Federal state autonomous educational institution
Higher Education "Peoples' Friendship University of Russia"
Agrarian Technological Institute

PROGRAM
STATE CERTIFICATE CERTIFICATION

Direction of training: 35.04.09 “Landscape Architecture”

Specialization: «Management and Design of Urban Green Infrastructure»

Graduate qualification: Master

2022 г.

1. General provisions

1.1. Responsibility and procedure for preparing and conducting state final tests at PFUR, as well as the list, order and deadlines for passing documents required for carrying out state final attestation between structural units, determines the procedure for conducting final state attestation of students.

1.2. The state final certification in the direction of 35.04.09 "Landscape Architecture" includes preparation for passing and passing the state exam (if the organization included the state exam in the state final certification) in the direction of "Modern landscape architecture and design of the urban environment" and the protection of final qualifying work in the form oral presentation of the WRC, followed by oral responses to questions from members of the SEC in accordance with the University Regulations on the WRC.

1.3. The results of any type of certification tests included in the state final certification are determined by the marks “excellent”, “good”, “satisfactory”, “unsatisfactory”.

1 Aims and objectives of the state final certification

2.1. The purpose of the state final certification is to determine compliance the results of mastering students of basic educational programs of the requirements of the educational standards.

The state exam is held in 2 parts: test and written. 60 minutes are allotted for the test, 150 minutes are given for the examination.

The exam tickets include 4 questions. Evaluated the completeness and correctness of the answer, literacy presentation. The maximum score for each question is 20. The test part is estimated at 20 points. The maximum number of points for the exam - 100.

2.2. The tasks of the state final certification are:

- Checking the quality of personal education of basic natural science laws and phenomena, necessary in professional activities;
- Determining the level of theoretical and practical readiness of a graduate to performance of professional tasks in accordance with the qualifications obtained;
- Establishing the degree of the individual’s striving for self-development, enhancing his qualifications and skills;
- verification of the formation of sustainable motivation for professional activities in accordance with the types of professional education provided by the educational standard;
- Verification of the ability to find organizational and managerial decisions in non-standard situations and willingness to take responsibility for them;

- Ensuring the integration of education and scientific and technical activities, increasing the effectiveness of the use of scientific and technological achievements, the reform of scientific spheres and stimulation of innovation activity;
- Ensuring the quality of training in accordance with the requirements of the educational standard.

3. State Exam Program

3.1. The state exam is held in 2 parts: test and written. 60 minutes are allotted for the test, 150 minutes are given for the examination.

The exam tickets include 4 questions. Evaluated the completeness and correctness of the answer, literacy presentation. The maximum score for each question is 20. The test part is estimated at 20 points. The maximum number of points for the exam - 100.

3.2. As part of the state exam, the degree of mastering is checked graduates of the following competencies**:**

universal competencies (UC):

- Able to search, critical analysis problem situations based on a systematic approach, develop an action strategy (UC -1);
- Able to manage a project at all stages of its life cycle (UC -2);
- Able to organize and manage the work of the team, developing a team strategy to achieve the goal (UC -3).
- Able to apply modern communication technologies in the state language of the Russian Federation and foreign language (s) for academic and professional interaction (UC - 4).
- Able to analyze and take into account the diversity of cultures in the process of intercultural interaction (UC - 5).
- Able to determine and implement the priorities of their own activities and ways to improve them on the basis of self-esteem (UC -6).

professional competencies (GPC)*:*

- Able to analyze modern problems of science and production, solve complex (non-standard) tasks in professional activities (GPC-1);
- able to transfer professional knowledge with using modern pedagogical techniques (GPC -2);
- Able to develop and implement new effective technology in a professional activities (GPC -3).
- Able to conduct research, analyze the results and prepare reporting documents (GPC -4).
- Able to carry out a feasibility study of projects in professional activities (GPC -5).
- Able to manage teams and organize production processes (GPC -6).

