

Документ подписан простой электронной подписью

Информация о владельце: Federal State Autonomous Educational establishment of higher education

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RUDN-University

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Engineering Academy
Recommended by ICSS

PROGRAMM

Name of the course - State Exam

Recommended for the program track – 27.04.05 Innovation Study

Educational program specialization - Innovation Management

Qualification (degree) of the graduate - Master

1. General Provisions

1.1. Responsibility and procedure for the preparation and conduct of state final tests at RUDN University, as well as the list, sequence, timeline for passing the documents necessary for the implementation of state final attestation, between structural divisions determines the Procedure for conducting the final state attestation of students.

1.2. Final State Examinations 27.04.05 " Innovation Study" consists of masters degree grades assessment exam and Defense of the final qualifying paper – Master's thesis

(the type of final qualifying work is indicated)

1.3. The results of any of the types of the assessment included in the state final attestation are determined by the marks "excellent", "good", "satisfactory", "unsatisfactory".

2. The purpose and objectives of the Masters Degree Grades Assessment Program: (hereinafter "GIA" for equivalent in Russian ГИА - Государственная Итоговая Аттестация) is carried out by state examination commissions and master's thesis defense committee (SEC State Examination Committee) in order to determine the compliance of the results of mastering the basic educational program "Innovation management in industries" with the requirements of the educational standard of the RUDN University, approved by the order of the rector No. 1043 of December 29, 2018 . The main objectives of the GIA are:

- completion of the competences development and benchmarking current student's competence level to the competencies provided for by the educational standard of the RUDN University in the field / specialty 27.04.05 Innovation Study (general cultural, general professional and professional - depending on the type / types of professional activity);
- benchmarking the level of theoretical and practical readiness of the graduate to solve professional problems defined by the educational standard of the RUDN University in accordance with the type / types of professional activity to which / which the educational program is focused;
- making a decision by the State Electoral Commission on awarding a student who has fully mastered the educational program, the qualification "master".

2. The program of the Final State Examination.

3.1. The state exam includes the preparation for the exam and passing the state exam, the state exam consists of two parts - a test and a written part.

3.2. As a result of mastering the educational program «Innovation management in industries in the field / specialty 27.04.05 Innovation Study the graduate must have all the general cultural, general professional and professional competencies. The benchmarking of the following competencies' level development is under assessment:

UC-1. Able to search, critically analyze problem situations based on a systematic approach, develop an action strategy

UC -2. Able to manage a project at all stages of its life cycle

UC -3. Able to organize and manage the work of a team, developing a team strategy to achieve a set goal

UC -4. Able to apply modern communication technologies in the state language of the Russian Federation and foreign language (s) for academic and professional interaction

UC -5. Able to analyze and take into account the diversity of cultures in the process of intercultural interaction

UC -6. Able to determine and implement the priorities of his own activity and ways to improve it based on self-esteem

GPC-1. Able to analyze and identify the natural-scientific essence of control problems in technical systems based on the acquired knowledge.

GPC -2. Able to formulate control problems in technical systems and substantiate methods for their solution.

- GPC -3. Able to independently acquire new knowledge, skills and abilities to solve control problems in technical systems.
- GPC -4. Able to formulate, form and apply criteria for evaluating the effectiveness of the results of the development of management systems and their implementation in the production and non-production areas.
- GPC -5. Able to collect and analyze scientific and technical information, generalize domestic and foreign experience in the field of automation and control.
- GPC -6. Able to reasonably choose and substantiate, as well as develop schematic-technical, system-technical and hardware-software solutions for automation and control systems and implement them in practice.
- GPC -7. Able to choose methods and develop control systems for complex technical objects and technological processes.
- GPC -8. Able to develop methods and carry out experiments at existing facilities with processing of results based on modern information technologies and technical means.
- GPC -9. Able to develop methodological and regulatory documents, technical documentation in the field of automation of technological processes and production, including the life cycle of products and their quality, to manage their creation.
- PC-1 Able to formulate goals, tasks of scientific research in the field of automatic control, to choose methods and means of solving problems
- PC-2 Able to apply modern theoretical and experimental methods for the development of mathematical models of the studied objects and processes related to professional activities in the direction of training
- PC-3 Able to apply modern methods of developing technical, informational and algorithmic support for automation and control systems
- PC-4 Able to organize and conduct experimental research and computer modeling using modern tools and methods
- PC-5 Able to analyze the results of theoretical and experimental research, give recommendations for improving devices and systems, prepare scientific publications and applications for inventions
- PC-6 Able to organize the work of teams of performers
- PC-7 Ready to participate in maintaining a unified information space for planning and enterprise management at all stages of the life cycle of manufactured products
- PC-8 Ready to participate in the feasibility study and functional cost analysis of the market efficiency of the product being created

3.3. The scope of the state exam: The total number of examination tickets is determined by the number of bachelors admitted to the state exam. Each exam ticket contains three questions.
(it is necessary to indicate the number of tickets and the number of questions in the ticket / the number of tests and the number of questions in the test)

3.4. Content of the state exam:

List of questions to prepare for the test stage of the state exam:

1. The method for assessing the economic efficiency of investment projects can be: (method of net present value; method of profitability and profitability index of the project; method of payback period; method of internal rate of return; method of calculating the breakeven point of the project).
2. With an offensive strategy, the cost of innovation (high; medium; low).
3. The reason for the fall in the price of a product is (a fall in the price of complementary goods; a fall in the price of productive resources; an increase in taxes on entrepreneurs; an increase in consumer income)
4. If the market price is below the equilibrium price, then (there is a surplus of goods; a buyer's market is formed; there is a shortage of goods; the price of the re-source falls)
5. The budget line on the graph shows (what the consumer wants to buy; the consumer's equilibrium; what the consumer can buy, the minimum frontier of possibilities).
6. Homogeneous products are produced at 2 firms with partial price control. It is (duopoly; oligopoly; pure monopoly; monopolistic competition).

