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8db180d1a3f02ac9e60521a5672742735c18b1d6"Moscow Polytechnic University"

**APPROVE** Vice-President or International Affairs /Yu.D. Davydova/ 2024

Dean of the Faculty of Economics and Management /A.V. Nazarenko/

#### WORKING PROGRAM OF THE DISCIPLINE

"Business Processes Systems Management"

Field of study 38.03.02 Management

Educational program (profile) "Business Process Management"

> Qualification (degree) Bachelor

> > Form of study Part-time

#### **Developer(s):**

Art. Lecturer at the Department of Management

Kow

/I.S. Koshel/

#### Agreed:

Head of the Department of Management, Ph.D., Associate Professor



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#### 1. Goals, objectives and planned learning outcomes in the discipline

The main goals of mastering the discipline "System management of business processes" should include consideration of the theoretical foundations and practical application of the apparatus of system management of business processes of an organization.

The main objectives of mastering the discipline "System management of business processes" include:

- formation of a scientific understanding and development of general theoretical knowledge about business processes in an organization;
  - studying methods for modeling and analyzing business processes;
- studying the possibilities of using modern technologies for assessing and improving business processes in practice;
- obtaining skills in using software tools and technologies designed to manage business processes;
- mastering the skills and abilities of analysis and optimization of production, administrative, information processes;
- formation of the necessary practical skills for working with modern computer technology and software and solving practical problems of describing the business processes of an enterprise with the aim of their subsequent automation.

Training in the discipline "System management of business processes" is aimed at developing the following competencies in students:

Code and name of	Indicators of Competency Achievement
competencies	
UK-1. Able to search,	IAA-1.1. Analyzes the task, highlighting its basic components
critically analyze and	IUC-1.2.Searches, critically evaluates, summarizes, systematizes and
synthesize information,	ranks information required to solve a given problem
apply a systematic	IUC-1.3. Considers and offers rational options for solving a given
approach to solve	problem, using a systematic approach, critically evaluates their
assigned problems	advantages and disadvantages

#### 2. Place of discipline in the structure of the educational program

The discipline refers to the part formed by the participants in educational relations, block B1 "Disciplines (modules)".

The discipline "System management of business processes" is interconnected logically, substantively and methodologically with the following disciplines and practices of the EP:

- Project activities
- Fundamentals of Management
- Business process management
- Economic theory

#### **3.** Structure and content of the discipline

The total labor intensity of the discipline is 5 credit units (180 hours).

#### 3.1 Types of educational work and labor intensity

(according to forms of study)

#### 3.1.1. Part-time and part-time education

No.	Type of educational work	Quantity	Semesters	
	Type of educational work	hours	8	
1	Auditory lessons	36	36	
	Including:			

1.1	Lectures	18	18	
1.2	Seminars/practical sessions	18	18	
2	Independent work	144	144	
3	Interim certification			
	Test/differential test/exam	Exam	Exam	
	Total	180	180	

#### 3.2 Thematic plan for studying the discipline

(according to forms of study)

#### 3.2.1. Part-time and part-time education

		Labor intensity, hour					
			Classroom work				ırk
No. p/p	Sections/topics disciplines	Total	Lectures	Seminars/practic al sessions	Laboratory exercises	Practical training	Independent work
1.1	Topic 1. Introduction to the discipline.		4	4			thirty
	Basic definitions. Concepts						
	characterizing systems						
1.2	Topic 2. Models and methods of system analysis		4	4			thirty
1.3	Topic 3. Analysis and formation of		4	4			28
	system goals						
1.4	Topic 4. Decision making on business		4	2			28
	process management						
1.5	Topic 5. System analysis in managing		2	4			28
	the economic activities of an						
	organization						
	Total		18	18			144

#### 3.3 Contents of the discipline

## Topic 1. Introduction to the discipline. Basic definitions. Concepts characterizing systems

Introduction to the discipline. Basic definitions: system, system element, connection, subsystem, goal, structure, types of structures, control system, cybernetic system, system analysis, systems approach. Concepts characterizing systems: state, equilibrium, development, stability. Classification of systems: the purpose of any classification, according to interaction with the environment, the basis of the classification, the name of the classes of systems, the distinctive features of classes, examples of classes.