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professional competencies (PC):

production and technological activity:

- readiness for the design of technological processes for the engineering preparation of the territory, construction and maintenance of landscape architecture objects (PC-1);
- the ability to assess the effectiveness of the use of materials, equipment, technological processes at landscape architecture objects (PC-2);
- the ability to assess the impact of measures for the rational use and management of landscapes, taking into account improving the quality and safety of the human environment (PC-3);
- the ability to implement measures for external landscaping and landscaping to create favorable sanitary and hygienic conditions, to increase the level of comfort of a person's stay in an urban environment, its general aesthetic enrichment (PC-4);
- the ability to develop and implement a system of measures to preserve plantings in the interests of ensuring the right of every citizen to a favorable environment (PC-5);
- readiness to organize urban monitoring and inventory work on landscape architecture objects, compiling a green space inventory (PC-6);

organizational and management activities:

- ability to organize and conduct all types of work on landscape architecture objects (PC-9);
- readiness to manage landscape architecture objects in the field of their functional use, protection and protection (PC-10);

research activities:

- readiness to obtain new knowledge and conduct applied research in the field of landscape architecture (PC-16);
- ability to develop work plans and research programs in the field of landscape architecture, the ability to organize the collection, processing, analysis and
- systematization of scientific and technical information on the research topic, the choice of methods and tools for solving problems (PC-17);
- ability to prepare scientific and technical reports, reviews, publications based on the results of research in the field of landscape architecture (PC-18);

design activity:

- the ability to carry out the planning organization of open spaces, the design of the external environment, the design of landscape architecture objects, to develop restoration and reconstruction projects of territories of cultural heritage objects (PC-21);

- willingness to participate in the project activities of organizations, to work in a team of specialists related to sustainable development of territories at the stage of territorial planning and preparation of master plans for settlements and urban agglomerations (PC-22);
- willingness to develop (based on current standards) methodological and regulatory documents for the design of landscape architecture objects (PC-24);

3.3. Exam volume:

The size of the state exam is 3 credits. (108 hours)
15 tickets for 3 questions
4 test options with 30 questions

3.4. Contents of the state exam:

1. A city: definitions, categories and features?
2. Air pollution
3. Contaminants of the atmosphere and sources of contamination (pollution)
4. Heat island effect: reasons and consequences
5. Hydrosphere and global water distribution
6. Urban areas structure and functional zoning?
7. Urban ecology: problems and objects, goals and methods.
8. Urban ecosystems and urban landscapes?
9. Water use and water consumption
10. Anthropogenic impacts on the atmosphere.
11. Explain the term “plot”? What are the uses of a plot design? How do you understand the term "structure of the lines on the surface of the earth"? How do you understand the term "visual code"?
12. How do you explain the term "technology green and grey"?
13. How do you understand the term - "ecological architecture"? Name the modern eco-technologies? What is the structure of ecological construction in Europe and Scandinavia?
14. How do you understand the term "land without relief"? What are its characteristics? What are the tools of landscape with artificial relief? List them
15. List the features using of plant material in the landscape composition? What are the modern ways of using variegated forms in the urban open space?
16. Name the use of relief situation? How do you understand the term "sloping situation"? What are its characteristics? What are the tools of landscape work with the natural topography? List them.
17. What are the materials for the design of landscape model?

18. What are the objectives of the plot? What is the role of the form "wave" in the landscape design of urban space? How do you understand the term "bionic form"? How do you understand the term "history of the place?"
19. What are the tools of landscape design?
20. What do you mean by the term "layers of plant material"? What are the components of the medium volume-spatial structure of the 1st level? From what meansconsists of the volume-spatial structure of 2-nd level? From what meansconsists of the volume-spatial structure of 3-d level?
21. Bacterial diseases: Symptoms, contamination, possible losses, identification
22. Cultural control. Preparation of plant material, plant residues, fertilization, plant density
23. Fungal diseases: Symptoms, contamination, possible losses, identification
24. Main symptoms on different plant groups. Possible losses from diseases. Direct and non direct losses.
25. Methods of plant protection. Host plant resistance. Cultural, physical, chemical, biological means of plant diseases, pests and weed control. Quarantine for pathogens management.
26. Noninfectious diseases. Environment conditions/ causing plant diseases
27. Physical method of plant protection. Cooling and freezing. Drying and desicants. Modified atmospheres
28. Seeds and planting stock contamination. Identification. Possible losses.
29. Viral diseases: Symptoms, contamination, possible losses, identification
30. Viruses, viroids, bacteria, fungi. Pathogenesis in different plants.