7. If the nominal rate is 10%, and the inflation rate is 4% per year, then the real interest rate (-6%, 10%, 6%, 2.5%).
8. In political economy, a person acts as (the creator of non-material wealth; the bearer of spiritual values; the bearer of labor power; the creator of his world and being).
9. Active and passive are subdivided: (objects of labor; means of labor; tools of labor; means of production).
10. Means of production include (labor. Power and the object of labor; labor. Power and product of labor; objects of labor and products of labor; objects of labor and means of labor).
11. The main productive force is (means of production; man and means of labor; man, objects and means of labor).
12. The international division of labor is based on the principle (sectoral isolation; territorial isolation; technical and technological community of the natural division of labor).
13. The formation and development of the world market is associated with all of the above, except (deepening and expanding the international division of labor; development of industrialization; development of transport and communication systems).
14. Internationalization of production is a process of economic relationships between countries based on (exchange of finished products; differences in natural and climatic conditions; specialization and cooperation of production; countries overcoming economic dependence).
15. The essence of the export of goods consists in (realizing value for the purpose of making a profit; advancing the cost for the production of services; exporting value for the purpose of generating profit; realizing the value of goods to recover costs).
16. International labor migration is influenced by (demographic situation; high unemployment rate within the country; differences in wage levels; socio-political factors; all of the above).
17. Currency parity expresses (the weight amount of gold contained in a monetary unit; the ratio between national currencies established by law; the ratio of national currencies in accordance with their gold content; the purchasing power of the currency).
18. The strengthening of the national currency and the increase in its exchange rate are associated with (negative trade balance; positive trade balance; negative balance of payments; increase in taxes).
19. International trade is mutually beneficial if (one party has an advantage in the production of one product, and the other side has an absolute advantage in the production of another product; the country does not have an absolute advantage in the production of any product; countries have a comparative advantage in production any goods; all previous answers are correct).
20. The abolition of customs duties on imported goods will lead (to a decrease in the domestic price of a product; to an increase in consumption of this product; to a decrease in the production of this product within the country; to budget losses; all previous answers are correct).
21. The second stage of the innovation life cycle includes: (R&D; fundamental research; commercialization; applied research).
22. Methods of scientific and technical forecasting include: (extrapolation; expert estimates; modeling; postulation; logistic analysis).
23. Methods of scientific and technical forecasting include: (extrapolation; expert assessments; modeling; postulation; logistic analysis).
24. Customs duty, which is calculated as a percentage of the customs value of the goods (specific; ad valorem; all answers are correct).
25. The main method for determining the value of goods - (at the price of a transaction with imported goods; at the price of a transaction with similar goods; at the price of a transaction with identical goods).
26. Dumping is the import of goods into the customs territory of the Russian Federation at a price lower than its normal value (in the country of import; in the country of export; in a third country).
27. Re-import operation is (return to the country of goods previously exported for export; sale and export abroad of previously imported goods that have not been processed; sale and export abroad of nationally produced goods; purchase and import of foreign goods into the country for sale on domestic market).

