

# Testing Problems in Russian as a Foreign Language in a Technical University

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## Abstract

Problems of theory and practice of the Russian as a foreign language testing for entrants in technical universities are considered. The benefits of test forms for controlling the foreign students' skills in the Russian language during a hard time limit are presented. The structure and content of the tests, all types of tasks offered on the entrance and final examinations in the Russian language, the requirements to the skills and abilities of students in the types of speech activity - listening, speaking, reading and writing - on the basis of common-literary and scientific styles of speech are described in details. The conducted researches take into account the fact that numerous scientific and methodological researches are devoted to the problems of the foreign citizens testing, classification and selection of texts. The results of text analysis of the Russian textbooks required for testing, two types of tests in Russian as a foreign language for technical direction of training students, future bachelors and masters, are presented. It was found that for control of skills, knowledge, and skills in scientific style of speech should offer on basic science texts, fragments of authentic texts containing grammatical frequency constructions, typical for fundamental science texts in. After analyzing the types of educational texts in relation to the training of future graduate students the authors came to the conclusion that the most frequency texts are the ones of proofs and ones of discourse that were proposed to students when they were having exams in reading and listening. All the tasks were being tested for several years, which ultimately optimized the learning process significantly.

**Keywords:** Testing; Typical Test; Russian as a Foreign Language; Testing; Tasks; Selection of Texts; Technical Direction of Training.

## 1. Introduction

The modern period of development of methods of teaching Russian as a foreign language is a period of intensive development and introduction of various systems of pedagogical measurements. Russian and foreign organizational and

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technological models of testing systems are successfully developing. Foreign applicants entering the first year of technical universities should be trained to have studies in the Russian language at Russian universities in the language environment. They have to be trained at the Preparatory Department and pass a First Certification Level Examination, that is: they have to speak fluent Russian to the extent that allows them to carry out educational and professional activities in Russian, and to be involved in everyday communication; to be psychologically ready for learning activities in a new socio-cultural environment, to possess a system of subject knowledge necessary for further education in universities of the Russian Federation; to know the methods of doing test tasks. The most important task is the development of communication skills. In modern education, this issue is given great attention (Romanova & Skorikova, 2018; Kirsanova & Lazarev, 2018; Ivlev V., Ivlev Yu., & Ivleva, 2017; Skorikova & Khromov, 2016; Inozemtsev, Ivleva, Ivlev, & Oseledchik, 2016), which is reflected in the Concept of Scientific Education and global trends in the development of education and academic research (Karpov, 2015, 2017). An equally important task is the assessment of language and speech competence.

Test technologies make it possible not only to assess the knowledge, skills and abilities of foreign students, but also to objectively measure them. Test control allows one to significantly save time and is the best way to objectively test the knowledge of applicants. Therefore, entrance tests are conducted in the form of test tasks in all subjects. The testing of foreign citizens, the text classification, and the problems of selecting texts are the subject of numerous scientific and methodological studies by Balykhina (2006), L.P. Klobukova, E.L. Korchagina and others.

As it was noted by Balykhina (2006), “there have appeared the circumstances that determine the special significance and relevance of the development of test control and the nationwide testing system: the process of standardization of the Russian educational system is in progress, state educational standards are being developed, the problem of mass measurement of the level and quality of students training in a variety of disciplines at the completion of various stages in education is emerging full blown”.

At present it is necessary to unify the tasks and meet the new requirements, so there has appeared an urgent need to change the form of the Russian language entrance examinations for foreign applicants, as previously held exams in the form of retelling the text the applicants listened to are outdated. The range of the foreign language proficiency requirements is diverse, therefore it is not a simple task to develop a test which would be universal for non-philologists, meet modern requirements, include non-recurring types of tasks, objectively assess the language and speech competence of foreign applicants. To solve this problem, we developed fundamentally new types of examination tasks in the Russian language in the form of

a test for different degrees of students training, i.e. future Bachelor's and Master's Degrees students.

The purpose of this paper is to present and describe two types of the test. The first test is designed for Bachelor's Degree students who aim at getting higher education under a standard training program for Russian students. The second test is designed for graduates, i.e. Master's Degree students, who will continue their studies in individual programs.