Fundamentals of systems theory: the system and its components, forms of representation, purpose of operation. Concepts characterizing the structure and functioning of systems: elements, variables, parameters, system states, system behavior, program. Classification and patterns of systems. Formalized models of system analysis.

System approach and its basic principles. Fundamentals of the systems approach: systems approach, system objects, direct connection, feedback, positive feedback, negative feedback, feedback coefficient. Principles of the systems approach: the principle of integrity, the principle of compatibility of elements in the system, the principle of organization, the principle of purposefulness and expediency. The principle of neutralization of dysfunctions, the principle of labilization of functions, the principle of adaptability, the principle of evolution, the principle of isomorphism, the principle of multifunctionality of a complex system, the principle of an integrated approach, the principle of expediency, the principle of "complete system". The principle of complementarity and continuity of the processes of design and implementation of complex systems, the principle of taking into account the dynamics of the system.

Scheme of system analysis procedures. Principles of systems analysis. Panorama of systems analysis methods. Selecting modeling methods. Methods for formalized representation of systems. Direct resource allocation problem based on linear programming.

#### Topic 2. Models and methods of system analysis

Models and methods of system analysis. Model as the main means of studying systems: well-structured problems, unstructured problems, weakly structured problems, model, modeling of economic systems, experimental problem, meaningful formulation of the problem, stages of practical modeling, classification of mathematical models, analytical mathematical models, algorithmic mathematical models. Methods of formal representation of systems: analytical, statistical, graphical. Information approach to systems analysis: information, input information, output information, internal, intra-system, amount of information.

Features of the application of the dual LP problem for the analysis of the economic system. Variants of transport tasks (TZ). Criteria for choosing a target and optimal transport flows. Sequence of solving a transport problem based on the cost criterion.

Specific models of system analysis. IDEF family standards Types of IDEF standards: functional block, dominance, interface arc, branching arcs.

IDEF0 methodology: merging arcs, decomposition, stable subsystems, tunneling. The process of creating an IDEFO model: the main stages of the process, choosing a goal and point of view, compiling a list of data, compiling a list of functions, constructing a diagram, decomposition and refinement, evaluating the model. IDEF3 methodology: purpose of IDEF3, types of diagrams in IDEF3, classification of types of intersections, basic principles of ontological analysis, IDEF5 concepts, types of IDEF5 diagrams and diagrams.

#### Topic 3. Analysis and formation of system goals

Analysis and formation of system goals. Purpose and its characteristics. Goal analysis. Synthesis of goals (goal setting). Solving the problem of optimizing an organization's production plan. Modeling the functioning of an organization when resources and structure change.

Organization and evaluation of complex examinations: Concordance, Spearman, and confusion coefficients. Methods for conducting expert procedures. Calculation of weighting coefficients of criteria.

Making decisions based on many criteria. Experts. Methods for organizing group examinations. System analysis in strategic planning and management. Solving the problem of choosing a strategy taking into account synergies, effects and costs. Particular problems of system analysis.

#### **Topic 4. Decision making on business process management**

General characteristics of the operational management of the main production and the complex of tasks of the subsystem. Characteristics of tasks of operational scheduling of main production. System dynamics. Concept of analysis of resource flows by dynamic equations. Dynamics of development of business organizations.

System analysis in management. Management concept. Principles of management theory. Business process management functions. Solving typical problems for calculating the probabilities of system states, calculating technological and economic efficiency.

Topic 5. System analysis in managing the economic activities of an organization

Indicators of efficiency of economic activity. Analysis and assessment of organizational management structures. Indicators of efficiency of economic activity. System analysis in managing the investment activities of an organization.