28. If the mass of containers and packaging is less than 1-2% of the mass of the goods and the price of the goods is insignificant, the weight of the goods is determined according to the condition (gross; net; gross for net).
29. The method of transfer, in which the processing of parts is carried out in batches, the transition from operation to operation occurs only after processing the entire batch (parallel; sequential; serial-parallel; mixed).
30. In the main production process, the following functions are performed (procurement, processing, realizing; procurement, processing, transport; procurement, processing, assembly; processing, assembly, realizing; processing, transport, realizing).
31. Participants of the equipment are located in the order of the technological process to comply with the principle (consistency; rhythm; direct flow; differentiation).
32. The duration of the production cycle is (the time interval between the processing of two parts; the time interval between the successive releases of a batch of parts; the time during which the processed products are in production; the processing time of one part).
33. The production process takes place (only in time; only in space; in space and in time; there is no single answer).
34. The production process is (a part of the technological process, which includes work to change the state of the product; a set of actions for the production and sale of finished products; a set of interrelated labor processes, as a result of which the initial materials turn into finished products).
35. Operational production management includes the following functions: (planning, accounting, control, analysis and sales of products; planning, accounting, control, analysis, regulation; accounting, control, analysis, regulation, sales of products).
36. Organizational and legal forms of enterprises: (business partnerships, societies, production cooperatives, state and municipal unitary enterprises; charitable foundations, societies, production cooperatives, state and municipal unitary enterprises; business partnerships. Societies, production cooperatives, educational funds).
37. The main functions of management (planning, organization, diversification, co-ordination, control; planning, organization, motivation, coordination, registration; planning, organization, motivation, coordination, control).
38. Bureaucratic (mechanistic) structures of management of industrial enterprises (linear, commercial, functional-linear, headquarters; grass-roots, functional, functional linear, headquarters; linear, functional, functional-linear, headquarters).
39. A position that does not correspond to the nature of the subject of economic theory (efficient use of resources; unlimited production resources; maximum satisfaction of needs; scarcity of resources).
40. The law of diminishing marginal utility means that (the utility of each subsequent unit of a commodity decreases as the quantity of purchased goods increases; the ratio of marginal utilities to prices for luxury goods is less than for goods of prime necessities; the ratio of marginal utilities to price is the same for all goods; the utility of the purchased goods decreases as the consumer's income increases)..
41. Unlike a competitive firm, monopoly strives (to maximize profits; to produce more products and set the price higher; to produce less products and set the price higher; all of the above).
42. The demand for a resource depends on (the price of a given resource; the price of a product produced using this resource; prices of complementary resources; all of the above).
43. Which of the following values is not included in the GDP, calculated by the amount of expenditures: (government procurement; gross investment; net exports; wages).
44. The GDP of country A is 200 billion dollars, the marginal propensity to consume = 0.75, if the government of the country has set the goal of achieving GDP at the level of 400 billion dollars, what should be the investment? (25 billion dollars; 50; 45; 40).
45. The reason for the fall in the price of a product is (a fall in the price of complementary goods; a fall in the price of production resources; an increase in taxes on entrepreneurs; an increase in consumer income)
46. If the market price is lower than the equilibrium price, then (there is a surplus of goods; the buyer's market is formed; there is a shortage of goods; the price of the resource falls).

47. The credit risk of an innovator in the implementation of an innovative project is (the innovator's failure to pay the principal debt and interest for the loan provided, as well as the delay in payments under the loan agreement, the entrepreneur's inability to provide loans to foreign legal entities).
48. The duration of short industrial cycles, in accordance with the theory of ND Kondratyev: (3 - 3.5 years; 40 - 60 years; 7-10 years)
49. The budget line on the graph shows (what the consumer wants to buy; the consumer's equilibrium; what the consumer can buy, the minimum frontier of possibilities).
50. Question: Venture financing is: (risk financing of inventions and scientific and technical developments)
51. The role of economic constraints in a market economy is played (supply; price; costs; demand).
52. "Risk-free zone" is ... (Risk-free zone - an area in which zero or negative losses are expected (excess of profit)).
53. Homogeneous products are produced at 2 firms with partial price control. It is (duopoly; oligopoly; pure monopoly; mono-polyistic competition).
54. Working out a strategy for the organization's innovative development is the basis for creating and maintaining a competitive advantage (yes).
55. State innovation policy is designed to: (develop and implement economic, organizational, legal measures aimed at mastering innovations in production)
56. Diffusion of innovation is: (the spread of mastered innovation in new areas of application).
58. The internal rate of return characterizes: (the rate of discount at which the net present value of the project is equal to zero)
59. Question: The task of dynamic analysis, solved by the extrapolation method, assumes that the main factor of development is:
60. Question: Innovation is: (the end result of the introduction of an innovation in order to change the object of management and obtain economic, social, environmental, scientific and technical or other result)
61. Question: Innovation has the following properties: (scientific and technical novelty; commercial feasibility; production applicability)
62. The main principles of the WTO are (in providing loans to participants in foreign trade; applying the most favored nation regime in trade; in ensuring an individual foreign trade regime for each country)
63. An innovative project is: (a system of scientific and technical, organizational, legal and financial and economic documentation required for the implementation of an innovation at an enterprise (in an organization))
64. Question: The "Delphi" method refers to the methods: (collective expertise)
65. Marketing innovations are: (selection of new communication channels for product promotion on the market; development of new product packaging)
66. The need for strategic management is due to: (increased uncertainty of long-term trends due to scientific and technological progress)
67. The duration of long industrial cycles, in accordance with the theory of ND Kondratyev: (3 - 3.5 years; 40 - 60 years; 7-10 years)
68. Arrange the stages of the innovation life cycle in a logical order (a. Development in production; b. Diffusion (replication at other objects); c. Routinization (stable, unchanged, use); d. innovation and its creation (acquisition of rights to use the innovation from its owner)).
69. Forfeiting is: commercial credit; a financial transaction that converts a commercial loan into a bank; investment tax credit.
70. The subject of managerial work is: (resources of the organization, information, production technology).
71. What is Deming's cycle? (planning, execution of work, verification of compliance and elimination of deviations; development cycle of scientific and technological progress)
72. What is a governance mechanism? (a set of functions and powers necessary for the implementation of the impact; the sequence of actions from which the impact is formed; a set of actions and methods of influencing the activities of people in order to induce them to achieve organizational goals).