## 2. General Characteristics of the Tests and Their Requirements

The test of the first type is carried out as a university entrance exam; the test of the second type is a final for students of the Preparatory Department. Any foreign student willing to be enrolled in the 1st year of Bauman Moscow State Technical University (BMSTU) must take the first test. Students who have studied Russian at the Preparatory Department of our university should successfully pass the second test in order to do the Master's program.

Both the first and second types of the test are developed for students of non-philological majors. Since lectures and seminars are given in the Russian-speaking audience, foreigners who have been trained at the Preparatory Department are expected to have a certain level of skills and abilities in various types of speech activity - listening, speaking, reading and writing skills - based on literary and scientific styles of speech.

When reading, they must:

- understand simple general scientific texts, the main content of academic, scientific and general texts and certain facts, statements, cause-and-effect relationships, without using a dictionary,
- understand both the basic and additional information contained in the text,
- identify the key problem of the text,
- find meaningful content-related blocks in the text, know and understand their semantics, structure and communicative focus, and
- be able to formulate a general idea of the content, apply different types of reading.

As for listening, foreign students must:

- listen to and understand the speech based on the vocabulary and grammar studied, the main content and certain facts, statements and

relationships between them in monolog and dialog speech, in academic, general and scientific texts, and

- listen to and understand a scientific language lecture on the major of their further training, listen to the texts which are reproduced one time at the rate of 160–180 syllables per minute, the content of new words being up to 1.5%.

Writing is a fundamental skill for teaching a foreign language. Applicants must:

- be able to correctly write letters, words, sentences using well-known words, write down what has been read or heard, draw up and write down different types of text plans, notes, both short and detailed, draw up and write down a plan of their message,
- make up a written monologic reproductive statement with a given communicative goal, meaningfully process the text, write their own statement on the proposed topic, and
- be able to state in a written form the content of the text which they read or listened to, with varying degrees of minimization.

Understanding the text, constructing speech in the form of an oral or written message is one of the main purposes of teaching a foreign language. The main criterion for mastering a language is an adequate perception of textual information, the ability to produce certain texts with their characteristic features.

When controlling knowledge in the field of any foreign language, close attention should be paid to vocabulary, since vocabulary, interacting in speech with grammar and phonetics, is the leading means of verbal and written communication (Kryuchkova, 2009). Foreign applicants should have the vocabulary, sufficient to understand most everyday topics: family, hobbies, work, study, future profession, events in the world and in life. In addition, applicants are required to have an idea about the features of the scientific language, typical language constructions of the scientific style, to know at least 100 general scientific terms.

Mastering a foreign language as a means of communication is impossible without knowledge of grammar. This is particularly relevant for the Russian language, since it belongs to the number of inflectional languages, with an extensive prepositional and case-time system, it has a complex system of syntactic forms.

Let us consider in more detail each type of the test.

### **3. Tests of the First Type: Future Bachelor's Degree Students**

#### ***3.1. Structure, Assessment Criteria, Level of Proficiency***

The test of the first type for foreign applicants is clearly structured. The test consists of ten tasks, and their content fully complies with the requirements of the

State Standard for Foreigners who have passed the exams for the First Certification Level of Proficiency in Russian.

This form of control allows us to objectively test the ability of foreign applicants to work in a test format with a strict time limit - 180 minutes. The maximum number of points scored is 100. When carrying out the task, it is not allowed to use the dictionary. The tests are based on the objectives of using the Russian language, skills and abilities in the use of language means for the implementation of communicative tasks in the main types of speech activity: reading, writing, listening. Let us note that, in addition to testing writing skills as such, the level of proficiency in written speech is assessed in the form of making a written speech statement.

The developed test gives an unbiased assessment of the ability of foreign applicants to study at a university in Russian, to meet their needs when communicating with native speakers in the social, educational, professional and socio-cultural spheres of speech activity. The test is aimed at determining the level of general proficiency in Russian, taking into account the future education in a technical university, that is, it includes the tasks for testing the knowledge of the scientific language in its variety - a scientific popular sub-style, as well as the development of applicants' linguistic competence, within which the lexical, grammatical, semantic and phonological competence is assessed. The test material was selected in accordance with the requirements of the State Educational Standard in the Russian language.