#### 3.4 Topics of seminars/practical and laboratory classes

#### 3.4.1. Seminars/practical sessions

Topic 1. Introduction to the discipline. Basic definitions. Concepts	Seminar session 1
characterizing systems	
Topic 2. Models and methods of system analysis	Seminar session 2
Topic 3. Analysis and formation of system goals	Seminar session 3
Topic 4. Decision making on business process management	Seminar session 4
Topic 5. System analysis in managing the economic activities of an	Seminar session 5
organization	

#### 4. Educational, methodological and information support

#### 4.1 Main literature

- 1) Dolganova, O. I. Modeling business processes: textbook and workshop for universities / O. I. Dolganova, E. V. Vinogradova, A. M. Lobanova; edited by O. I. Dolganova. Moscow: Yurayt Publishing House, 2021. 289 p. (Higher education). ISBN 978-5-534-00866-1. Text: electronic // Educational platform Urayt [website]. URL: https://urait.ru/bcode/468913
- 2) Frolov, Yu. V. Strategic management. Formation of strategy and design of business processes: textbook for universities / Yu. V. Frolov, R. V. Seryshev; edited by Yu. V. Frolov. 2nd ed., rev. and additional Moscow: Yurayt Publishing House, 2022. 154 p. (Higher education). ISBN 978-5-534-09015-4. Text: electronic // Educational platform Urayt [website]. URL: <a href="https://urait.ru/bcode/491863">https://urait.ru/bcode/491863</a>

#### 4.2 Aadditional literature

- 1) Alekseeva M. B. Analysis of system activity: textbook and workshop for universities 2nd ed., revised. and additional M: Yurayt Publishing House, 2021. 337 p. (Higher education). ISBN 978-5-534-14499-4. Text: electronic // Educational platform Urayt [website]. URL:https://urait.ru/bcode/477752
- 2) Polyakov N. A. Management of innovative projects: textbook and workshop for universities M.: Yurayt Publishing House, 2021. 330 p. (Higher education). ISBN 978-5-534-00952-1. Text: electronic // Educational platform Urayt [website]. URL: https://urait.ru/bcode/468930

#### 4.3 Electronic educational resources

An electronic educational resource on the discipline is under development.

#### 5. Logistics support

Auditorium for lectures and seminars of the general fund. Study tables with benches, a blackboard, a portable multimedia complex (projector, projection screen, laptop). Teacher's workplace: table, chair.

#### 6. Guidelines

#### 6.1 Methodological recommendations for teachers on organizing training

A presentation (from the English word - presentation) is a set of color pictures-slides on a specific topic, which is stored in a special format file with the PP extension. The term "presentation" (sometimes called "slide film") is associated primarily with the information and advertising functions of pictures, which are designed for a certain category of viewers (users).

In order for the presentation to be well received by the audience and not cause negative emotions (subconscious or fully conscious), it is necessary to follow the rules of its design.

A presentation involves a combination of information of various types: text, graphics, music and sound effects, animation and video clips. Therefore, it is necessary to take into account the specifics of combining pieces of information of different types. In addition, the design and display of each of the listed types of information is also subject to certain rules. So, for example, the choice of font is important for textual information, brightness and color saturation are important for graphic information, and optimal relative position on the slide is necessary for the best possible perception of them together.

In addition to the correct arrangement of text blocks, we must not forget about their content the text. Under no circumstances should it contain spelling errors. You should also take into account the general rules of text formatting.

After creating a presentation and its design, you need to rehearse its presentation and your speech, check how the presentation as a whole will look (on a computer screen or projection screen), how quickly and adequately it is perceived from different places in the audience, under different lighting, noise, in an environment as close as possible to real performance conditions.

#### 6.2 Guidelines for students on mastering the discipline

A lecture is a systematic, consistent, monologue presentation by a teacher of educational material, usually of a theoretical nature. When preparing a lecture, the teacher is guided by the work program of the discipline. During lectures, it is recommended to take notes, which will allow you to subsequently recall the studied educational material, supplement the content when working independently with literature, and prepare for the exam.

You should also pay attention to categories, formulations that reveal the content of certain phenomena and processes, scientific conclusions and practical recommendations, positive experience in oratory. It is advisable to leave margins in your working notes in which to make notes from the recommended literature, supplementing the material of the lecture you listened to, as well as emphasizing the special importance of certain theoretical positions.

Conclusions from the lecture summarize the teacher's thoughts on educational issues. The teacher provides a list of used and recommended sources for studying a specific topic. At the end of the lecture, students have the opportunity to ask questions to the teacher about the topic of the lecture. When delivering lectures on the discipline, electronic multimedia presentations can be used.

