Ministry of Agriculture of the Russian Federation
Federal State Budgetary Educational Institution
of Higher Education
"St. Petersburg State University of Veterinary Medicine"

APPROVED BY
Vice-Rector for Educational
Work and Youth Policy
_____ Sukhinin A.A.
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Department of Veterinary Hygiene and Radiobiology

EDUCATIONAL WORK PROGRAM

for the discipline

" HYGIENE OF ANIMAL"

The level of higher education
SPECIALIST COURSE

Specialty 36.05.01 Veterinary Medicine
«General Clinical Veterinary Medicine»
Full-time education
Education starts in 2025

Reviewed and adopted
at the meeting of the department
on June 19, 2025
Protocol No. 14

Head of the Department
of Veterinary Hygiene and Radiobiolog,
Doctor of Veterinary Medicine, Associate Professor
_____ Belopolskiy A.E.

Saint Petersburg
2025

1. AIMS AND OBJECTIVES OF THE DISCIPLINE " HYGIENE OF ANIMAL"

The main goal of the discipline in the training of veterinarians is to give students fundamental knowledge about the protection and promotion of animal health, increasing natural resistance, rational methods of keeping, rearing and care, in which animals show high resistance to diseases and give high-quality maximum productivity.

To achieve this goal, it is necessary to solve the following tasks:

a) The general educational task is to in-depth familiarize students with rational methods of keeping, raising and caring for animals and provides a fundamental biological education in accordance with the requirements for higher educational institutions of biological profile.

b) The applied task covers issues related to the protection and promotion of animal health and creates a conceptual basis for the implementation of interdisciplinary structural and logical connections in order to develop medical thinking skills.

c) The special task is to familiarize students with modern trends and methodological approaches used in animal hygiene to solve the problems of animal husbandry and veterinary medicine, as well as existing achievements in this area.

2. THE LIST OF THE PLANNED RESULTS OF THE DISCIPLINE (MODULE), CORRELATED WITH THE PLANNED RESULTS OF THE REALISED EDUCATIONAL PROGRAM

As a result of mastering the discipline, the student prepares for the following types of activities, in accordance with the educational standard of Federal State Educational Standard of Higher Education 36.05.01 “Veterinary Medicine”.

The field of professional activity:

13 Agriculture

Student competencies formed as a result of mastering Disciplines.

The process of studying the discipline is aimed at forming the following competencies:

A) General professional competencies (GPC):

GPC-2. Is able to interpret and evaluate in professional activity the influence of natural, socio-economic, genetic and economic factors on the physiological status of the animal body.

GPC-2 ID-1 **To know**: ecology factors of the environment, its classification and the nature of relationships with living organisms; basic ecological concepts; interspecific relations of animals and plants, terms and bio ecology laws, parasites and hosts; ecological features of some types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body.

GPC-2 ID-2 **To be able to**: use environmental factors and environmental laws in agricultural manufacture; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods in the environmental assessment of agricultural facilities and the production of agricultural products; assess the impact on the animal body, anthropogenic and economic factors.

GPC-2 ID-3 **To possess skills of**: the knowledge of the origin of living organisms, the levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for studying environmental knowledge of the environment, the laws of the development of nature

and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, with the use of digital technologies as well.;

B) Professional competencies (PC):

Type of tasks prof. activity: medical

PC-12. Organization of the preventive clinical studies of animals, control of the veterinary and sanitary conditions and microclimate of livestock premises in accordance with the plan of antiepizootic measures, plan of the prevention of non-contagious animal diseases. plan of veterinary and sanitary measures

PC-12 ID-3 **To be able to** carry out veterinary quality control over the procurement of animal feed in order to ensure its veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases

PC-12 ID-4 **To know** the recommended forms of the plan of antiepizootic measures, the plan of prevention of non-contagiouse animal diseases, the plan of veterinary and sanitary measures

PC-12 ID-5 **To know** the procedure for conducting internal control of the veterinary and sanitary conditions of the facilities and the microclimate of livestock premises, using digital equipment

PC-12 ID-6 **To know** the normative indicators of microclimate parameters in livestock premises

PC-15. Management of organizational, technical, zootechnical and veterinary measures for the prevention of non-contagiouse diseases in accordance with the preventive plan, analysis of the effectiveness of measures for the prevention of animal diseases for its improvement

PC-15 ID-1 **To be able to** assess the impact of animal welfare and feeding conditions on its health as part of the implementation of action plans for the prevention of animal diseases using digital technologies

PC-15 ID-2 **To be able to** evaluate the effectiveness of preventive measures and ways to implement them, using digital technologies as well

PC-15 ID-3 **To be able to** carry out veterinary quality control and procurement of animal feed in order to ensure its veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases

PC-15 ID-5 **To know** the types of measures for the prevention of non-contagious animal diseases and metabolic disorders in animals and the requirements for its implementation, in accordance with methodological guidelines, instructions, manuals, rules for the diagnosis, prevention and treatment of animals.