### ***3.2. Typical Test Tasks for Future Bachelor's Degree Students***

Some tasks have no answers because of difference English and Russian grammar.

Task I - writing a summary of the material listened to – is of the most difficulty for foreign applicants, since they need to be creative to a certain extent to do this task. Therefore, it is allowed to listen to the text twice. The task aims at testing how applicants understand and process information in the form of a small coherent text, write a short summary of the material, the maximum score being 16 points. The volume of the auditory material is 110-120 words; the number of unfamiliar words should not exceed 1-2%.

I. Listen to the text and write a short summary of up to 40-50 words.

Sergey Pavlovich Korolyov, the Chief Spacecraft Designer, was a hot-tempered man. Once he come into the workshop where the spacecraft "Vostok" was

being built, and noticed the flaws in the work of one engineer. Sergey Pavlovich got very unhappy about that and told the engineer that he was fired.

The engineer agreed with Korolyov, but did not go home and continued to do his job.

After about three hours, Korolyov found some flaws in the work again and told the engineer that he was making a severe reprimand for the bad work.

- Well, you do not have the right! - answered the worker.

- What?! – Korolyov got angry. - I don't have the right? Why not?

- Because I'm not working for you anymore. Three hours ago you fired me.

Korolyov looked at the engineer and burst into laughter. The engineer stayed at work.

Answer

Korolyov, the Chief Spacecraft Designer, was a hot-tempered man. Once he noticed the flaws in the work of one engineer. Sergey Pavlovich told the engineer that he was fired. The engineer agreed, but continued to do his job.

Then Korolyov made a severe reprimand for the bad work. The engineer replied that Korolyov could not do this because he had fired him. Sergey Pavlovich burst into laughter. The engineer stayed at work.

Task II aims at testing the general understanding of information, structuring skills, determining the topic and main content, highlighting the logical and semantic parts of texts. "These texts are accompanied by questions" (Petrova, 2004). The task to title a text and make a writing plan is a test of the ability to summarize information at the semantic level. It presents a certain difficulty for foreign applicants. The maximum score for it is 16 points.

The average text size is 250 words. Applicants are given scientific popular texts, minimally adapted by test writers. When doing the task, applicants may not misrepresent the ideological basis of the text.

II. Read the text and title it. Make and write a simple nominal plan of 5-6 points.

Wind power can be used endlessly. If we compare wind power plants with thermal power plants, we will see that wind power does not use the wealth of the Earth. Extracting coal, oil, gas for heat is associated with great difficulty. Thermal stations pollute the environment. Wind power plants are certainly not perfect: they interfere with the flight of birds and insects, make noise, interfere with watching TV

shows in nearby houses. However, wind power plants are very convenient. Typically, the operating device of a wind engine is a wind wheel. The theory of its movement at the beginning of the 20th century was constructed by the famous Russian scientist N.E. Zhukovsky. He found the efficiency of the wind wheel to be 59.3%.

It is impossible to know exactly in which direction and with what speed the wind will blow. When the wind speed changes, the speed of the wind wheel changes as well. Therefore, to obtain wind energy, different designs are used, e.g. vertical structures.

Wind power plants are often used in places where the average annual wind speed is 6 meters per second and higher. Today, wind power plants with a unit capacity of 100–500 kW are the most common, although there are wind farms which have a unit capacity of several megawatts.

In California, USA, about one thousand wind power plants are located in one place, in total their capacity being more than 100 MW. In Spain, there is a wind power plant which amazingly worked for a long time, making the wind for itself!

In Russia wind power plants have been also used. In the early 1990s, a small capacity power plant was built. It can provide energy for a TV, a fridge. The weight of this power plant is 460 kg. Designers managed to achieve the efficiency of 46-48%.

The total capacity of wind power plants in the world is growing rapidly. The world leaders in their use are the United States, in Europe these are Germany, England, Denmark and the Netherlands. Wind power plant designs are constantly being improved.

