом и просмотровом чтении оценивается умение в течение короткого времени определить круг рассматриваемых в тексте вопросов и выявить основные положения автора.

Оценивается объем и правильность извлеченной информации.

## Структура кандидатского экзамена

Разделами кандидатского экзамена по иностранному языку являются:

- чтение оригинального текста по специальности. Объем 2500–3000 печатных знаков. Время выполнения работы 45–60 минут. Форма проверки: передача извлеченной информации осуществляется на иностранном языке;
- беглое (просмотровое) чтение газетной статьи. Объем -1000-1500 печатных знаков. Время выполнения -2-3 минуты. Форма проверки краткий пересказ содержания статьи, устные ответы на вопросы;
- устный доклад на иностранном языке по теме научного исследования аспиранта, беседа с экзаменаторами на иностранном языке по вопросам, связанными со специальностью и научной работой аспиранта.

Требования к реферату по иностранному языку, предоставляемого для (кандидатского) экзамена, образец оформления титульного листа и требования, предъявляемые оформлению переводы, представлены в приложении.

# Примерные вопросы к кандидатскому экзамену (беседа с экзаменаторами)

#### Английский язык

- 1. What's the purpose of your present study?
- 2. What are the aims and tasks of your science?
- 3. Are there any difficulties in your research work?
- 4. Is there any solution to your problem?
- 5. Do you sometimes try new methods?
- 6. Do you often deal with complicated problems?
- 7. Do you discuss your results with your supervisor?
- 8. Are your results published?
- 9. Is your problem studied anywhere else?
- 10. Are additional investigations required to solve this problem?
- 11. Are outstanding results often reported in literature?
- 12. Whose works are best known in your field of research?
- 13. At what stage of your research will be final conclusions made?
- 14. What problems were considered most pressing?
- 15. Whose works laid the foundation for your field?
- 16. Whose ideas had a profound influence on the development of your field?
- 17. What contribution will you make by your research to that particular branch of science?
- 18. How many sections will your thesis have?
- 19. Have written many scientific papers?
- 20. Have you ever attended international conferences?
- 21. Have you made any discovery in science yet?
- 22. Has your supervisor been helpful in your research?
- 23. Has your supervisor seen your recent results yet?
- 24. What new studies have been undertaking by you recently?
- 25. What research is being carried out by you now?
- 26. Is similar work being done anywhere else?
- 27. What preliminary conclusions can be drawn from your work?
- 28. What results are to be expected from your work?
- 29. How long might it take you to complete the work?
- 30. What improvements should be introduced in the research process?
- 31. What should be done to encourage further research in your field?

- 32. What is necessary to broaden and deepen one's knowledge of the subject?
- 33. What should be done to further develop international contacts among scientists?
- 34. Why should scientists exchange views and information?
- 35. What questions will you discuss with your foreign colleagues when you see them?
- 36. When do expect conclusive results?
- 37. Can science do without theories and hypotheses?
- 38. What are the necessary components of scientific research?
- 39. What would you do to acquire a deeper and broader knowledge in your field?
- 40. What would you do to get comprehensive knowledge in adjacent areas?
- 41. What would you suggest for improving the state of research in your field?
- 42. What would you suggest for upgrading research in your area?
- 43. Could you give a review of current literature on your subject?
- 44. What qualities should a researcher possess today and why?
- 45. Is collaboration important in research and how is it realized?