3. THE PLACE OF DISCIPLINE IN THE STRUCTURE OF THE MPEP

Discipline B1.O.27 “Animal Hygiene” is a discipline in Block 1 of the mandatory part of the federal state educational standard of higher education in specialty 36.05.01 “Veterinary Medicine” (specialty level).

The full-time course is mastered in the 5th and 6th semester of study.

When teaching the discipline “Animal Hygiene,” the knowledge and skills acquired by students in mastering the disciplines of zoology, normal and pathological physiology, microbiology, feeding, breeding, biochemistry, and physiology are used. The discipline “Animal Hygiene” is the basic one on which most subsequent disciplines are built, such as:

1. Clinical diagnosis.
2. Internal non-communicable diseases.
3. Veterinary and sanitary examination.
4. Obstetrics and gynecology.
5. Parasitology.
6. Epizootology.
7. Diseases of laboratory, small and exotic animals.
8. Diseases of birds.

4. THE SCOPE OF DISCIPLINE AND TYPES OF ACADEMIC WORK

4.1. The scope of the discipline for full-time education

Type of educational work	**Hours**	**Semesters**	
		5	**6**
Classroom classes (total)	**64**	**32**	**32**
Including:			
Lectures, including interactive forms	32	16	16
Practical lessons (PL), including interactive forms, including:	32	16	16
practical training (PT)	8	4	4
Self-study	**80**	**40**	**40**
Course work		**-**	+
Type of intermediate and final certification (test, exam)	**Test, exam**	**Test**	**Exam**
Total labor intensity hours/credits	**144/4**	**72/2**	**72/2**

5. THE CONTENT OF THE DISCIPLINE AND TYPES OF CLASSES
5.1. THE CONTENT OF THE DISCIPLINE (FULL-TIME EDUCATION)

№	Name	Formed competencies	Semester	Types of educational work, including independent work of students and labor intensity (in hours)			
				L	PL	PT	SS
1.	Introduction to the discipline "Animal Hygiene"	GPC-2. Is able to interpret and evaluate in professional activity the influence of natural, socio-economic, genetic and economic factors on the physiological status of the animal body. GPC-2 ID-1 To know: ecology factors of the environment, its classification and the nature of relationships with living organisms; basic ecological concepts; interspecific relations of animals and plants, terms and bio ecology laws, parasites and hosts; ecological features of some types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body. GPC-2 ID-2 To be able to: use environmental factors and environmental laws in agricultural manufacture; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods in the environmental assessment of agricultural facilities and the production of agricultural products; assess the impact on the animal body, anthropogenic and economic factors. GPC-2 ID-3 To possess skills of: the knowledge of the origin of living organisms, the levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for studying environmental knowledge of the environment, the laws of the development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, with the use of digital technologies as well.;	5	2	1	1	2

2.	Air hygiene and microclimate of livestock buildings	PC-12. Organization of the preventive clinical studies of animals, control of the veterinary and sanitary conditions and microclimate of livestock premises in accordance with the plan of an-tiepizootic measures, plan of the prevention of non-contagious animal diseases. plan of veterinary and sanitary measures PC-12 ID-3 To be able to carry out veterinary quality control over the procurement of animal feed in order to ensure its veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases PC-12 ID-4 To know the recommended forms of the plan of antiepizootic measures, the plan of prevention of non-contagiouse animal diseases, the plan of veterinary and sanitary measures PC-12 ID-5 To know the procedure for conducting internal control of the veterinary and sani-tary conditions of the facilities and the microclimate of livestock premises, using digital equip-ment PC-12 ID-6 To know the normative indicators of microclimate parameters in livestock premises	5	4	3	1	14
3.	Soil hygiene	GPC-2. Is able to interpret and evaluate in professional activity the influence of natural, socio-economic, genetic and economic factors on the physiological status of the animal body. GPC-2 ID-1 To know: ecology factors of the environment, its classification and the nature of relationships with living organisms; basic ecological concepts; interspecific relations of animals and plants, terms and bio ecology laws, parasites and hosts; ecological features of some types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body. GPC-2 ID-2 To be able to: use environmental factors and environmental laws in agricultural manufacture; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods in the environmental assessment of agricultural facilities and the production of agricultural products; assess the impact on the animal body, anthropogenic and economic factors. GPC-2 ID-3 To possess skills of: the knowledge of the origin of living organisms, the levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for studying environmental knowledge of the environment, the laws of the development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, with the use of digital technologies as well.;	5	2	1	1	8