Guidelines for students when working at the seminar

Seminars are implemented in accordance with the working curriculum with sequential study of the topics of the discipline. In preparation for the seminars, the student is recommended to study the basic literature, familiarize himself with additional literature, new publications in periodicals: magazines, newspapers, etc. In this case, you should take into account the recommendations of the teacher and the requirements of the curriculum. It is also recommended to finalize your lecture notes by making appropriate notes from the literature recommended by the teacher and provided for by the curriculum. Abstracts should be prepared for presentations on all educational issues brought up for the seminar.

Since the student's activity in seminar classes is the subject of monitoring his progress in mastering the course, preparation for seminar classes requires a responsible attitude. During interactive classes, students must be active.

Guidelines for students on organizing independent work

Independent work of students is aimed at independent study of a separate topic of the academic discipline. Independent work is mandatory for each student, its volume is determined by the curriculum. When working independently, the student interacts with the recommended materials with the participation of the teacher in the form of consultations. To perform independent work, methodological support is provided. The electronic library system (electronic library) of the university provides the possibility of individual access for each student from any point where there is access to the Internet.

#### 7. Appraisal Fund

#### 7.1 Methods for monitoring and assessing learning outcomes

#### **Indicator** of the level of competence development

	Systematic business process management					
Federal	Federal State Educational Standard of Higher Education 38.03.02 "MANAGEMENT"					
In the p	rocess of mastering	this discipline, the student forms and de	emonstrates the f	ollowing:		
compet	encies:					
COMP	ETENCIES	List of components	Technology for	Form of	Degrees of levels of	
INDEX	FORMULATION		1 0	assessment	mastering	
			competencies	tool**	competencies	
UK-1	Able to search, critically analyze and synthesize information, apply a systematic approach to solve assigned problems	use the principles of effective management of a project, technological and product innovation program or organizational change program	classes	DS, T, Z	A basic level of - able to analyze, apply skills and competency functions in training and prepared situations Increased level -able to analyze, apply skills and competencies in practice and in non- standard situations	

#### 7.2 Scale and criteria for assessing learning outcomes

Scales for assessing the results of intermediate certification and their description:

#### Form of intermediate certification: exam.

Interim certification of students in the form of an exam is carried out based on the results of completing all types of academic work provided for by the curriculum for a given discipline (module), while taking into account the results of ongoing monitoring of progress during the semester. Assessment of the degree to which students have achieved the planned learning outcomes in the discipline (module) is carried out by the teacher leading classes in the discipline (module) using the method of expert assessment. Based on the results of the intermediate certification for the discipline (module), a grade of "excellent", "good", "satisfactory" or "unsatisfactory" is given.

Only students who have completed all types of academic work provided for by the work program in the discipline "System management of business processes" are allowed to take the intermediate certification (passed the intermediate control)

Grading scale	Description
Great	All types of educational work provided for by the curriculum have been completed. The student demonstrates compliance of knowledge, abilities, and skills with those given in the tables of indicators, operates with acquired knowledge, abilities, skills, and applies them in situations of increased complexity. In this case, minor errors, inaccuracies, and difficulties during analytical operations and the transfer of knowledge and skills to new, non-standard situations may be made.
Fine	All types of educational work provided for by the curriculum have been completed. The student demonstrates incomplete, correct compliance of knowledge, skills and abilities with those given in the tables of indicators, or if 2-3 insignificant errors were made.
Satisfactorily	All types of educational work provided for by the curriculum have been completed. The student demonstrates the consistency of knowledge, which covers the main, most important part of the material, but at the same time one significant error or inaccuracy was made.
Unsatisfactory	One or more types of educational work provided for by the curriculum have not been completed. The student demonstrates incomplete compliance of knowledge, abilities, skills with those given in the tables of indicators, significant mistakes are made, a lack of knowledge, abilities, skills is manifested in a number of indicators, the student experiences significant difficulties in operating knowledge and skills when transferring them to new situations.