4. Recommended reading:

a) main literature:

1. M.I. Gerasimova, M.N. Strogonov, N.V. Mozharova, T.V. Prokofiev "Anthropogenic soil" - M: 2003 - 268 p.
2. Denisov V.V., Kurbatov A.S., Denisova I.A., Bondarenko V.L., Grachev V.A., Gutenev V.V., Nagnibeda B.A. "Ecology of the city". M .: Rostov n / a: 2008-832 p.
3. A.S. Kurbatov, V.N. Bashkin, N.S. Kasimov “Ecology of the city”. - M .: 2004 - 624 p.
4. Kurbatov V.Ya. A General History of Landscape Art. Gardens and Parks of the World.- M., 2007.
5. Ozhegov S.S. History of landscape architecture. -M., 2004.
6. Sokolskaya OB Landscape art. Formation and development: Textbook. 2nd ed., Pererab. and add. - SPb .: “Lan” publishing house, 2013.-552c.
7. Theodoronsky V.S. Landscape gardening. Textbook for universities. M. MGUL 2003.- 335s.
8. Theodoronsky V.S., Sabo E.D., Frolova V.A. Construction and operation of landscape architecture objects. M. Izd., "ACADEMY" - 2008 348c.

9. Fatiev M.M., Theodoronsky V.S. Construction and operation of urban landscaping. Tutorial. M .: FORUM, 2011. - 240 p.
10. Fatiev M.M. Construction of urban landscaping facilities. Textbook. Publishing Forum; SIC INFRA-M Moscow. 2012.- 208 p.
11. Ecology - Textbook. manual / Ed. S.A. Bogolyubov. M: Knowledge, 1997.
12. Ecology, environmental protection, environmental safety / Ed. IN AND. Danilov-Danilyana. M .: Publishing house MNEPU, 1997

b) additional literature:

1. Vladimirov V.V., Davidyants G.N., Rastorguev OS, Shafran V.L. Engineering training and improvement of urban areas. M. Izd., "Architecture" - 2004. 236s.
2. Urban planning. Planning and development of urban and rural settlements. SNiP 2.07.01-89 * Moscow 2005 56c.
3. The rules and regulations for the design of integrated improvement in the territory of the city of Moscow. MGSN 1.02-02. Moscow 2002- 71s.
4. Rules for the creation, maintenance and protection of green spaces in Moscow. Moscow 2002 Ed. Department of environmental management.
5. Urban planning. Planning and development of urban and rural settlements. SNiP 2.07.01-89 * Moscow 2005 SP 11-102-97 Engineering and environmental surveys for construction.
6. Rules for the creation, maintenance and protection of green spaces in Moscow. The government of Moscow. Department of nature management and environmental protection. Moscow 2002. 140s
7. Rules and regulations for the design of integrated improvement in the territory of the city of Moscow. MGSN 1.02-02. The government of Moscow. 2002.71s.
8. Norms and rules of planning and development of the city of Moscow MGSN 1.01-99. Moscow 2000g-113s.
9. GOST 21.508-85. “General plans of enterprises, structures and housing and civil facilities. Working drawings".
10. GOST 17 2.1.03-84. Nature Conservation Atmosphere Terms and definitions of pollution control.
11. GOST 17.1 1 02-77. Protection of Nature. Hydrosphere. Classification of water bodies
12. GOST 17.1.1.01-77. Protection of Nature. Hydrosphere. Use and protection of waters. Basic terms and definitions.
13. GOST 17.1.3.13-86. Protection of Nature. Hydrosphere General requirements for the protection of surface water from pollution.
14. GOST 17.2 3.01-76. Protection of Nature. Atmosphere. Emission classification by composition