4.	Private animal hygiene. Hygiene and technology for keeping farm animals and poultry	PC-12. Organization of the preventive clinical studies of animals, control of the veterinary and sanitary conditions and microclimate of livestock premises in accordance with the plan of antiepizootic measures, plan of the prevention of non-contagious animal diseases. plan of veterinary and sanitary measures PC-12 ID-3 To be able to carry out veterinary quality control over the procurement of animal feed in order to ensure its veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases PC-12 ID-4 To know the recommended forms of the plan of antiepizootic measures, the plan of prevention of non-contagiouse animal diseases, the plan of veterinary and sanitary measures PC-12 ID-5 To know the procedure for conducting internal control of the veterinary and sani-tary conditions of the facilities and the microclimate of livestock premises, using digital equip-ment PC-12 ID-6 To know the normative indicators of microclimate parameters in livestock premises	5	8	7	1	16
				16	**12**	**4**	**40**
5.	Hygiene of water and animal drinking	PC-15. Management of organizational, technical, zootechnical and veterinary measures for the prevention of non-contagiouse diseases in accordance with the preventive plan, analysis of the effectiveness of measures for the prevention of animal diseases for its improvement PC-15 ID-1 To be able to assess the impact of animal welfare and feeding conditions on its health as part of the implementation of action plans for the prevention of animal diseases using digital technologies PC-15 ID-2 To be able to evaluate the effectiveness of preventive measures and ways to imple-ment them, using digital technologies as well PC-15 ID-3 To be able to carry out veterinary quality control and procurement of animal feed in order to ensure its veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases PC-15 ID-5 To know the types of measures for the prevention of non-contagious animal diseases and metabolic disorders in animals and the requirements for its implementation, in accordance with methodological guidelines, instructions, manuals, rules for the diagnosis, prevention and treatment of animals.	6	6	5	1	10

6.	Hygiene of feed and animal feeding	PC-15. Management of organizational, technical, zootechnical and veterinary measures for the prevention of non-contagiouse diseases in accordance with the preventive plan, analysis of the effectiveness of measures for the prevention of animal diseases for its improvement PC-15 ID-1 To be able to assess the impact of animal welfare and feeding conditions on its health as part of the implementation of action plans for the prevention of animal diseases using digital technologies PC-15 ID-2 To be able to evaluate the effectiveness of preventive measures and ways to imple-ment them, using digital technologies as well PC-15 ID-3 To be able to carry out veterinary quality control and procurement of animal feed in order to ensure its veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases PC-15 ID-5 To know the types of measures for the prevention of non-contagious animal diseases and metabolic disorders in animals and the requirements for its implementation, in accordance with methodological guidelines, instructions, manuals, rules for the diagnosis, prevention and treatment of animals.	6	4	3	1	14
7.	Fundamentals of veterinary protection of farms and com-plexes	PC-15. Management of organizational, technical, zootechnical and veterinary measures for the prevention of non-contagiouse diseases in accordance with the preventive plan, analysis of the effectiveness of measures for the prevention of animal diseases for its improvement PC-15 ID-1 To be able to assess the impact of animal welfare and feeding conditions on its health as part of the implementation of action plans for the prevention of animal diseases using digital technologies PC-15 ID-2 To be able to evaluate the effectiveness of preventive measures and ways to imple-ment them, using digital technologies as well PC-15 ID-3 To be able to carry out veterinary quality control and procurement of animal feed in order to ensure its veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases PC-15 ID-5 To know the types of measures for the prevention of non-contagious animal diseases and metabolic disorders in animals and the requirements for its implementation, in accordance with methodological guidelines, instructions, manuals, rules for the diagnosis, prevention and treatment of animals.	6	4	3	1	12

8.	Hygiene in transportation and care of animals	PC-12. Organization of the preventive clinical studies of animals, control of the veterinary and sanitary conditions and microclimate of livestock premises in accordance with the plan of an-tiepizootic measures, plan of the prevention of non-contagious animal diseases. plan of veterinary and sanitary measures PC-12 ID-3 To be able to carry out veterinary quality control over the procurement of animal feed in order to ensure its veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases PC-12 ID-4 To know the recommended forms of the plan of antiepizootic measures, the plan of prevention of non-contagiouse animal diseases, the plan of veterinary and sanitary measures PC-12 ID-5 To know the procedure for conducting internal control of the veterinary and sani-tary conditions of the facilities and the microclimate of livestock premises, using digital equip-ment PC-12 ID-6 To know the normative indicators of microclimate parameters in livestock premises	6	2	1	1	4
			TOTAL FOR THE 6TH SEMESTER:	**16**	**12**	**4**	**40**

6. THE LIST OF EDUCATIONAL AND METHODOLOGICAL SUPPORT FOR STUDENTS' SELF WORK

6.1. Guidelines for self -work

1. Kuznetsov A.F., Nechaev A.Yu., Belopolsky A.E., Safronov E.N. Guidelines for completing coursework in the discipline of animal hygiene for students of the Faculty of Veterinary Medicine in the specialty 36.05.01/ Kuznetsov A.F., Nechaev A.Yu. – St. Petersburg: SPbGAVM, 2016. − 11 p.

2. Kuznetsov A.F., Nikitin G.S. Guidelines for performing independent calculation work on animal hygiene for students of the Faculty of Veterinary Medicine, specialty 36.05.01/ Kuznetsov A.F., Nikitin G.S.. - St. Petersburg: SPbGAVM, 2015. - 42 p.