#### 7.3 Evaluation tools

# List of assessment tools for the discipline "System management of business processes"

OS No.	Name of the assessment tool	Brief description of the evaluation tool	Submission of the assessment tool to the Federal Fund
1	Report, message (DS)	A product of a student's independent work, which is a public speech presenting the results obtained in solving a specific educational, practical, educational, research or scientific topic	Topics of reports, messages
2	Test (T)	A system of standardized tasks that allows you to automate the procedure for measuring the level of knowledge and skills of a student.	Test task fund
3	Exam (E)	Final form of knowledge assessment. In higher educational institutions they are held during the session.	Questions for the exam

#### 7.3.1. Current control

#### Topics of reports on the discipline

# "System management of business processes" (formation of competenceK-1)

- 1. Systematic approach in economics and management.
- 2. The concept and essence of system analysis and its areas of application.
- 3. Principles of systems analysis.
- 4. The concept of a system and its properties.
- 5. System structure: black box model.
- 6. The structure of the economic system and its formalized representation.
- 7. Characteristics of the functioning and development of the system.
- 8. Classification of systems.
- 9. Patterns of functioning and development of systems: interaction of part and whole.
- 10. Regularities of hierarchical ordering of systems.
- 11. Patterns of emergence of systems.
- 12. Patterns of systems development.
- 13. Regularities of goal setting of systems.
- 14. Analytical approach to management: characteristics of the main components.
- 15. Synthetic approach to management: characteristics of the main components.
- 16. Synthetic approach to management: control of a simple system.
- 17. Synthetic approach to management: management of a complex system.
- 18. Synthetic approach to management: management by parameters.
- 19. Synthetic approach to management: management by structure.
- 20. Synthetic approach to management: management by objectives.
- 21. Synthetic approach to management: management of large systems.
- 22. Synthetic approach to management: management in the absence of information about the final goal.
  - 23. Sequence of system analysis.
  - 24. System analysis technology: fixing and diagnosing problems.
  - 25. System analysis technology: formation of a group of stakeholders.
  - 26. System analysis technology: identifying the problem mess.
  - 27. System analysis technology: definition of a configurator.
  - 28. Technology of system analysis: methods of target identification.
  - 29. Technology of system analysis: formation of criteria.
  - 30. System analysis technology: methods of experimental research of systems.
  - 31. System analysis technology: building and improving the model.
  - 32. System analysis technology: ways to generate alternatives.
  - 33. Methods of selection or decision-making in system analysis.
  - 34. System analysis technology: implementation of improving intervention.
  - 35. Comparative characteristics of methods for optimizing management decisions.
  - 36. Method of simple multicriteria selection: essence and algorithm.
- 37. Making management decisions based on a systemic analysis of hierarchies: essence and algorithm.
  - 38. TOPSIS method: essence and algorithm.
  - 39. Method of tree and decision analysis: essence and algorithm.
  - 40. Simulation modeling: essence and algorithm.

#### Report evaluation criteria

N	Criterion	Grade			
o.		ex.	chorus	satisfaction	unsatisfactory

1	Structure of the report	The report contains semantic parts balanced in volume	The report contains three semantic parts, unbalanced in volume	One of the semantic parts is missing from the report	The report does not show the presence of semantic parts
2	Contents of the report	The content reflects the essence of the problem under consideration and the main results obtained	The content does not fully reflect the essence of the problem under consideration or the main results obtained	The content does not fully reflect the essence of the problem under consideration and the main results obtained	The content does not reflect the essence of the problem under consideration or the main results obtained
3	Mastery of the material	The student has complete command of the material presented, is problem oriented, and answers questions freely	The student knows the material presented, is oriented in the problem, finds it difficult to answer some questions	The student is not fluent enough in the material being presented and is poorly oriented in the problem	The student does not know the material being presented and has poor understanding of the problem
4	Matching theme	The presented material fully corresponds to the stated topic	The presented material contains elements that are not relevant to the topic	The material presented contains a large number of elements that are not related to the topic.	The material presented is slightly relevant to the topic

#### **Tests by discipline**

"Systematic business process management" (formation of competenceK-1)

The task of system analysis, which means representing a system in the form of subsystems consisting of smaller elements, is called:

- A) decomposition problem
- B) analysis task
- C) synthesis problem

ANSWER: A

When classifying goals, it is this category that includes strengthening the financial stability of the organization and increasing profitability:

- A) economic
- B) production
- C) administrative

ANSWER: A

When building a "goal tree", the system needs to be built:

- A) from top to bottom, starting with the formulation of the main goal
- B) bottom up, starting with the formulation of small goals
- C) in parallel, formulating all goals simultaneously

ANSWER: A

The goals of system analysis are:

- A) processes of preparation and decision-making by managers, as well as various problems when creating and operating systems
  - B) systems
  - C) analyze the problems that need to be solved during planning

ANSWER: C

Operational management of the main production is carried out in accordance with:

- A) plan
- B) strategy
- C) mission

ANSWER: A

The main functions of operational management do not include:

- A) guidance for making effective decisions
- B) planning to manage and achieve goals
- C) accounting to control, identify and analyze variances during production
- D) development of marketing strategy

ANSWER: D

The objects of operational calendar planning are:

- A) products, assembly units
- B) specialists and workers
- C) management decisions

ANSWER: A

The concept, which consists of constant monitoring of production and promptly taking measures to prevent deviations in order to implement the production plan, is:

- A) operational accounting
- B) dispatching
- C) current control

ANSWER: B

Object of dispatch control in mass production:

- A) compliance with work rhythms at each stage
- B) lead times
- C) providing the plant with everything necessary for the production of products and the release of these products

ANSWER: A

Object of dispatch control in single and small-scale production:

- A) compliance with work rhythms at each stage
- B) lead times
- C) providing the plant with everything necessary for the production of products and the release of these products

ANSWER: B

Supervisory control object (for all types of production):

- A) compliance with work rhythms at each stage
- B) lead times
- C) providing the plant with everything necessary for the production of products and the release of these products

ANSWER: C

The set of control functions performed in the system when the environment changes is usually called:

- A) controlled systems
- B) a group of functions
- C) control loop

ANSWER: C

When constructing a "goal tree," the decomposition of the top-level goal into subgoals is called:

- A) decomposition
- B) classification
- C) stratification

#### ANSWER: A

An approach to the analysis of financial and economic activities, in which the activities of individual enterprises and business units should be studied as part of a system of a higher hierarchical level, taking into account internal and external connections, is called:

- A) functional approach
- B) systems approach
- C) process approach

ANSWER: B

The main objectives of the systems approach are:

- A) problems of analysis and synthesis of the system
- B) search for optimal or close to optimal solutions
- C) rationale for management decisions

ANSWER: A

At what stage of system analysis is a system model built based on the information obtained at the previous stages?

- A) parametric stage
- B) model stage
- C) calculation and analytical stage

ANSWER: C

Factors in economic analysis that are controlled by the enterprise are called:

- A) general
- B) private
- C) internal
- D) external

ANSWER: C

Factors in economic analysis that are little or completely uncontrollable by the enterprise are called:

- A) general
- B) private
- C) internal
- D) external

ANSWER: D

According to the period of use, reserves are divided into:

- A) current and future
- B) explicit and hidden
- C) external and internal

ANSWER: A

According to the methods of identification, reserves are classified into:

- A) current and future
- B) explicit and hidden
- C) external and internal

ANSWER: B

The main purpose of management analysis is:

- A) problems of analysis and synthesis of the system
- B) search for optimal or close to optimal solutions
- C) rationale for management decisions

ANSWER: C

Production efficiency from the point of view of achieving profit per unit of material and labor costs for the manufacture and sale of products shows:

- A) level of profitability
- B) efficiency level
- C) economic efficiency

ANSWER: A

The method in which general goals are divided into specific ones using decomposition methods is called:

- A) goal tree
- B) decision tree
- C) work tree ANSWER: A

With this special method of modeling systems, the approach is based on the use of structural representations of various kinds and means of mathematical linguistics (languages based on settheoretic representations, on the use of means of mathematical logic, semiotics):

- A) System Dynamics Symulation Modeling
- B) situational modeling
- C) structural-linguistic modeling