15. GOST 17.2.1.02-76 Nature protection. Atmosphere. Terms and definitions of emissions of motor vehicles, tractors, self-propelled agricultural and road-building machines.
16. GOST 17.2.1.04-77. Protection of Nature. Atmosphere Sources and meteorological factors of pollution, industrial emissions. Terms and Definitions. Collection of regulatory materials on environmental protection. Prince 4. Protection of water bodies Sanitary requirements for the design of domestic water supply facilities. M, 1994.
17. GOST 17.2.3.01-86. Nature Conservancy Atmosphere. The rules of air quality control of settlements.
18. GOST 17.2.4.02-81. Protection of Nature. Atmosphere. General requirements for methods for the determination of pollutants
19. GOST 17.4 2.03-86. Soil Nature Conservation. Soil passport
20. GOST 17.4.1 02-83. Protection of Nature. Soils. Chemical classification for pollution control
Databases, reference and search engines:
www.elibarary.ru, www.twirpx.ru

5. Evaluation tools designed to establish during the certification tests Compliance / non-conformity of the level of training graduates who have completed the development of EP

A graduate who has mastered the master program should have the following universal competencies (UC):

- Able to search, critical analysis problem situations based on a systematic approach, develop an action strategy (UC -1);
- Able to manage a project at all stages of its life cycle (UC -2);
- Able to organize and manage the work of the team, developing a team strategy to achieve the goal (UC -3).
- Able to apply modern communication technologies in the state language of the Russian Federation and foreign language (s) for academic and professional interaction (UC - 4).
- Able to analyze and take into account the diversity of cultures in the process of intercultural interaction (UC - 5).
- Able to determine and implement the priorities of their own activities and ways to improve them on the basis of self-esteem (UC -6).

A graduate who has mastered the master's program must have the following general professional competencies (GPC):

- Able to analyze modern problems of science and production, solve complex (non-standard) tasks in professional activities (GPC-1);

- able to transfer professional knowledge with using modern pedagogical techniques (GPC -2);
- Able to develop and implement new effective technology in a professional activities (GPC -3).
- Able to conduct research, analyze the results and prepare reporting documents (GPC -4).
- Able to carry out a feasibility study of projects in professional activities (GPC -5).
- Able to manage teams and organize production processes (GPC -6).

A graduate who has mastered the master's program must have professional competencies (PC) corresponding to the type (types) of professional activity to which (which) the master's program is oriented:

production and technological activity:

- readiness for the design of technological processes for the engineering preparation of the territory, construction and maintenance of landscape architecture objects (PC-1);
- the ability to assess the effectiveness of the use of materials, equipment, technological processes at landscape architecture objects (PC-2);
- the ability to assess the impact of measures for the rational use and management of landscapes, taking into account improving the quality and safety of the human environment (PC-3);
- the ability to implement measures for external landscaping and landscaping to create favorable sanitary and hygienic conditions, to increase the level of comfort of a person's stay in an urban environment, its general aesthetic enrichment (PC-4);
- the ability to develop and implement a system of measures to preserve plantings in the interests of ensuring the right of every citizen to a favorable environment (PC-5);
- readiness to organize urban monitoring and inventory work on landscape architecture objects, compiling a green space inventory (PC-6);

organizational and management activities:

- ability to organize and conduct all types of work on landscape architecture objects (PC-9);
- readiness to manage landscape architecture objects in the field of their functional use, protection and protection (PC-10);

research activities:

- readiness to obtain new knowledge and conduct applied research in the field of landscape architecture (PC-16);
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- systematization of scientific and technical information on the research topic, the choice of methods and tools for solving problems (PC-17);
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design activity:

- the ability to carry out the planning organization of open spaces, the design of the external environment, the design of landscape architecture objects, to develop restoration and reconstruction projects of territories of cultural heritage objects (PC-21);
- willingness to participate in the project activities of organizations, to work in a team of specialists related to sustainable development of territories at the stage of territorial planning and preparation of master plans for settlements and urban agglomerations (PC-22);
- willingness to develop (based on current standards) methodological and regulatory documents for the design of landscape architecture objects (PC-24);

Scale scores for the oral answer at the interdisciplinary exam:

Score "5" (excellent) is set if:

- the content of the examination ticket material is fully disclosed;
- the material is presented correctly, in a certain logical sequence;
- demonstrated systemic and in-depth knowledge of the program material;
- accurately used terminology;
- shows the ability to illustrate theoretical positions with specific examples, apply them in a new situation;
- assimilation of previously studied related issues was demonstrated, the formation and sustainability of competencies and skills;
- the answer sounded independently, without leading questions;
- demonstrated the ability to creatively apply the knowledge of the theory to the solution professional tasks;
- demonstrated knowledge of modern educational and scientific literature;
- Allowed one - two inaccuracies in the coverage of secondary issues that corrected by the remark.