6.2. Literature for self-work

1. Balanin V.I., Nechaev A.Yu. Microclimate of livestock buildings: creation and means of ensuring it. – St. Petersburg, Publishing House of the Federal State Budgetary Educational Institution of Higher Professional Education "SPbGAVM", 2012 – 160 p.

2. Kochish I.I. and others. Workshop on animal hygiene. Textbook St. Petersburg, 2012 416 p.

3. Kuznetsov, A.F. (ed.) Animal hygiene: textbook / A.F. Kuznetsov (ed.), I.I. Kochish, V.G. Semenov, V.G. Sofronov, A.B. Muromtsev, A.V. Aristov. — 2nd revised and expanded. - St. Petersburg: "Kvadro", 2022. - 448 p. — ISBN 978-5-906371-17-1. — Text: electronic // Electronic library system Elibrica: [website]. — URL: https://elibrica.com/a61fdfe1-4276-41f0-b807-d8e57f19b24b (access date: 19.06.2025). — Access mode: for authorized. users

4. Kuznetsov A.F., Muromtsev A.B., Semenov V.G. Workshop on animal hygiene. St. Petersburg: LLC "Kvadro", 2014.-384 p.

5. Kuznetsov A.F., Rodin V.I. and others. Workshop on veterinary sanitation, zoohyena and bioecologists , 2013. - 512 p.

6. Kuznetsov A.F., Nikitin G.S. Modern technologies and hygiene of poultry keeping: Textbook. – St. Petersburg: Publishing House, 2012– 352 p.

7. Kuznetsov A.F., Belopolsky A.E. Fundamentals of general hygiene and veterinary sanitation. Tutorial. St. Petersburg, Federal State Educational Institution of Higher Professional Education SPbGAVM, 2013 – 151 p.

8. Kuznetsov, A.F. (ed.) Workshop on private zoohygiene with the basics of keeping animals. Volume 1. Cattle, sheep, goats, camels: textbook / A.F. Kuznetsov (ed.). - 1. - St. Petersburg: "Kvadro", 2022. - 256 p. — ISBN 978-5-906371-33-1. — Text: electronic // Electronic library system Elibrica: [website]. — URL: https://elibrica.com/755bf5c5-f27f-4cc3-90c1-0188fc9ae8b4 (access date: 19.06.2025). — Access mode: for authorized. users).

9. Kuznetsov, A. F. (ed.) Workshop on private animal hygiene with the basics of keeping animals. Volume 2. Farm poultry, pigs, horses, fur-bearing animals, laboratory animals: textbook / A. F. Kuznetsov. - 1. - St. Petersburg: "Kvadro", 2022. - 304 p. — ISBN 978-5-906371-34-8. — Text: electronic // Electronic library system Elibrica: [website]. — URL: https://elibrica.com/3a64ec41-04f9-4f68-b435-d43e4a9205d8 (access date: 19.06/2025). — Access mode: for authorized. Users

7. THE LIST OF BASIC AND ADDITIONAL LITERATURE NECESSARY FOR THE EDUCATION OF THE DISCIPLINE

a) basic literature:

1. Volkov, G.K. Animal hygiene: textbook / G.K. Volkov, I.R. Smirnova. - 1. - St. Petersburg: “Kvadro”, 2022. - 504 p. — ISBN 978-5-906371-82-7. — Text: electronic // Electronic library system Elibrica: [website]. — URL: https://elibrica.com/de883979-01f6-4004-be95-75b11dd14ddb (access date: 19.06.2025). — Access mode: for auto-resistance. users

2. Animal hygiene: [approved by the Educational Inspectorate of Universities of the Russian Federation]: a textbook for university students in the specialty: "Veterinary Medicine" - 05/36/01 qualification - veterinarian; "Veterinary and sanitary examination" qualification - bachelor; in the direction of "Zootechnics" - 03/36/02 qualification - bachelor and 04/36/02 qualification - master / Anatoly Fedorovich Kuznetsov, Ivan Ivanovich Kocish, Vladimir Grigorievich Semenov [etc.]; edited by A. F. Kuznetsova. - Ed. 2nd, revised and additional - St. Petersburg: “Kvadro”, 2015. - 448 p. - (Textbooks for universities. Special literature).

4. Workshop on animal hygiene: textbook / Kuznetsov Anatoly Fedorovich, Muromtsev Alexander Borisovich, Semenov Vladimir Grigorievich; under general ed. A. F. Kuznetsova. - St. Petersburg: “Kvadro”, 2014. - 384 p. - (Textbooks and teaching aids for higher educational institutions).

5. Fundamentals of general animal hygiene and veterinary sanitation: textbook / Kuznetsov Anatoly Fedorovich, Belopolsky Alexander Egorovich; Ministry of Agriculture of the Russian Federation, SPbGAVM. St. Petersburg: Publishing house of SPbGAVM, 2013. - 151 p.