### Answers

#### Wind power plants

#### Plan

1. The advantages and disadvantages of wind power plants.
2. Operating device of a wind engine.
3. Different designs for wind energy.
4. The use of wind power.
5. Wind power plants in Russia and around the world.

Task III aims at testing a detailed understanding of the information from the text of task II in the form of complete answers to 12 questions. In addition, the necessary lexical minimum of foreign applicants is assessed: the questions are

structured so that the answers to them require knowledge of synonyms and synonymous structures. This task is of higher level of difficulty than intermediate. The maximum score is 12 points.

III. Give full answers to the questions on the text.

1. What does wind power use?
2. Why are thermal power plants harmful?
3. Why are wind power plants not perfect?
4. What theory was developed by N.E. Zhukovsky?
5. What determines the speed of the wind wheel?
6. Where are wind power plants usually located?
7. What are the most common wind power plants in our time?
8. What is special about the Spanish wind power plant?
9. What household appliances can a wind power station established in Russia in the 90s provide energy for?
10. What is its efficiency?
11. Is the total capacity of wind power plants decreasing or increasing at present?
12. How are wind power plant designs changed?

Answers

1. Wind power uses wind energy.
2. Thermal power plants are harmful because they pollute the environment.
3. Wind power stations are not ideal, because they interfere with the flights of birds and insects, they make noise, they interfere with watching TV shows in nearby houses.
4. N.E. Zhukovsky developed the theory of motion of the wind wheel.
5. The speed of the wind wheel depends on the wind speed.
6. Wind power stations are usually located in places where the average annual wind speed is 6 meters per second and higher.
7. At present, wind power plants with a unit capacity of 100–500 kW are the most common.



8. The Spanish wind power plant is special because it made the wind for itself.
9. A wind power station established in Russia in the 90s can provide energy for a television set, a fridge.
10. Its efficiency is 46-48%.
11. Nowadays, the total capacity of wind power plants is increasing.
12. Designs of wind power stations are constantly being improved.

Task IV aims at testing the understanding of logical construction of the text, cohesion and coherence, text markers. The task also assesses the applicants' attention and logical thinking. Maximum score is 6 points.

IV. Write these sentences in logical order (as a coherent text).

1. It is this energy that "operates" in nuclear power plants.
2. It played an important role for future nuclear power plants.
3. The world's first nuclear power plant was built in Russia in June 1954.
4. It is based on a nuclear power plant using the nucleus of heavy elements - uranium and plutonium.
5. When fissioning their nuclei, a very large amount of energy is released.
6. The most important fact is that for the first time scientists have proved the possibility of producing electricity in a new way.

Answer

The world's first nuclear power plant was built in Russia in June 1954. It played an important role for future nuclear power plants. The most important fact is that for the first time scientists have proved the possibility of producing electricity in a new way. It is based on a nuclear power plant using the nucleus of heavy elements - uranium and plutonium. When fissioning their nuclei, a very large amount of energy is released. It is this energy that "operates" in nuclear power plants.

Grammar tasks V-X aim at testing the nominal system of the Russian language, (gender, number, case endings of nouns, adjectives, pronouns), aspect and tense forms of the verb, conjugations, use of motion verbs with and without prefixes, knowledge of independent verb forms - participles and adverbs, prepositions, conjunctions and connectives. These are the tasks of intermediate level of difficulty. Maximum score is 8 points.

### 3.3. Grammar tests

Task V aims at testing the knowledge of the verb forms. Four sentences are given, and applicants should choose one of the verbs in brackets and put it in the right person, number, tense.

V. Write down the sentences. Instead of ellipsis, put the verbs given in brackets in the correct form.

1. The next station is Baumanskaya. ... (get off)?
2. Last year I ... (bring) souvenirs from Moscow to parents.
3. In the evening, my friend always ... (watch) interesting programs.
4. She never ... (travel) to Moscow in winter.

#### Answers

1. The next station is "Baumanskaya". Are you getting off?
2. Last year I brought souvenirs from Moscow to my parents.
3. In the evening, my friend always watches interesting programs.
4. She has never traveled to Moscow in winter.

Task VI aims at testing the case forms of the notional parts of speech: nouns, adjectives; indicative, possessive, definitive pronouns. Four sentences are given, and applicants should put in the right case the phrases given in the initial form, nominative singular.