73. What is a management process? (a set of functions and powers necessary for the implementation of the impact; the sequence of actions from which the impact is formed; a set of actions and methods of influencing the activities of people in order to induce them to achieve organizational goals).
74. What is the name of the time interval between the start of implementation and the end of the project? (project stage; project life cycle; project result).
75. The duration of average industrial cycles, in accordance with the theory of ND Kondratyev: (3 - 3.5 years; 40 - 60 years; 7-10 years)
76. What is the object of management? (legal entities, individuals, processes).
77. At what stage of organizational design is the examination of research and design work carried out? (preparatory; research and project; research; implementation).
78. At what stage of organizational design is the assessment of research results and the functioning of the management system carried out? (preparatory; research and design; research; implementation).
79. What parameters, as a rule, can be characterized by goals in the "tree" of goals? (indexes of position and level; coefficients of relative importance and utility; coefficients of level and reduction; specific weights of "entry" and "exit").
80. The transport problem is solved by the method: (A. all answers are correct; B. least cost, optimality; C. optimality, northwest corner; D. northwest corner, least cost)
81. Which method of assessing and justifying the choice of innovative technologies is unacceptable: (expert method; computational and constructive; observation method).
82. Which of the structural elements includes the modeling process? (A. Analysis B. Model C. Object D. Subject)
83. What is not related to the main levers of technology management: (strategic planning; financial planning; budget planning).
84. With regard to the internal environment, the innovation strategy can be: product; functional; resource; organizational and managerial; situational.
85. The costs of the company associated with the implementation of capital investments (long-term costs; current costs).
86. What the first phase of the innovation process does not include: (organization of commercial production; organization of pilot production and sales; scientific re-research, development work)
87. The first phase of the product life cycle is associated with the phase: (decrease in production and sales; technological development of large-scale production of new products; research and development to create an innovation-product; stabilization of industrial production volumes).
88. Author of the theory of waves (large cycles of the conjuncture) (Ford; D. Kondratev; I. Mendeleev; Fayol)
89. The innovative potential of an organization is - (a measure of the organization's readiness to fulfill tasks to achieve an innovative goal; the organization's readiness for stable production activity; a measure of the organization's readiness to participate in an innovative project).
90. Management influences, based on observance of organizational laws and aimed at maintaining order in the system, constitute the essence of management methods (administrative; economic; socio-psychological).
91. The business plan will allow the investor: (to assess the profitability of the project; to make sure that the novelty of the project does not violate anyone's copy-right; to determine the acceptability of the inflation rate within the planned time frame for the implementation of the object, all are correct).
92. In most cases, failures in the implementation of projects are caused by factors: (technical flaws in the project; weak communication and information processes in the organization; insufficient economic justification, all correct)
93. The Lorenz curve is used to assess the indicator (income in different periods of time or between different groups of the population is used to assess the indicator - the level of risk; used to install software in the ACS)
94. The mathematical model of conflict situations is: (A. game theory; B. network model; C. simulation model; D. transport model)

95. Which of the scientific disciplines are not included in the economic and mathematical methods: (A. experimental analysis *; B. Econometrics; C. economic cybernetics).
96. The effect of financial leverage is (the change in the profitability of own funds obtained through the use of borrowed funds: the accumulation of cash in a foreign venture project).
97. Additional issue of shares: (increase in the authorized capital due to the issue (issue) of an additional number of shares; obtaining borrowed funds from a bank).
98. Payments under a license agreement received monthly as a percentage of sales of products manufactured under a license: (royalties, annuity payments on a loan).
99. What part of the resources is spent at the initial stage of the project? (9-15%; 15-30%; up to 45%)

100. Name a distinctive feature of investment projects: (large budget; high degree of uncertainty and risks; the goal is to make sure that profit is obtained from the implementation of the project).

List of questions to prepare for the main part of the state exam:

1. Differences between innovation and research.
2. Seven sources of innovative opportunities. An unexpected event.
3. Sources of innovation opportunities. Process needs.
4. Sources of innovation opportunities. Changes in industry or market structure.
5. Sources of innovation opportunities. Demographic changes.
6. Sources of innovative opportunities. Changes in consumer perception.
7. Sources of innovative opportunities. New knowledge.
8. Market of innovations. Sphere of innovation.
9. Innovative project - the main stages.
10. Differences between an innovative business and an ordinary business.
11. Percentage of successful innovations.
12. Goals and principles to be followed by the state with the support of science.
13. Forms of state support for the scientific process.
14. Forms of state support for innovation.
15. Innovation process. The main stages.
16. Scientific knowledge as a source of innovation. The main stages of the scientific process.
17. Features of financing scientific and innovation processes.
18. The structure of management of scientific research and innovation in the Russian Federation.
19. Principles for assessing the effectiveness of innovation.
20. Problems of evaluations in innovation management.
21. Commercial and budgetary efficiency.
22. Effects of innovation management. Scientific and technical effect.
23. Effects of innovation management. Social impact.
24. Environmental effects of innovation management.
25. Method of net payments.
26. Effects of innovation management. Economic effect.
27. Financial and industrial group. Structure. Appointment.
28. Innovative activity as an object of management.
29. The structure and content of the organization's innovation management system.
30. Objectives and functions of innovation management.
31. The effectiveness of the use of innovations.
32. Management of creation and implementation of innovations.
33. Project management of innovation. Project management subsystems.
34. Innovative project. Classification. Participants. Financing of innovative projects.
35. Stages of the project. R&D, R&D, R&D, etc.
36. Technology commercialization. Technology transfer
37. Innovation process and innovation.
38. Models of the innovation process. Roswell innovation process models.
39. Differences between innovation and sustainable processes.
40. Risk management subsystems. Risk management methods.
41. Risks in innovation and methods to reduce them.