6. Kuznetsov A.F., Laboratory workshop on general animal hygiene, textbook St. Petersburg:, 2017. 320 p. https://e.book.com/book/101855. (date of access: 19.06.2025).

b) additional literature:

1. Volkov, G.K. Animal hygiene: textbook / G.K. Volkov, I.R. Smirnova. - 1. - St. Petersburg: Quadro, 2022. - 504 p. — ISBN 978-5-906371-82-7. — Text: electronic // Electronic library system Elibrica: [website]. — URL: https://elibrica.com/de883979-01f6-4004-be95-75b11dd14ddb (access date: 19.06/2025). — Access mode: for authorized. users

2. Kuznetsov, A.F. (ed.) Animal hygiene and veterinary sanitation: a textbook for secondary vocational education / A.F. Kuznetsov (ed.), V.G. Tyurin, V.G. Semenov, G.S. Nikitin. - 1. - St. Petersburg: Quadro, 2022. - 384 p. — ISBN 978-5-906371-80-6. — Text: electronic // Electronic library system Elibrica: [website]. — URL: https://elibrica.com/c869516e-8c16-4f3a-806f-4c494d47fd3f (access date: 19.06/2025). — Access mode: for authorized persons. users.

3. Kuznetsov A.F. Veterinary mycology. St. Petersburg Publishing House, 2001. 416 p.

4. Kuznetsov A.F. Cattle 2nd edition: Maintenance, feeding, diseases. Tutorial. – St. Petersburg: Publishing House, 2016. – 624 p.

5. Kuznetsov A.F. Guidelines for water research. St. Petersburg, 2013

6. Kuznetsov A.F., Naidensky M.S. et al. Animal hygiene with the basics of designing livestock facilities. Textbook. - M "Kolos", 2007. - 500 p.

7. Periodicals of the magazines “Veterinary Medicine”, “Zootechnics”, etc.

8. THE LIST OF RESOURCES OF THE INFORMATION AND TELECOMMUNICATION NETWORK "INTERNET" NECESSARY FOR EDUCATION OF THE DISCIPLINE

To prepare for practical classes and perform independent work, students can use the following Internet resources:

1. https://meduniver.com – Medical information site.
2. http://www.spbgavm.ru/ebs-izdatelstva-lan.html, “Lan” information site

Electronic library systems:

1. EBS "SPBGUVM"
2. Legal reference system “ConsultantPlus”
3. University information system “RUSSIA”
4. Full-text database POLPRED.COM
5. Scientific electronic library ELIBRARY.RU
6. Russian Scientific Network
7. Electronic library system IQlib
8. Full-text interdisciplinary database on agricultural and environmental sciences ProQuest AGRICULTURAL AND ENVIRONMENTAL SCIENCE DATABASE
9. Electronic books from the publishing house “Prospekt Nauki” http://prospektnauki.ru/ebooks/
10. Collection “Agriculture. Veterinary" publishing house "Kvad-ro" https://elibrica.com/

9. METHODOLOGICAL GUIDELINES FOR STUDENTS ON EDUCATION OF THE DISCIPLINE

Methodological recommendations for students are a set of recommendations and explanations that allow them organize the process of studying this discipline optimally.

The content of methodological recommendations, as a rule, may include:

• Tips on planning and organizing the time needed to study the discipline. Description of the sequence of actions of the student, or the "scenario of studying the discipline".

Morning time is the most effective for academic work (from 8-14 hours), followed by afternoon time (from 16-19 hours) and evening time (from 20-24 hours). The most difficult material is recommended to be studied at the beginning of each time interval after rest. After 1.5 hours of work, a break is required (10-15 minutes), after 4 hours of work, the break should be 1 hour. Part of the scientific organization of labor is the master of the technique of mental labor. Normally, a student should devote about 10 hours a day to studying (6 hours at university, 4 hours at home).

The methodology of work when taking notes of oral presentations differs significantly from the methodology of work when taking notes of written sources.

By taking notes of written sources, the student has the opportunity to read again the desired passage of the text, reflect on it, highlight the main thoughts of the author, briefly formulate them, and then write them down. If necessary, he can also note his attitude to this point of view. Listening to the lecture, the student should transist most of the complexity of the above–mentioned works for another time, trying to use every minute to record the lecture, and not to comprehend it - there is no time left for this. Therefore, when taking notes of a lecture, it is recommended, to leave separate fields on each page for subsequent entries in addition to the summary.

After recording a lecture or making a summary of it, you should not leave work on the lecture material before preparing for the test. It is necessary to do as early as possible the work that accompanies takimg notes of written sources, the last could not be done during the recording of the lecture - read your notes, deciphering individual abbreviations, analyze the text, establish logical connections between its elements, in some cases show them graphically, highlight the main thoughts, mark issues, requiring additional processing, in particular, the teacher's consultations.

When working on the text of the lecture, the student should pay special attention to the problematic issues, raised by the teacher, during the lecture, as well as to his assignments and recommendations.

For each lecture, practical lesson and laboratory work, classification cod, topic, list of issues under consideration, volume in hours and links to recommended literature are provided. For classes conducted in interactive forms, its organizational form should be indicated: computer simulation, business or role-playing game, analysis of a specific situation, etc.