ANSWER: C

The combined body of knowledge on business process management is:

- A) description of the business process
- B) ISO 9001
- C) BPM CBOK

ANSWER: C

Any logical repeating sequence of interrelated actions (events, procedures, operations), the implementation of which uses resources of the external environment, and which leads the company to a result is:

- A) business process
- B) description of the business process
- C) ISO 9001

ANSWER: A

A step-by-step description of the actions of employees when implementing a particular process, including responsibility for its implementation, the procedure for making decisions, the procedure for interaction with other employees, this is:

- A) business process
- B) description of the business process
- C) BPM CBOK ANSWER: B

#### 7.3.2. Interim certification

#### Questions for the discipline exam

"System management of business processes" (formation of competenceK-1)

- 1. Development of systemic ideas in economics and management. Systems methodology as a research theory
  - 2. Main directions in scientific research (elementalism, structural approach).
  - 3. Main directions in scientific research (functional approach, systems approach)
- 4. System approach and system analysis in economics. Principles and postulates of systems analysis
  - 5. The concept of "system". Constructive description of the socio-economic system
  - 6. Systematic description of the socio-economic object of study.
  - 7. Matrix of system characteristics and principles of its formation.
  - 8. External and internal environment of functioning of the socio-economic system
  - 9. System characteristics matrix. Input and output parameters

- 10. Function and goals of system development. Conceptmultifunctionality. eleven. System structure. Conceptpolystructurality.
- 12. System characteristics. Connections and elements of the system. The concept of a subsystem.
  - 13. System characteristics. System processor. Components of the processor.
- 14. Principles of classification of systems. Classification of systems by degree of complexity and conditionality of action
  - 15. Features of socio-economic systems. Specifics of goal-directed behavior.
  - 16. Features of socio-economic systems. Specifics of internal dynamics.
  - 17. Features of socio-economic systems. Specifics of external dynamics.
  - 18. Laws and principles of systems research. "Black box" method, possibilities of use.
- 19. Laws and principles of systems research. Feedback principle. Positive and negative feedback. Automatic regulation formula.
- 20. Principles of classification of systems. Classification of systems by the nature of interaction with the external environment
- 21. Laws and principles of systems research. Feedback principle. The concept of a homeostatic system.
- 22. Laws and principles of systems research. Feedback principle. Automatic regulation formula.
- 23. Laws and principles of research of socio-economic systems. The law of necessary diversity, examples.
- 24. Systematic methods for studying the internal environment of socio-economic objects. System characteristics matrix.
  - 25. System characteristics matrix. Physical and dynamic measurement of system elements
  - 26. System characteristics matrix. Predictive and control measurement of system elements
- 27. Morphological method for studying the external environment of a socio-economic system. Basic steps of morphological research
- 28. System analysis of the external environment. Stratification of the environment and expert determination of the significance of factors.
- 29. Analysis of the external environment of the socio-economic system. Methods for identifying key external factors of functioning and development
- thirty. Construction and assessment of scenarios for the development of the external environment of the socio-economic system optimistic, pessimistic and most probable.
- 31. Methods for identifying and describing the "problem field" of an organization using a system classifier
- 32. System analysis of the organization's goals. Methods for forming targets. Identify and evaluate key goals.
- 33. Methods for decomposing organizational goals. Basic requirements and principles for constructing a "goal tree"
- 34. Assessing the current strategy of the organization. Analysis of the possibilities of changing the current strategy taking into account scenarios for the development of the external environment.

#### Examination form

# MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION FEDERAL STATE AUTONOMOUS EDUCATIONAL INSTITUTION OF HIGHER EDUCATION "MOSCOW POLYTECHNIC UNIVERSITY" (MOSCOW POLYTECH)

Faculty of Economics and Management, Department of Management
Discipline: Systematic business process management
Direction of training: 03/38/02 "Management"
Course: _, group, form of study: full-time, part-time and part-time
EXAMINATION TICKET No. 1.
<ul><li>1.Formation of UK-1 competence.</li><li>2. Formation of the competence of UK-1</li></ul>
Approved at the meeting of the department "" 202_, minutes No
Head Department of Management/Alenina E.E./