A rating of "4" (good) is set if:

- questions of the examination material are presented systematically and consistently;
- demonstrated the ability to analyze the material, but not all conclusions are reasoned and evidentiary;
- demonstrated the mastery of the main literature.

- the answer mainly satisfies the requirements for the assessment of “5”, but it has one of the disadvantages: in the presentation of small spaces that do not distort the content of the answer;
- One or two shortcomings were made when covering the main content of the answer, corrected as noted by the examiner;
- a mistake or more than two shortcomings were made when covering minor issues, which are easily corrected by the notice of the examiner.

A rating of "3" (satisfactory) is set if:
- the content of the material is incomplete or inconsistent, but the general is shown understanding of the issue and demonstrated skills sufficient for further learning material;
- mastered the main categories on the subject and additional issues;
- there were difficulties or mistakes in the definition of concepts, use terminology corrected after several leading questions;
- with incomplete knowledge of theoretical material revealed insufficient the formation of competencies and skills, the student can not apply the theory in a new situation;
- demonstrated the mastery of the main literature. A rating of "2" (unsatisfactory) is set if:
- not disclosed the main content of educational material;
- Ignorance or misunderstanding of most or most important material;
- mistakes are made in the definition of concepts, when using terminology, which not corrected after several leading questions.
- not formed competencies, abilities and skills.

6. Requirements for final qualifying work

6.1 A student who has passed the state exam (with availability). The WRC is defended at an open meeting of the State Examination Commission (SEC).

The state final certification is held in the form of an oral presentation of the WRC, followed by oral responses to questions from members of the SEC in accordance with the Regulations University of the WRC. The report and / or answers to the questions of the members of the GEC can be on foreign language.

6.2 The topic of a Master's WRC should be relevant, represent scientific and practical interest and match selected direction (and educational program) preparation. In the formation of the subject of graduate works.

The department takes into account the following factors:
- relevance of the topic;
- compliance with the theme of the scientific profile of the department;
- provision of basic data, information
resources and literary sources;

- compliance with the theme of individual abilities and
master's interests;
- a variety of topics.

The topic should be formulated in such a way that most specifically reflected the main idea of the work. Title topics should not coincide with the name of the direction (program) preparation, but it should be formulated within the framework of this directions (programs).

The topic of master's work can be recommended by the department either graduate can offer his topic with a rationale the feasibility of its development. It is necessary to take into account eight
general requirements for the formulation of the topic: the limit conciseness, problemness, clarity of meaning (clarity), harmonious sound.

When choosing the topic of master's work is necessary consider the relevance of the theme to the research profile and qualifications supervisor.

6.3. The list of recommended topics for final qualifying works in the direction of 35.04.09 “Landscape architecture”

1. Landscape improvement of the park (square, street, courtyard area, embankment, and so on)
2. Reorganization of the park (square, street, courtyard area, embankment, and so on).
3. Design proposal of the park (square, street, courtyard area, embankment, and so on)

6.4. The tasks that the student must solve in the process of performing final qualifying work:

Final qualifying work (hereinafter - WRC) should have an independent, holistic and complete character, a logical structure reflecting the relationship between the phenomena under consideration, arguments, generalizations, conclusions and recommendations given by the author. When writing a WRC, a thorough analysis of the degree of elaboration of the topic should be presented, and the main concepts on the subject matter should be described.

The work should have a significant scientific novelty, including the identification of new facts, trends, consideration of new aspects of the object of study or analysis of previously known provisions from other scientific positions.

At the same time, in contrast to dissertations for academic degrees, which are thorough research works, the scientific novelty of which is determined by the contribution to the development of the relevant field of scientific knowledge, WRC bachelor’s degrees can still be attributed to a special type of scientific work, whose

scientific novelty may consist in modification and substantial clarification or original generalization of already known concepts and scientific provisions.