• Recommendations for preparing for practical classes

Practical (seminar) classes are an important part of the professional training of students. The main purpose of conducting practical (seminar) classes is to form students' analytical, creative thinking through the acquisition of practical skills. Practical classes are also conducted in order to deepen and consolidate the knowledge gained in lectures and in the process of independent work on normative documents, educational and scientific literature. For student, it is necessary, to study or repeat theoretical material on a given topic when preparing for a practical lesson for students.

When preparing for a practical lesson, the student is recommended to follow the following algorithm;

1) get acquainted with the plan of the upcoming lesson;

2) study the literature sources that have been recommended and familiarize yourself with the introductory notes to the relevant sections.

Methodological guidelines for practical (seminar) classes in the discipline, along with the work program and schedule of the educational process, refer to methodological documents that determine the level of organization and quality of the educational process.

The content of practical (seminar) classes is recorded in the working curricula of the disciplines in the sections "List of topics of practical (seminar) classes".

The most important component of any form of practical training are tasks. The basis of the task is an example that is understood from the standpoint of the theory developed in the lecture. As a rule, the main attention is paid to the formation of specific skills, which determines the content of students' activities - problem solving, laboratory work, clarification of categories and concepts of science, which are a prerequisite for correct thinking and speech.

• Practical (seminar) classes perform the following tasks:

- stimulate regular study of recommended literature, as well as attentive attitude to the lecture course;
- consolidate the knowledge gained in the process of lecture training and independent work on literature;
- expand the scope of professionally significant knowledge, skills, and abilities;
- allow you to verify the correctness of previously acquired knowledge;
- initiate skills of independent self-thinking, oral presentation;
- contribute to the free use of terminology;
-provide the teacher with the opportunity to systematically monitor the level of independent work of students.

Methodological guidelines for practical (seminar) classes on the discipline should be focused on modern business conditions, current regulatory documents, advanced technologies, the latest achievements of science, technology and practice, modern ideas about certain phenomena, the studied reality.

• Recommendations for working with literature.

Working with literature is an important stage of the student's self-work on mastering the subject, contributing not only to the consolidation of knowledge, but also to the expansion of horizons, mental abilities, memory, the ability to think, express and confirm personal hypotheses and ideas. In addition, the skills of research work necessary for further professional activityare developed.

When starting to study the literature on the topic, it is necessary to make notes, extracts, notes. It is mandatory to take notes of the works of theorists, which allow us to comprehend the theoretical basis of the study. For the rest, you can limit yourself to summary from the studied sources. All summaries and quotations must have the exact "return address" (author, title of the work, year of publication, page, etc.). It is advisable to write an abbreviated title of the question to which the extract or quotation refers. In addition, it is necessary to learn how to immediately compile a file of special literature and publications of sources, both proposed by the teacher and identified independently, as well as refer to bibliographic reference books, chronicles of journal articles, book chronicles, abstract journals. At the same time, publications of sources (articles, book titles, etc.) should be written on separate cards, which must be filled in according to the rules of bibliographic description (surname, initials of the author, title of the work. Place of publication, publisher, year of publication, number of pages, and for journal articles – the name of the journal, year of publication, page numbers). On each card, it is advisable to record the thought of the author of the book or a fact from this book on only one specific issue. If the work, even in the same paragraph or phrase, contains more judgments or facts on another issue, then they should be written out on a separate card. The presentation should be concise, accurate, without subjective assessments. On the back of the card, you can make your own notes about this book or article, its content, structure, on which sources it is written, etc.

• Explanations about working with control and test materials for the course, recommendations for completing homework.

Testing allows you to determine whether the actual behavior of the program corresponds to the expected one by performing a specially selected set of tests. A test is the fulfillment of certain conditions and actions necessary to verify the operation of the function under test or part of it. Each question in the discipline must be answered correctly by choosing one option.

10. EDUCATIONAL WORK

As part of the implementation of the discipline, educational work is carried out to form a modern scientific worldview and a system of basic values, the formation and development of spiritual and moral, civil and patriotic values, a system of aesthetic and ethical knowledge and values, attitudes of tolerant consciousness in society, the formation of students' need for work as the first vital necessity, the highest value and the main way to achieve success in life, to realize the social significance of your future profession.

11. THE LIST OF INFORMATION TECHNOLOGIES USED IN THE IMPLEMENTATION OF THE EDUCATIONAL PROCESS

11.1 Information technologies

For the educational process of the discipline is previewed the use of information technologies:

- practical classes using multimedia;
- interactive technologies (dialogues, collective discussion on various topics for realization a particular educational and professional task);
- interaction with students via e - mail;
- community work in the electronic information and educational environment of St. Petersburg State University: https://spbguvm.ru/academy/eios/

11.2. Software

The list of licensed and free- distributed software, including national programs

№ п/п	Technical and computer programs recommended by sections and topics of the program	License
1	MS PowerPoint	67580828
2	LibreOffice	free software
3	OS Alt Education	AAO.0022.00
4	ABIS " MARK-SQL"	02102014155
5	MS Windows 10	67580828
6	System Consult Plus	503/КЛ
7	Android OS	free software