# 8. Учебно-методическое и информационное обеспечение дисциплины 8.1. Основная литература

- 1. Английский язык для аспирантов [Электронный ресурс] : учебное пособие / Т. С. Бочкарева, Е. В. Дмитриева, Н. В. Иноземцева [и др.]. Электрон. текстовые данные. Оренбург : Оренбургский государственный университет, ЭБС АСВ, 2017. 109 с. 978-5-7410-1695-4. Режим доступа: <a href="http://www.iprbookshop.ru/71263.html">http://www.iprbookshop.ru/71263.html</a>
- 2. Егорова, Е. В. Английский язык для нефтегазового бизнеса [Электронный ресурс] : учебник для высших учебных заведений / Е. В. Егорова, В. В. Матюшина, А. И. Шпынова. Электрон. текстовые данные. М. : Аспект Пресс, 2016. 304 с. 978-5-7567-0818-9. Режим доступа: http://www.iprbookshop.ru/56755.html
- 3. Лычко, Л. Я. Английский язык для аспирантов. English for Post Graduate Students [Электронный ресурс]: учебно-методическое пособие по английскому языку для аспирантов / Л. Я. Лычко, Н. А. Новоградская -Морская. Электрон. текстовые данные. Донецк: Донецкий государственный университет управления, 2016. 158 с. 2227-8397. Режим доступа: http://www.iprbookshop.ru/62358.html

#### 8.2. Дополнительная литература

- 1. Английский язык для аспирантов [Электронный ресурс] : учебное пособие / Т. С. Бочкарева, Е. В. Дмитриева, Н. В. Иноземцева [и др.]. Электрон. текстовые данные. Оренбург : Оренбургский государственный университет, ЭБС АСВ, 2017. 109 с. 978-5-7410-1695-4. Режим доступа: http://www.iprbookshop.ru/71263.html
- 2. Абрамов, В. Е. Элементарная грамматика современного английского языка для начинающих и продолжающих его изучение [Электронный ресурс]: учебное пособие для ВУЗов / В. Е. Абрамов. Электрон. текстовые данные. Самара: Поволжский государственный университет телекоммуникаций и информатики, 2013. 74 с. 5-256-01435-8. Режим доступа: http://www.iprbookshop.ru/71909.html

### 8.3.Интернет-ресурсы

#### Английский язык

- 1. VOA Special English <a href="http://wwwl.voanews.com">http://wwwl.voanews.com</a>
- 2. BBC Learning English <a href="http://www.bbc.co.uL\vorldservice/learningenglish.com">http://www.bbc.co.uL\vorldservice/learningenglish.com</a>
- 3. British Council Professionals- <a href="http://www.britishcouncil.org/learnenglish-podcasts-">http://www.britishcouncil.org/learnenglish-podcasts-</a> professionals.htm
- 4. British Council Science <a href="http://www.britishcouncil.org/learnenglish-central-">http://www.britishcouncil.org/learnenglish-central-</a> science-homepage
- 5. The Naked Scientists http://www.thenakedscientists.com
- 6. Science Live <a href="http://www.sciencelive.org">http://www.sciencelive.org</a>
- 7. Chemistry World <a href="http://www.rsc.org/chemistryworld/podcast">http://www.rsc.org/chemistryworld/podcast</a>
- 8. The Royal Society Podcasts <a href="http://royalsociety.org">http://royalsociety.org</a>
- 8. Imperial College London http://www3.imperial.ac.uk/media/onlinelectures
- 9. The University of Bath <a href="http://www.bath.ac.uk/podcast">http://www.bath.ac.uk/podcast</a>
- 10. The University of Edinborough http://websiterepository.ed.ac.uk/explore/av

### 9. Материально-техническое обеспечение дисциплины

Практические занятия по дисциплине проводятся в учебных аудиториях корпуса ГГНТУ кафедры «Межфакультетская языковая».

Аспиранты полностью обеспечены учебными и методическими материалами, разработанными на кафедре для организации их обучения и контроля его результатов.

Программа составлена в соответствии с утвержденными ФГОС и учебными планами основной профессиональной образовательной программы высшего образования — подготовки кадров высшей квалификации по программам подготовки научно - педагогических кадров в аспирантуре

- аудиторный фонд кафедры МФЯК
- 2 рабочих места с выходом в интернет
- библиотечный фонд кафедры МФЯК

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к.п.н., доцент Межфакультетской языковой кафедры _	1112		/ Акаева	ı X.A./

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Рассмотрено: на заседании кафедры МФЯК протокол № 6 от 07.02.2020

СОГЛАСОВАНО:	1/2
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Зав. межфакультетской языковой кафедрой	/ХабусиеваТ.Б./