42. Different types of knowledge. Research methods
43. The concept of technological orders.
44. Laws of dynamics of economic development. The reasons for the emergence and the nature of the manifestation of economic cycles.
45. The cyclical nature of economic development. Long waves of Kondratyev, their nature and main features. Empirical correctness of Kondratyev. Endogenous mechanism.
46. Contribution of I. Schumpeter to the development of the theory of innovation. Effective monopoly as a driving motive for innovation.
47. Economic growth and development.
48. The main directions of state regulation of innovation.
49. National innovation system and its structure.
50. Expertise of innovative projects.
51. Determination of the project efficiency (Principles of determining the economic effect at the stages of the feasibility study of the project. The integral effect. The index of profitability. The rate of profitability. The payback period.)
52. Innovation infrastructure. Key elements.
53. Models V. Leontiev
54. Diagram of production flows and product distribution (cybernetic representation of the industry).
55. One-branch balance ratios. One-branch dynamics equations
56. Production function. Properties. Isocosta. Isoquanta.
57. Diversified modeling.
58. Classification of production technologies by field of application, resource requirements, purpose and priorities of creation. Development of dual-use technologies.
59. Industrial technologies and technological progress. Progressive technology. Science-intensive technology. High technology. Critical technology.
60. Formation of a portfolio of intellectual property.
61. Patent research. Goals and objectives.
62. The procedure for conducting patent research.

4. Material and technical support of GIA

Resources of the information and telecommunications network "Internet":

1. EBS of RUDN University and third-party EBS to which university students have access on the basis of concluded agreements:

- RUDN University Electronic Library System - RUDN University Library System
<http://lib.rudn.ru/MegaPro/Web>

- EBS "University Library Online" <http://www.biblioclub.ru>

- EBS Yurayt <http://www.biblio-online.ru>

- EBS "Student Consultant" www.studentlibrary.ru

- EBS "Doe" <http://e.lanbook.com/>

2. Databases and search engines:

- electronic fund of legal and normative-technical documentation <http://docs.cntd.ru/>

- Yandex search engine <https://www.yandex.ru/>

- Google search engine <https://www.google.ru/>

- SCOPUS abstract database <http://www.elsevierscience.ru/products/scopus/>

Software:

1. Specialized software for conducting the test part of the state exam:

- ...TestStudio.....

and independent work of students - room 350 Ordzhonikidze, 3:

- Windows 7 (Microsoft Subscription) Enrollment for Education Solutions № 86626883 от 01.04.2018 г.);

- Microsoft Office 2007 (Microsoft Subscription) Enrollment for Education Solutions № 86626883 от 01.04.2018 г.);

- Windows XP (Microsoft Subscription) Enrollment for Education Solutions № 86626883 от 01.04.2018 г.);
- Microsoft Office 2003 (Microsoft Subscription) Enrollment for Education Solutions № 86626883 от 01.04.2018 г.);
- Borland Developer Studio 2006 (License Certificate Number: 33080, 33081, 33082) - MATLAB R2008b (361405 2008 г.);
- Notepad++ (free application) - Acrobat Reader DC (free application).

Methodological materials for independent work of students in the process of preparing Master thesis research paper for defense:

1. The procedure for the execution and registration of final qualification works for educational programs of higher education implemented at the Engineering Academy of the RUDN University (approved by the Order of the Director of the Engineering Academy annually or as required).

Technical support of GIA

To prepare for the state exam and defend the Master thesis research paper, students use the premises for independent work.

To conduct the test part of the state exam, an educational classroom is required, equipped with workstations with personal computers (at least 12), equipped with the necessary software and a connection to the Internet.

To conduct the main part of the state examination and / or defense of the Master thesis research paper, a room with a capacity of 12 or more people is required, in which workplaces are equipped for all members of the State Examination Commission, with the ability to listen to reports, view public presentations of speakers, keep records and minutes, there are places for listeners wishing to attend the MThRP defense procedure. The necessary equipment of the premises includes:

- equipment for public presentations of FQP results, including a multimedia screen, a projector, and audio equipment.
- a board for illustrating answers to questions;
- tablets / stands of at least A1 format (if necessary), for placing the graphic part of the WRC on them.

The student can notify the issuing department of his wishes for additional material and technical equipment (if necessary) of the audience assigned to defend the MThRP with a written statement no later than a week before the defense procedure.

5. Fund of assessment tools

5. Assessment for benchmarking the compliance of the level of the competences' development of graduates who graduate / specialty, the requirements of the corresponding OS VO RUDN, formed for the state final examination of students of Master Degree program *«Innovation management in industries in the field / specialty 27.04.04 Control and Systems Engineering*, include:

- a list of competencies that students must master as a result of mastering the educational program;
- description of indicators and criteria for assessing competencies, as well as assessment scales;
- typical control tasks or other materials required to assess the results of mastering the educational program;
- methodological materials defining the procedures for evaluating the results of mastering the educational program.