12. THE MATERIAL AND TECHNICAL BASE NECESSARY FOR THE IMPLEMENTATION OF THE DISCIPLINE EDUCATIONAL PROCESS

The title of the discipline (module), practice in accordance with the curriculum	**The title of special rooms and rooms for self-work**	**Equipment of special rooms and rooms for self-work**
Hygiene of animal	353 (196084, St. Petersburg, Chernigovskaya str., building 5) Classroom for conducting seminar-type classes, group and individual consultations, ongoing monitoring and intermediate certification	*Specialized furniture:* desks, chairs, stools, teaching board. *Visual aids and educational materials*: instruments for monitoring microclimate indicators, laboratory glassware, demonstration tables, diagrams and posters on all lesson topics.
	349 (196084, St. Petersburg, Chernigovskaya str., building 5) Classroom for conducting seminar-type classes, group and individual consultations, ongoing monitoring and interim cer-	*Specialized furniture:* desks, chairs, stools, teaching board. *Visual aids and educational materials:* instruments for monitoring microclimate indicators, laboratory

	tification	glassware, demonstration tables, diagrams and posters on all lesson topics.
	206 Large reading room (196084, St. Petersburg, Chernigovskaya str., building 5) Room for independent work	*Specialized furniture:* tables, chairs. *Technical teaching aids:* computers with an Internet connection and access to the electronic information and educational environment.
	214 Small reading room (196084, St. Petersburg, Chernigovskaya str., building 5) Room for independent work	*Specialized furniture:* tables, chairs. *Technical teaching aids:* computers with an Internet connection and access to the electronic information and educational environment.
	324 Department of Information Technologies (196084, St. Petersburg, Chernigovskaya str., building 5) Room for storage and preventive maintenance of educational equipment	*Specialized furniture:* tables, chairs, special equipment, materials and spare parts for preventive maintenance of educational equipment
	Box No. 3 Carpentry workshop (196084, St. Petersburg, Chernigovskaya str., building 5) Room for storage and preventive maintenance of educational equipment	*Specialized furniture:* tables, chairs, special equipment, materials for preventive maintenance of specialized furniture

Developer:

Doctor of Veterinary Medicine, Associate Professor _____ Belopolskiy A.E.

Annex 1

Ministry of Agriculture of the Russian Federation
Federal State Budgetary Educational Institution
of higher education
"Saint Petersburg State University of Veterinary Medicine"

Department of Veterinary Hygiene and Radiobiology

FUND OF ASSESMENT TOOLS
for the discipline
"HYGIENE OF ANIMAL"

Level of higher education
SPECIALIST COURSE

Specialty 36.05.01 Veterinary medicine
«Profile: "General Clinical Veterinary Medicine»
Full-time education

Education starts in 2025

Saint Petersburg
2025

1. PASSPORT OF THE FUND OF ASSESMENT TOOLS

№	Acquired competence	Assessed modules of a discipline	Assesment tool
1.	GPC-2. Is able to interpret and evaluate in professional activity the influence of natural, socio-economic, genetic and economic factors on the physiological status of the animal body. GPC-2 ID-1 To know: ecology factors of the environment, its classification and the nature of relationships with living organisms; basic ecological concepts; interspecific relations of animals and plants, terms and bio ecology laws, parasites and hosts; ecological features of some types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body. GPC-2 ID-2 To be able to: use environmental factors and environmental laws in agricultural manufacture; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods in the environmental assessment of ag-ricultural facilities and the production of agricultural products; assess the impact on the animal body, anthropogenic and economic factors. GPC-2 ID-3 To possess skills of: the knowledge of the origin of living organisms, the levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for studying environmental knowledge of the environment, the laws of the development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, with the use of digital tech-nologies as well.;	Section 1. Structure of the atmosphere. Physical properties of air	Colloquium, tests
1.		Section 2. Air hygiene. Hygiene requirements for physical air parameters	Colloquium, tests
3.		Section 3. Harmful gases. Aeroionization, magnetic fields and electromagnetic fields. Dust and microbial contamination of air.	Colloquium, tests
4.		Section 4. Soil, its veterinary and hygienic significance. Design and construction of live-stock facilities.	Colloquium, tests
5.		Section 5. Hygiene of construction materials and building elements. Ventilation, heating of the building. Sewage, manure removal, bedding.	Colloquium, tests
6.		Section 6. Hygiene of keeping cattle.	Colloquium, tests
7.		Section 7. Hygiene of keeping pigs.	Colloquium, tests
8.		Section 8. Hygiene of keeping horses and ag-riculture. birds.	Colloquium, tests
9.		Section 9. Hygiene of keeping sheep, goats and fur-bearing animals.	Colloquium, tests