In the process of preparing and protecting a WRC, a graduate must demonstrate:

• knowledge gained from academic disciplines that take into account both the focus of the educational program and specialization in general;

• ability to work with special and methodical literature, including literature in a foreign language, regulatory documentation, statistical information;

• research skills;

• the ability to self-summarize the results of the study and formulate conclusions;

• possession of a computer and special software as an information processing tool;

• the ability to logically construct the text, formulate conclusions and suggestions.

6.5. The stages of the implementation of final qualifying work (WRC), the conditions for admitting a student to the protection procedure, requirements for structure, scope, content and design, as well as a list of required and recommended documents submitted for protection are specified in the guidelines approved in the prescribed manner: "Guidelines for writing the final qualifying work in the direction 35.04.09 "landscape architecture"

6.6 **Evaluation tools** The state interdisciplinary exam consists of 2 stages - the mandatory test part and the main oral exam.

The test part includes 30 questions in the computer program "Mentor", which are formed by the student when answering in random order.

The questions of the test part are reflected in the Funds of GIA Assessment Funds.

For the correct performance of all tasks, the graduate can receive up to 100 points in accordance with the grading scale.

Grading criteria.

Points	**Russian marks**	**ESTC Marks**
95-100	5	A
86-94		B
69-85	4	C
61-68	3	D
51-60		E
31-50	2	Fx
0-30		F
51-100	Зачет	Passed

To evaluate the results of the test part, the direct dependence of the sum of points scored on the number of correct answers to the test questions is used. 1 correct answer gives 1 point. The test includes 100 questions and allows the graduate to get 25 points. The final result is calculated automatically by the Mentor program.

At the same time, a graduate who has scored 51 percent or more receives a rating of “satisfactory”, “good” or “excellent” depending on the points scored and is considered admitted to the main part of the MDE.
The assessment obtained at testing is not reflected in the final documents, however, it is taken into account in case of disagreement among the members of the attestation commission when evaluating the results of the main part of the MRE.
If the graduate scored less than 51 percent and received a rating of "unsatisfactory", he is given another attempt to pass the test part of the MDE in the timeline preceding the main part of the MDE. In the case of re-receiving an unsatisfactory grade, the graduate is considered not to have mastered the main educational program and is not allowed until further passing of the state final attestation.
The main part of the MDE is held in the form of a written exam. A bachelor graduate must demonstrate his level of mastery of core competencies in accordance with OS VO RUDNU / GEF VO in direction 35.03.10 "Landscape Architecture" when answering questions of an examination card.
Examination ticket for the main part of the exam includes 5 questions in the following disciplines: Decorative Dendrology, History of Landscape Architecture, Urboecology and Monitoring, Construction and Maintenance of Landscape Architecture Objects, Landscape Design.
For each answer you can get a maximum of 15 points. Thus, for a written exam, you can get a maximum of 75 points.
The scores of the test part and the written exam are summarized.
The mark "excellent" (86-100 points) is set if:
- the content of the examination ticket material is fully disclosed:
- The material is presented correctly, in a certain logical sequence;
- demonstrated systemic and in-depth knowledge of the program material;
- accurately used terminology;
- the ability to illustrate theoretical positions with concrete examples is shown, to apply them in a new situation;
- demonstrated the assimilation of previously studied related issues, the formation and sustainability of competencies and skills;
- the answer sounded independently, without leading questions;
- demonstrated the ability to creatively apply the knowledge of the theory to solving professional problems;
- demonstrated knowledge of modern educational and scientific literature;
- Allowed one or two inaccuracies in the coverage of minor issues that are corrected by the remark.
The mark "good" (69-85 points) is set if:
- questions of the examination material are presented systematically and consistently;

- demonstrated the ability to analyze the material, however, not all conclusions are reasoned and demonstrative;
- demonstrated the mastery of the main literature;
- the answer mainly satisfies the requirements for the assessment “5”, but at the same time it has one of the drawbacks:
• in the presentation of small gaps that do not distort the content of the answer;
• One or two shortcomings were made in covering the main content of the answer, corrected on the remark of the examiner;
• a mistake or more than two shortcomings were made when covering minor issues that are easily corrected by the examiner's remark.
Score "satisfactory" (51-68 points) is set if:
- the content of the material is incompletely and inconsistently disclosed, but a general understanding of the issue is shown and skills sufficient for further mastering the material are demonstrated;
- the main categories on the subject and additional issues were learned;
- there were difficulties or mistakes in the definition of concepts, the use of terminology, corrected after several leading questions;
- with incomplete knowledge of theoretical material, insufficient formation of competences and skills was revealed, the student cannot apply the theory in a new situation;
- demonstrated the mastery of the main literature.