5.1 The list of competencies that students must master as a result of mastering the educational program

As a result of mastering the educational program «*Innovation management in industries in the field / specialty 27.04.05 Innovation Study*» the graduate must have all the general cultural, general professional and professional competencies listed in paragraph 3 of this Program.

5.2 Indicators, criteria and scales for assessing competencies in the process of GIA

Based on the results of the two stages of the state exam, a total score is given in accordance with the rating system of evaluating academic progress adopted by the RUDN University (score / ECTS / RF score). The grade received by the student at the first stage is formed on the basis of the test result issued by specialized software (maximum 40 points).

At the second stage of the state exam, the score is determined by the results of checking the student's written answer to the examination card by the GEC members and (if necessary) the quality of the student's answers to additional questions from the GEC members.

The scale and criteria for assessing the state exam are presented in Table 2.

Table 2 - Scale and criteria for assessing the state exam (main part)

Grading scale	50-60 points	30-49 points	1-29 баллов	0 points
Criteria	<ul style="list-style-type: none"> - the content of the examination card material is fully disclosed; - the material is presented correctly, in a certain logical sequence; - terminology is used accurately; - shown the ability to illustrate theoretical provisions with specific examples, apply them in a new situation; - the answer sounded independently, without leading questions; - demonstrated the ability to creatively apply knowledge of theory to solving professional problems; - demonstrated a high level of competence formation 	<ul style="list-style-type: none"> - the questions of the examination material are presented systematically and consistently; - demonstrated the ability to analyze the material, however, not all conclusions are well-grounded and evidence-based; - the assimilation of the main literature is demonstrated. - the answer contains one of the following disadvantages: <ul style="list-style-type: none"> - small gaps are allowed in the presentation, which did not distort the content of the answer; - a mistake or more than two omissions was made when covering minor issues, which are easily corrected as noted by the examiner. 	<ul style="list-style-type: none"> - the content of the material is incompletely or inconsistently disclosed, but a general understanding of the issue is shown and skills are demonstrated sufficient for further assimilation of the material; - mastered the main categories on the considered and additional questions; - there were difficulties or mistakes were made in the definition of concepts, the use of terminology, corrected after several leading questions; - with incomplete knowledge of the theoretical material, insufficient formation of competencies, abilities and skills is revealed, the student cannot apply the theory in a new situation; - the assimilation of the main literature was demonstrated. 	<ul style="list-style-type: none"> - the main content of the educational material has not been disclosed; - found ignorance or misunderstanding of the most or the most important part of the educational material; - mistakes were made in the definition of concepts, when using terminology, which were not corrected after several leading questions. - competencies, abilities and skills are not formed.

The Master thesis research paper (*MThRP*) and its defense are assessed in accordance with the point-rating system adopted by the RUDN University (score / ECTS / assessment of the Russian Federation, maximum 100 points) according to the following indicators, which make it possible to assess the level of formation of competencies provided for by the educational program:

Assessment Indicators the defense of Master thesis	Maximum score
- correspondence of the content of the FQP to the approved topic and the issued assignment, clarity of the formulation of the goals and objectives of the study	20
- reliability, originality and novelty of the results obtained in the FQP	10
- the practical value of the completed WRC	10
- style of presentation of the WRC	5

Assessment Indicators the defense of Master thesis	Maximum score
- compliance with the approved requirements for FQP registration	10
- the quality of the presentation and report during the defense of the WRC	10
- the quality of answers to questions during the defense of FQP	10
- assessment of the FQP by the head (review)	10
- assessment of the FQP by the reviewer (review)	10
- availability of publications on the topic of work, certificates, awards, etc.	5

The scale and criteria for assessing the defense of Master thesis are presented in Table 3.

Table 3 – The scale and criteria for assessing defense of Master thesis Research Paper

Compliance of the content of the MThRP with the approved topic, clarity of the formulation of the goals and objectives of the study				
Grading scale	15-20 points	5-14 points в	1-4 points	0 points
Criteria	MThRP executed on a relevant topic, clearly formulated the goals and objectives of the research.	MThRP выполнена на актуальную тему, имеются незначительные замечания по формулировке целей и задач проводимого исследования.	Актуальность темы MThRP вызывает сомнения. Цели и задачи ВКР сформулированы с существенными замечаниями, не достаточно четко. Нет увязки сущности темы с наиболее значимыми направлениями решения рассматриваемой проблемы.	Цели и задачи MThRP не соответствуют утвержденной теме работы и не раскрывают сущности проводимого исследования
Reliability, originality and novelty obtained in MThR results				
Scale	7-10 points	4-6 points	1-3 points	0 points
Criteria	A deep analysis of the object of study has been carried out. The author notes the reliability, originality and novelty of the conclusions on the research topic.	The analysis of the object of study was not carried out deeply enough. The reliability, originality and novelty of the conclusions have a number of minor remarks.	The reliability, originality and novelty of the conclusions based on the results obtained cause serious remarks.	The reliability of the results is questioned, the originality and novelty of the results is absent
The practical value of the MThRP				
Scale	7-10 points	4-6 points	1-3 points	0 points
Criteria	The work gives a new solution to a theoretical or practical problem, which is of significant importance for the professional field.	The work provides a partial solution to a theoretical or practical problem that is important for the professional field.	In the work, only the directions of solving the problem are considered, the results obtained are of a general nature or not sufficiently reasoned.	The results are of no practical value
Presentation style MThRP				
Scale	4-5 points	2-3 points	1 point	0 points
Criteria	The scientific style of presenting the results of work with correct references to literary sources is noted	There are insignificant comments on the scientific nature of the presentation of the results and / or on the correctness of references to sources	There are serious remarks about the scientific style of presenting the results of work and / or the correctness of references to source	The style of presentation does not correspond to scientific, references to sources are incorrect
Compliance with the approved requirements for MThRP				
Scale	7-10 points	4-6 points	1-3 points	0 points