VI. Write down the sentences, putting the words in brackets in the correct form.

1. We will go on a tour with (our teacher).
2. We know that (the Tretyakov Gallery) is visited by many students.
3. Are you interested in (this exhibition)?
4. I gave (my elder brother) a new disc for his birthday.

Task VII aims at testing the skills of transforming sentences, as well as the knowledge of a particular form of the verb - participle (voice, time, gender, number, case) and adverbial participle (kind). At the same time, the knowledge of the prepositional and case system of the Russian language, the structure of simple and complex sentences is assessed.

There are four complex sentences with relative clauses, which should be replaced with participial constructions with active or passive participles. At the same

time, applicants should pay special attention to the conformity of the verb type with the type of the participle used.

Let us note that the task number VII is especially important for foreign applicants of technical universities, as the use of participles is typical for academic writing.

VII. Use simple sentences with participial constructions instead of complex sentences with *wh*-clauses.

1. A famous scientist who works at our university is now speaking at the conference.
2. In the book which my friend read there is a lot of new information.
3. I know the engineer who is carrying out this research.
4. The problem which the students solved is very difficult.

Answers

1. A famous scientist working at our university is now speaking at the conference.
2. In the book read by my friend there is a lot of new information.
3. I know the engineer carrying out this research.
4. The problem solved by the students is very difficult.

Task VIII aims at testing the skills of transforming sentences, as well as the knowledge of a special form of the verb - adverbial participle.

Four complex sentences with subordinate clauses of time are given. They should be replaced with adverbial participial constructions. At the same time, applicants should pay special attention to the conformity of the type of verb with the type of the adverbial participle used. This task is also relevant for foreign applicants of technical universities.

VIII. Use simple sentences with adverbial participles instead of complex sentences.

1. When the students passed the exams, they went home.
2. When I was doing the task, I tried not to ask many questions to the teacher.
3. When the teacher opened the door, she entered the classroom and greeted the students.
4. When we were leaving home, we hoped to return to Moscow soon.

Task IX aims at testing the knowledge of the auxiliary parts of speech - prepositions, most often used both in speaking and in writing. Applicants are given four sentences, and they should choose 8 out of 10 simple prepositions from the list and use two of them in each sentence. It is not allowed to use the same prepositions more than once.

IX. Write down the sentences by inserting necessary prepositions instead of ellipsis (in, on, above, at, for, around, to, under, near, from).

1. We were walking ... the museum for a long time, stopping ... of each exhibit.
2. He came ... another city ... his friend.
3. There was a picture ... wall ... table.
4. I live ... a university ... a student dormitory.

Answers

1. We were walking around the museum for a long time, stopping at each exhibit.
2. He came from another city to his friend.
3. There was a picture on the wall above the table.
4. I live near the university in a student dormitory.

Task X aims at testing the knowledge of the auxiliary parts of speech - conjunctions, connectives, relative pronouns most often used in both speaking and in writing. Applicants are given eight sentences, and they should choose 8 out of 10 conjunctions or connectives from the list and use them in each sentence. Let us note that the use of the relative pronouns "which" and "who" requires knowledge of the prepositional and case forms. It is not allowed to use conjunctions, connectives and relative pronouns more than once.

X. Write down the sentences and insert the right words instead of ellipsis (where, where from, how long, when, why, what, that, which, because).

1. My friend ... I am meeting in the park called me today.
2. She was looking forward to living in the city ... her mother studied.
3. He did not tell me ... he was traveling to.
4. I was asked about the place ... I came from
5. No one can even imagine ... he has been dreaming to enter the university.

6. I don't understand ... he decided to do so.
7. We will meet you ... you arrive.
8. I am sure ... you need to thoroughly revise for your exams.

The effectiveness of the proposed methodology was tested in trial training and proved the correctness and necessity of this type of final control.

#### **4. Tests of the second type - for future Master's Degree students**

##### ***4.1. Structure, Basic Documents of Tests of the Second Type.***

Tests of the second type, designed for future Master's Degree students, are significantly different in content from tests of the first type. They represent the so-called "connection" of the standard test of general knowledge of Russian as a foreign language, i.e. First Certification Level, with a test of scientific style, i.e. profession-oriented.