The rating of "unsatisfactory" (less than 51 points) is set if:
- the main content of the educational material is not disclosed;
- Ignorance or misunderstanding of the most or most important part of the educational material was found;
- mistakes are made in the definition of concepts, etc. and using terminology that is not corrected after several leading questions;
- the competencies, abilities and skills envisaged by the OS VO RUDN / GEF VO in the direction of 38.03.01 Economics are not formed.
The final results of the MDE are announced by the Chairperson of the SEC in the presence of all the participants in the state final certification.

Questions for the state exam “Management and design of urban green infrastructure”

1. A city: definitions, categories and features?
2. Air pollution
3. Contaminants of the atmosphere and sources of contamination (pollution)
4. Heat island effect: reasons and consequences
5. Hydrosphere and global water distribution

6. Urban areas structure and functional zoning?
7. Urban ecology: problems and objects, goals and methods.
8. Urban ecosystems and urban landscapes?
9. Water use and water consumption
10.Anthropogenic impacts on the atmosphere.
11. Explain the term–“plot”? What are the uses of a plot design? How do you understand the term "structure of the lines on the surface of the earth"? How do you understand the term "visual code"?
12. How do you explain the term "technology green and grey"?
13. How do you understand the term - "ecological architecture"? Name the modern eco-technologies? What is the structure of ecological construction in Europe and Scandinavia?
14. How do you understand the term "land without relief"? What are its characteristics? What are the tools of landscape with artificial relief? List them
15. List the features using of plant material in the landscape composition? What are the modern ways of using variegated forms in the urban open space?
16. Name the use of relief situation? How do you understand the term "sloping situation"? What are its characteristics? What are the tools of landscape work with the natural topography? List them.
17. What are the materials for the design of landscape model?
18. What are the objectives of the plot? What is the role of the form "wave" in the landscape design of urban space? How do you understand the term "bionic form"? How do you understand the term "history of the place?"
19. What are the tools of landscape design?
20. What do you mean by the term "layers of plant material"? What are the components of the medium volume-spatial structure of the 1st level? From what meansconsists of the volume-spatial structure of 2-nd level? From what meansconsists of the volume-spatial structure of 3-d level?
21. Bacterial diseases: Symptoms, contamination, possible losses, identification
22. Cultural control. Preparation of plant material, plant residues, fertilization, plant density
23. Fungal diseases: Symptoms, contamination, possible losses, identification
24. Main symptoms on different plant groups. Possible losses from diseases. Direct and non direct losses.
25. Methods of plant protection. Host plant resistance. Cultural, physical, chemical, biological means of plant diseases, pests and weed control. Quarantine for pathogens management.
26. Noninfectious diseases. Environment conditions/ causing plant diseases
27. Physical method of plant protection. Cooling and freezing. Drying and desicants. Modified atmospheres

28. Seeds and planting stock contamination. Identification. Possible losses.
29. Viral diseases: Symptoms, contamination, possible losses, identification
30. Viruses, viroids, bacteria, fungi. Pathogenesis in different plants.

Test

1. How do you understand the term - "ecological housing" in landscape architecture?

   A forest areas

   B. presence of water objects on the territory

   C. Integration of modern technology with the means of landscape design to improve the environmental quality of the environment for its further sustainable development.

2. How do you understand the term "ecological architecture"?

   A plot on the way to the building

   B. to use the modern technology of green roofs, facades and sections on the approaches to the residential and public buildings, improving the environmental quality of the environment for its further sustainable development.