Criteria	MThRP fully complies with the design requirements	MThRP meets the design requirements with minor remarks	MThRP has significant comments on compliance with the design requirements	MThRP не соответствует требованиям по оформлению
The quality of the presentation and report during the defense of the Master thesis				
Scale	7-10 points	4-6 points	1-3 points	0 points
Criteria	The presentation and report fully reflect the content of the MThRP, a good command of the work material was demonstrated, a confident, consistent and logical presentation of the research results	There are minor comments on the presentation and / or report on the topic of the MThRP. There were minor inaccuracies in the presentation of the results of the MThRP, which did not distort the main content of the work.	There are significant comments on the quality of the presentation and / or report on the topic of the MThRP. Significant inaccuracies were admitted in the presentation of the material, affecting the essence of understanding the main content of the SRS, the consistency of the presentation was violated.	The presentation and / or report does not reflect the essence of the graduation work. Ownership of the material of the work has not been demonstrated.
The quality of answers to questions during the defense of Master thesis				
Scale	7-10 points	4-6 points	1-3 points	0 points
Criteria	The comprehensive answers to the questions are given	Answers are given incompletely and / or with minor errors	The answers to the questions are incomplete, with serious errors	Questions not answered
Evaluation of the Master thesis by the research Supervisor				
Scale	7-10 points	4-6 points	1-3 points	0 points
Criteria	Excellent	Good	Satisfactory	Unsatisfactory
Оценка ВКР рецензентом				
Scale	7-10 points	4-6 points	1-3 points	0 points
Criteria	Excellent	Good	Satisfactory	Unsatisfactory
Availability of publications on the topic of work, certificates, awards, etc.				
Scale	4-5 points	2-3 points	1 point	0 points
Criteria	The results of the research were tested in speeches at conferences, seminars, there are publications in the press, the results are confirmed by a certificate of implementation, etc.	The research results are declared for a report at conferences, seminars, or accepted for publication in print, for implementation.	Research results are prepared for discussion at conferences, seminars, or prepared for publication in print, for implementation.	Research results are not planned for publication, report at conferences, seminars, for implementation

Methodology for assessing the results of the state exam

Based on the results of the two stages of the state exam, a total score is given in accordance with the point-rating system adopted by the RUDN University (score / ECTS / RF score).

At the first stage (test part), the student can receive a maximum of 40 points. The assessment received by the student at the first stage is formed on the basis of the test result issued by specialized software, and is put on the list of the state exam and the minutes of the SEC meeting. In the second stage, the student can receive a maximum of 60 points. The assessment is determined based on the results of checking the student's written answer to the exchange ticket and (if necessary) the quality of the student's answers to additional questions from the SEC members. The grade received by the graduate following the results of the second stage of the state exam is also put on the list of the state exam.

The total grade received by the student following the results of the state examination is put down in the examination sheet (by the chairman of the SEC), in the minutes of the SEC meeting (by the secretary of the commission) and communicated to the graduate.

If at one of the stages of the state exam a student receives "0" points or does not appear for the certification test without a good reason, then the result of passing the state exam by such a student is "unsatisfactory".

Methodology for evaluating defense results Master thesis

For the efficiency and convenience of the work of the SEC members, it is recommended to provide them with a supporting document "Worksheet for assessing the formation of competencies during the GIA", the form of which is given in Appendix 1.

In the process of defending the FQP, the members of the State Electoral Commission give points for each of the above indicators. At the end of the defense, each of the members of the GEC sums up all the assigned points.

The final assessment of the formation of competencies is an assessment based on the results of the defense of the FQP. To determine the final grade, it is necessary to calculate and round off the arithmetic mean of the grades given by all members of the state commission. In case of any controversial issues, the chairman of the GEC has the right to vote.

The total score received by the student following the results of the defense of the FQP is put down in the examination sheet (by the chairman of the SEC) and in the minutes of the SEC meeting (by the secretary of the commission).

6. Requirements for the final qualifying paper (FQP) – Master thesis paper

6.1. A student who has passed the state exam (if any) is allowed to defend **Master thesis**. The defense of the FQP is held at an open meeting of the State Examination Commission (SEC). State final certification is carried out in the form of an oral presentation of the FQP, with subsequent oral answers to the questions of the GEC members in accordance with the University Regulations on FQP. The report and / or answers to questions from the SEC members may be in a foreign language.