The total testing time is also 3 academic hours. Testing includes subtests: 1) on vocabulary and grammar, 2) on listening and writing, 3) on reading, 4) on speaking.

All tests are based on existing documents and meet the requirements for passing the exam for the First Certification Level (State Educational Standard for Russian as a Foreign Language, 1999; Lexical Minimum for Russian as a Foreign Language, 2011; Russian Language Program for Foreign Citizens, 2012; Requirements for the First Certification Level of Proficiency in Russian as a Foreign Language, 2011).

##### ***4.2. Subtests for Future Master's Degree Students***

The subtest "Vocabulary. Grammar" aims at testing knowledge, skills and abilities in the field of vocabulary and grammar in the general language and scientific language and contains 100 test items: 80 are in the general language, 20 are in scientific language. The subtest time is 50 minutes.

The vocabulary and grammar test consists of 4 parts. In the first three parts, knowledge of the general language is tested. At the same time, testing is carried out on the grammar topics that cause the greatest difficulties for students: "Case forms in the plural case", "Participle and adverbial participle", "Types of verbs", "Motion verbs with prefixes", "Complex sentence". The fourth part includes tests on the scientific style. These tasks contain basic grammatical constructions typical for educational and scientific texts intended for students majoring in non-philological sciences.

In order to determine the most frequent grammatical constructions of a scientific style, we analyzed texts from a number of textbooks and workbooks on fundamental engineering subjects, such as physics, mathematics, computer science, engineering graphics, chemistry, recommended for Russian students of polytechnic universities. The following constructions appear to be the most frequent: what is called what, what is what, what is determined by what, what is supposed as what, what is like what, what has what, what is equal to what, what is determined by what, what is used where, what is applied where, what is considered what, what is characterized by what, what depends on what, what forms what, what changes what, what is obtained where, what constitutes what, what leads to what, etc. The established constructions were included in the test (Pinevich, 2011).

Subtest 1. Vocabulary. Grammar. Choose the correct option.

1. Marina ... the apartment all day long. (was cleaning, was collecting, was going).
2. Artists perform on holidays .... (Moscow squares, to Moscow squares, in Moscow squares).
3. I should ... a souvenir from Moscow for my sister (bring, carry, transport).
4. My scientific adviser told me ... I had to come to him (that, what).
5. The team that won the game with the Canadians became the champion (that was won, that is winning, that won).
6. ... for the test, she decided to watch a new film (having been revised, having revised, revising)
7. He doesn't know ... come (he can, if he can).
8. The base of the cylinder and cone ... the form of a circle (is called, is, has).
9. It is possible to measure the atmospheric pressure ... a barometer (by the way, by using, with the method).

Answers

1. Marina was cleaning the apartment all day long.
2. Artists perform on holidays in Moscow squares.
3. I should bring a souvenir from Moscow for my sister.
4. My scientific adviser told me that I had to come to him.

5. The team that won the game with the Canadians became the champion.
6. Having revised for the test, she decided to watch a new film.
7. He doesn't know if he can come.
8. The base of the cylinder and cone has the form of a circle.
9. It is possible to measure the atmospheric pressure by using a barometer.

The subtest Reading includes two texts. The first one is the general language testing. It is based on texts containing a fragment from a guidebook or a biography of a Russian scientist. The second one is the scientific language testing. Its purpose is to test the understanding of the content of a fragment of the academic and scientific texts. Applicants do the task during 30 minutes. The subtest consists of 14 tasks, five of which are scientific language tasks. They aim at testing the skills of searching for basic and additional information, identifying and summarizing it.

When making up the test, we paid special attention to the selection of scientific language texts. We carried out a survey among foreign students, which showed that 60 % of future Master's Degree students of technical universities are interested in scientific language texts, 15 % of them prefer scientific popular style, while 25 % of respondents like publicistic style. 73 % of students in the Preparatory Department of an engineering university prefer physics to all other subjects, while 20 % prefer computer science, 5 % are interested in maths, and only 2 % singled out engineering graphics and chemistry.