   B. green roof

3. Name the modern eco-technologies?

   A. using wind and solar energy, resource rainwater for reuse, as well as technologies of roof landscape design, the surfaces of facades and sections on the approaches to the residential and public buildings

   B. Rainwater Harvesting

   C. competent leveling of theterritory

4. What are the materials for the design of landscape model?

   A. pencils

   B. White Paper

   C. foam board, bread board knife, colored paper, wire, tooth picks, clay, glue, felt, thread, materials for felting

5. What is the feature of planning decisions of the "new city"?

   A. natural areas in the building

   B. the relationship between water and green infrastructure with a system of green

"corridors" and green communication spaces

C. convenient communication system

6. What is meant by the term "tablet"?

A. The design of the ground surface

B A plane for drawing

C. natural relief of the territory

7. What do you mean by the term "technology of green and grey"?

A. asphalt and vegetation

B. ratio of natural and artificial materials in the proposed design, the ground surface

B. green and gray

8. How do you understand the term "collage"?

A. The creative aspect of the work of the landscape designer, which is manifested by the development stage of preliminary proposals

B. the idea of conceptual proposals

C. concept offers

9. As you understand the term "structure of the lines on the surface of the earth"?

A. The opportunity to walk in the direction of

B. visual code

C. Use different colors of paving

10. How do you understand the term "visual code"?

A. code consisting of numbers

B. Use different colors of paving

C. Structure of the lines on the ground, helping the person to intelligently navigate in space

11. List the properties of water used in the landscape environment of the city?

A. The ability to be in a state of rest, stress, produce noise, be in a finely divided state, to improve the environmental characteristics of the medium

B. freeze

C. to move into a fine state

12. How do you understand the term "the layers of plant material"?

A. The vegetation of the upper tier

B. Vegetation middle tier

C. volume-spatial structure of vegetation: 1st tier (lawn, ground cover plants), tier 2(shrubs), 3-tier (trees).

13. What are the new technologies of arrangement of water bodies?

A .the fountain without basement and water is located to close to the person

B. water mirror to repeat Landscapes

C. filled with fountains

14. What is the purpose of light using in the design of objects of landscape architecture?

A. increasing the time using of new contemporary landscape design and safety in the evening

15. B. Beauty

C. to highlight certain elements of the project

15. List of lighting design using in urban environment?

A. create dendrology aspects

B. to highlight the near and long-range availability of urban space

C. Peripheral areas

16. *Define urban ecology*

A) branch of science about urbanization

B) branch of science about cities

C) branch of science about interrelationships between citizens and urban environment

17.*A settlement in Russian Federation is defined as a city if*

A) a population is above 12000

B) a population is above 12000, 85% of which are not involved in the agriculture

C) 100% of the population is not involved in agriculture

18. *Which of the following cities is approximated by the concentric model of spatial organization?*

A) Saint-Petersburg

B) Moscow

C) London

19. *Micro-district is a structural unit of:*

A) industrial area

B) recreational area

C) residential area

20. *Several neighboring cities, which are strongly economically related, although the boundaries remain visible*

A) Urban agglomeration

B) Conurbation

B) Megapolis

21. *Anthropogenic risks of Earthquake include*

A) age and quality of building constructions

B) size of the area

C) location in seismic zones

22. *Young geological formations, resulted from engineering and household activity*

A) Soil

B) Sewage waters

C) Anthropogenic sediments

23. *Urban areas are defined as flooded*

A) When the ground waters are on the surface

B) Ground waters are at 1 m depths

C) Ground waters are 3 m depth or above

24. *Which are the most likely contaminants in ground waters of residential areas?*

A) chlorides, nitrates, oil products

B) oil products and heavy metal

C) organic matter, pathogenic microorganisms

25. *Physical pollution in urban areas include:*

A) vibration

B) radioactive pollution

C) salinization

26. *Urban ponds with an extent larger than 50 km^2*

A) small

B) very large

C) average

27. *Water supply is performed*

A) Up-stream from the city boundary

B) Down-stream from the city boundary

C) Within the city boundary

28. *Building-up of the river valleys result in the following changes in run-off*

A) surface run-off decreases and underground run-off increases

B) surface run-off increases and underground run-off decreases

C) both surface and underground run-off increases

29. *Which condition is not necessary for the 1^{st} (the strictest) sanitary zone of the water supply point?*

A) at lest 200 m up-stream

B) at least 100 m at the adjacent bank

C) at least 200 m down-stream

30. *Which contaminants are more likely in domestic sewage waters?*

A) heavy metals

B) oil products

C) surface-active materials, ammonia and pathogens