6.2. As part of the defense *Scientific report*
(the type of final qualifying work is indicated)

As a result of mastering the educational program «Innovation management in industries in the field / specialty 27.04.04 Control and Systems Engineering the graduate must have all the general cultural, general professional and professional competencies listed in paragraph 3 of this Program.

Suggested topics of for Master thesis research paper:

1. Public-private partnership in the innovation sphere: problems and solutions.
2. Financing of innovation activities.
3. Innovative infrastructure in the Russian Federation.
4. Ways to increase innovation activity in the Russian Federation.
5. Regional science, technology and innovation policy.
6. Typology of Russian regions according to the level of development of scientific, technical and innovation spheres.
7. Management system for scientific and technological development of the region.
8. Progressive organizational and economic forms of innovation in the regions of the Russian Federation.
9. Priority areas of science and technology, critical technologies of the Russian Federation at the beginning of the XXI century.
10. Program-targeted management methods in the innovation sphere.
11. Innovation policy of the enterprise.
12. Formation of a portfolio of innovations.
13. The main innovative strategies of the enterprise.
14. Management of innovative projects.

15. Evaluation of the effectiveness of an innovative project.
16. Evaluation of the effectiveness of the innovative organization.
17. Foreign experience in the regulation of innovation.
18. Ways, methods and forms of improving the innovative activity of organizations in Russia.
19. Legal support for the development of innovative entrepreneurship in Russia.
20. Foreign experience in the development of the innovation sphere.
21. Adaptation of the enterprise and its development strategy.
22. Development of the innovative potential of the bank.
23. Management of innovative development in small and medium business.
24. The innovativeness of the enterprise and its efficiency.
25. Competitiveness of the organization and ways of its growth through innovative development.
26. Financial and organizational mechanism for the implementation of the project to create an innovation development center.
27. Competitiveness of the organization and ways of its growth according to the innovative scenario.
28. Portfolio analysis in the system of strategic planning of the organization.
29. Organization of an innovative small business.
30. Development of a project for the management of organizational change in order to develop innovative potential.
31. Development of a project for the strategic management of an innovative organization.
32. Development of a project for conflict management in innovation activities.
33. Development of recommendations for the management of an innovative project.
34. Development of a project to improve the management of wages through the development of innovative activities.
35. Development of a project to improve the efficiency of the investment activity of the organization: an innovative approach.
36. Development and design of information support for personnel management in the organization.
37. Development of a project to reorganize the personnel management system in order to strengthen innovative potential.
38. Development and implementation of the organization's anti-crisis strategy.
39. Development of a project to improve the personnel management of the enterprise: an innovative approach.
40. Development of an innovative project to develop the human resources of the organization.
41. Development of a project to form an innovative marketing strategy for a trade organization.
42. Development of a project to assess the business activity of the enterprise.
43. Development of innovation policy as a tool to increase the investment attractiveness of an enterprise.
44. Development of a personnel strategy in an innovative organization.
45. Development of a project to improve the system of labor motivation: an innovative approach.
46. Development of a project for the management of innovative development of the enterprise
47. Development of a project for human resource management at the enterprise.
48. Development of a project to improve the personnel management system.
49. Development of a project for financial results management.
50. Development of a project of a system of intra-company planning at the enterprise: an innovative approach.
51. Development of a project to manage the sales organization.
52. Development of an innovative business plan in the industry.
53. Development of a project for the management of innovative activities of the enterprise.
54. Development of a project to improve the organizational structure of the organization.
55. Development of a strategy for innovative development of the organization.
56. Development of a project to form a competitive strategy of the organization
57. Development of a project to manage an innovative marketing strategy.
58. Analysis of the role of innovation in increasing the competitiveness of the enterprise.
59. Infrastructure of innovation: problems and solutions.

60. The value of innovation for the development of the enterprise.
61. Venture capital as an investment resource for innovative activities.
62. Management of measures to improve innovation activities.
63. Theoretical and methodological aspects of innovation.
64. Formation and strategic management of innovation.
65. Development of proposals and measures to improve innovative activities.
66. Evaluation of the effectiveness and benefits of the strategy for the implementation of innovative projects at the enterprise.
67. Management of innovative development of the enterprise.
68. Mechanisms for increasing the level of corporate governance: an innovative approach
69. Public-private partnership in the development of innovative activities
70. Development of a project for the management of an innovative marketing strategy.

6.4. Tasks that the student must solve in the process of completing Master thesis
(the type of final qualifying work is indicated)

6.5. Stages of the final qualifying work (WRC), requirements to the student's admission to the defense procedure, the requirements for the structure, volume, content and design, as well as the list of mandatory and recommended documents submitted for defense are indicated in the methodological instructions, approved in the prescribed manner, are posted on the corresponding page of the TUIS RUDN University.

Materials for assessment, including a list of competencies with an indication of the stages of their formation, a description of indicators and criteria for assessing competencies at various stages of their formation, a description of assessment scales, typical control tasks or other materials necessary to assess knowledge, skills, skills and (or) work experience, characterizing the stages of competence formation in the process of mastering an educational program, methodological materials defining procedures for assessing knowledge, skills, skills and (or) activity experience, characterizing the stages of competence formation, are developed in full and are available for students on the page of disciplines in TUIS RUDN.

The program has been drawn up in accordance with the requirements of the OS VO RUDN

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