Relying on the survey data and bearing in mind the fact that physics is a necessary component of fundamental training in engineering universities, we came to the conclusion that we should choose physics texts to test knowledge, abilities, reading and listening skills.

Since at the preparatory stage of education it is not possible to give the original texts in full, we give fragments of authentic texts from textbooks and workbooks. Having analyzed the types of academic texts in terms of the ways of presentation appropriate to the training of future Master's Degree students, we found that the most frequent are argumentative and reasoning texts.

Therefore, it was these types of texts which were offered to students in reading and listening tasks. As an example, we present the scientific language text, since general language tests are widely represented in academic literature.

Subtest 2. Reading. Read text 2 - a fragment of scientific language text. Do the tasks after the text. Choose the option that most fully and accurately reflects the content of the text.

Electric current is a phenomenon of directed movement of charged particles. The property of a substance to conduct an electric current under the action of an electric field is called electrical conductivity. All substances, depending on the electrical conductivity, are divided into conductors, dielectrics and semiconductors.

The main property of conductive substances or conductors is their high electrical conductivity. Conductors are divided into two kinds. In conductors of the first kind, which include all metals and their alloys, electric current is created by the movement of electrons only. The best conductors are silver, copper, aluminum.

The conductors of the second kind, or conductors with ionic conductivity, are melts of some salts and aqueous solutions of acids, salts, alkalis, etc. In melts and solutions, regardless of the passage of current, their neutral molecules decompose into positive and negative ions. Positive ions are metal ions and hydrogen, negative ones are acid residues and a hydroxyl group (OH). Melts and solutions of substances that are partially or completely composed of ions are also called electrolytes.

If an electric field is created in such a conductor, then the field forces will cause the movement of positive ions in the direction of the field, and negative ones in the opposite direction. Their movement is the conduction current in the electrolyte.

Tasks 10 - 14. Choose the right option.

10. The text is called:

- A) "Electric current";
- B) "Electrical conductivity";
- C) "Conductors";
- D) "Electrolytes".

11. Which conclusion is the best for the text you read:

- A) if an electric field is created in conductors with ionic conductivity, then the field forces will cause the movement of positive ions in the direction of the field, and negative ones - in the opposite direction;
- B) in conductors, an electric current is created by moving only electrons;
- C) all substances are divided into conductors, dielectrics and semiconductors depending on electrical conductivity;
- D) electric current in the conductors of the first kind is carried out by the flow of electrons, and in the conductors of the second kind the movement of substance occurs in the form of ions.



Tasks 12- 14. Choose the statements that match the text.

12. All substances, depending on conductivity, are divided into:

A) conductors, dielectrics and semiconductors;

B) conductors, dielectrics;

C) dielectrics and semiconductors.

13. The main property of conductive substances or conductors is their ...

A) low electrical conductivity;

B) high electrical conductivity;

C) the lack of electrical conductivity.

14. If an electric field is created in the conductor, then the field forces will cause movement of

A) negative ions in the direction of the field, and positive ones - in the opposite direction;

B) positive ions in the direction of the field, and negative ones - in the opposite direction;

C) positive and negative ions in the direction of the field.

Answers: 10 - C, 11 - A, 12 - A, 13 - B, 14 - B.

Listening as a type of speech activity has always been difficult for students, especially listening to scientific language lectures. In the subtest Listening students are given two types of the text: a biography of a famous person or an extract from a radiobroadcast about an interesting place and a fragment of a scientific language lecture. The texts are presented once. By means of this subtest, we assess the formation of the skills of listening comprehension of both the main content and particular information from a fragment of the lecture. The specificity of the subtest is that after listening to a fragment of the lecture, students must summarize its content and write it down. Thus, the subtest Writing is organically included in the subtest "Listening". Such structure makes it possible to reduce the total exam time: 35 minutes are given for the listening and writing tasks.

The subtest Writing aims at testing the skills of presenting the main content of a lecture fragment based on terms, formulas, lecture questions. These elements help the student build a written monologue. Requirements to the answer are the following: the text should be coherent; the answer should at least have 10 sentences.

Subtest 3. Listening. Subtest 4. Writing. Listen to text 2 - a fragment of the lecture. After listening to the lecture, complete the task to it. The teacher will write the terms and formulas on the blackboard.

Light sources are all bodies that emit light into the surrounding space, or all the bodies from which the light emanates. Some bodies emit light themselves. Such emitters of light are, for example, the Sun and stars, a glowing filament of an electric lamp, and all bodies with a temperature above 800°C. The bodies having temperature above 800 °C, emit not only light, but also heat, therefore they are called thermal light sources.

Other bodies from which light emanates are not self-emitters of light: they only reflect light emanating from any sources of light, i.e. they serve as sources of reflected light.

On the Earth, all bodies that are illuminated by the Sun become sources of reflected light, since all visible bodies reflect one or another part of the light falling on them.

The surface of the Moon, which is illuminated by the Sun, at night serves as a source of reflected light for us. The surface of the Earth, most of which is covered with water, perfectly reflects the light. The Earth, illuminated by the Sun, can serve as a much better source of reflected light for astronauts on the Moon than the Moon for us.

Write the main points of the lecture you listened to. You can use questions. Your answer should contain at least 10-15 sentences. When doing the task, you can use the dictionary.

- What are light sources?
- What body serves as the main source of light during the day?
- What self-emitters of light, other than the Sun, can you name?
- What bodies serve as sources of reflected light?
- For whom can the Earth be an excellent source of reflected light?
- Why does the Earth serve as a better source of light for astronauts on the Moon than the Moon for us? (Pinevich, 2013).

The final subtest, which the future Master's Degree students take, is Speaking. The subtest consists of two types of tasks: situational dialogues including at least 5 situations of everyday communication, making up a scientific language text using the words and sentences given, and its oral presentation of at least 15 sentences. The first task is done without preparation, for the second one applicants are allowed to spend 15 minutes. The total time for doing the task is 20 minutes.

Subtest 5. Speaking.

Task 1. Read the description of the situation. Start a dialogue.

1. You do not like your dorm room. You want to change it. Explain to the

dorm supervisor what room you want to receive and why.

2. Your friend is going to Russia in the winter. Tell him about the weather in this season. Give advice about clothes he will need to take with him.
3. You want to enter the Faculty of Engineering at a university. You have come to the Admissions Office. Find out what documents you need to submit, ask about the deadline for their submission, time for entrance exams, etc.
4. You have read an article that you really liked. Encourage your friend to read it and explain why.
5. You and your friends want to go on a trip to Sochi, so you have come to a travel agency. Explain where you want to go, find out everything that interests you, e.g. means of transport, time and duration of the trip, living conditions, and cost of the tour.

Task 2. Talk about Newton's discovery. You can use the following words.

Your answer should consist of at least 12 sentences.

- 1) Newton, take, tube, glass.
- 2) Scientist, use, a special device - ...
- 3) I. Newton, the device - an air pump, eliminate the air, i.e. create a vacuum.
- 4) Scientist, observe, fall, feather, piece, lead.
- 5) Newton, set, fall, same, speed.
- 6) He, prove, Galileo, a hypothesis.
- 7) Newton, prove, body, different, mass, fall, same, speed, vacuum.
- 8) Scientist, so, check, Galileo, hypothesis.

Using the above keywords when answering a question allows the teacher to assess the formation of the language and speech competence of the student. Moreover, it helps the students create their own texts, rather than reproduce the learned and prepared texts on the topics studied.

## 5. Conclusion

The tests proposed above have been successfully tested over several years, which resulted in significant optimization of the learning process.

The students of the Preparatory Department, who purposefully studied the scientific language and were systematically trained for the testing, showed good results in all types of speech activity, had less difficulty in learning and listening to lectures, unlike other foreign students. Successful passing of these tests testified to the level of language, speech and cognitive-communicative competencies of foreign applicants that is sufficient for studying Russian in technical universities of the Russian Federation.

In conclusion, it is worth mentioning that the creation and development of new tests will contribute to the further development and improvement of methods and techniques for monitoring the knowledge and skills of foreign students, as well as the effectiveness and optimization of the educational process as a whole.

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