№	Acquired competence	Assessed modules of a discipline	Assesment tool
1.	PC-12. Organization of the preventive clinical studies of animals, control of the veterinary and sanitary conditions and microclimate of livestock premises in accordance with the plan of an-tiepizootic measures, plan of the prevention of non-contagious animal diseases. plan of veterinary and sanitary measures PC-12 ID-3 To be able to carry out veterinary quality control over the procurement of animal feed in order to ensure its veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases PC-12 ID-4 To know the recommended forms of the plan of antiepizootic measures, the plan of prevention of non-contagiouse animal diseases, the plan of veterinary and sanitary measures PC-12 ID-5 To know the procedure for conducting internal control of the veterinary and sani-tary conditions of the facilities and the microclimate of livestock premises, using digital equip-ment PC-12 ID-6 To know the normative indicators of microclimate parameters in livestock premises PC-15. Management of organizational, technical, zootechnical and veterinary measures for the prevention of non-contagiouse diseases in accordance with the preventive plan, analysis of the effectiveness of measures for the prevention of animal diseases for its improvement PC-15 ID-1 To be able to assess the impact of animal welfare and feeding conditions on its health as part of the implementation of action plans for the prevention of animal diseases using digital technologies PC-15 ID-2 To be able to evaluate the effectiveness of preventive measures and ways to imple-ment them, using digital technologies as well PC-15 ID-3 To be able to carry out veterinary quality control and procurement of animal feed in order to ensure its veterinary and sanitary safety as part of the	Section 1. Veterinary-hygienic and sanitary-ecological assessment and methods of treating wastewater from livestock enterprises.	Colloquium, tests
2.		Section 2. Assessment of natural waters and certification of sources. Water supply systems. Purification, improvement, disinfection of water.	Colloquium, tests
3.		Section 3. Techniques and modes of watering animals. Hygiene in commercial fish farming.	Colloquium, tests
4.		Section 4. Veterinary and hygienic significance of proper feeding. Assessment of quality, safety of feed and their certification.	Colloquium, tests
5.		Section 5 Prevention of diseases in animals caused by contamination of feed by various microorganisms: microbes, fungi, insects, etc.	Colloquium, tests
6.		Section 6. Prevention of feed injuries and nutri-tional metabolic diseases in animals.	Colloquium, tests
7.		Section 7. Biological waste, its collection, dis-posal and destruction.	Colloquium, tests
8.		Section 8. Hygiene of summer keeping of ani-mals. Hygiene in transportation of animals. Hygiene care.	Colloquium, tests
9.		Section 9. Sanitary-hygienic and veterinary-ecological protection of farms (preventive breaks, acquisition, disinfection, deratization, etc.)	Colloquium, tests

	implementation of action plans for the prevention of animal diseases PC-15 ID-5 To know the types of measures for the prevention of non-contagious animal diseases and metabolic disorders in animals and the requirements for its implementation, in accordance with methodological guidelines, instructions, manuals, rules for the diagnosis, prevention and treatment of animals.		

List of assessment tools

№	Name of the assessment tool	Brief description of the assessment tool	Presentation of the assessment tool in the fund
1.	Seminar	A means of monitoring the assimilation of educational material of a topic, section or sections of a discipline, organized as a training session in the form of an interview between a teacher and students	Questions about topics/sections of the discipline
2.	Test	A system of standardized tasks that allows you to automate the procedure measuring the level of knowledge and skills of the student	Test task fund
3.	Course work PC-15 ID-1 To be able to assess the impact of animal welfare and feeding conditions on its health as part of the implementation of action plans for the prevention of animal diseases using digital technologies PC-15 ID-2 To be able to evaluate the effectiveness of preventive measures and ways to imple-ment them, using digital technologies as well PC-15 ID-3 To be able to carry out veterinary quality control and procurement of animal feed in order to ensure its veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases PC-15 ID-5 To know the types of measures for the prevention of non-contagious animal diseases and metabolic disorders in animals and the requirements for its implementation, in accordance with methodological guidelines, instructions, manuals, rules for the diagnosis, prevention and treatment of animals.	The final product obtained as a result of planning and executing a set of educational and research tasks. A means of testing the ability to apply acquired knowledge according to a predetermined methodology to solve tasks in the discipline as a whole	Topics of individual assignments

2. INDICATORS AND CRITERIA FOR ASSESSING COMPETENCIES AT VARIOUS STAGES OF ITS FORMATION, DESCRIPTION OF ASSESSMENT SCALES

Planned results of competency acquaired	The level of development				Assesment tool
	Unsatisfactory	Satisfactory	Good	Exellent	
GPC-2. Is able to interpret and evaluate in professional activity the influence of natural, socio-economic, genetic and economic factors on the physiological status of the animal body.					
GPC-2 ID-1 To know: ecology factors of the environment, its classification and the nature of relationships with living organisms; basic ecological concepts; interspecific relations of animals and plants, terms and bio ecology laws, parasites and hosts; ecological features of some types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body.	Knowledge level below minimum requirements, had the place is rude errors	Minimum acceptable knowledge level, a lot was allowed minor mistakes	Level of knowledge in volume, appropriate program preparation, admitted several blacks errors	Level of knowledge in volume, appropriate program preparation, admitted several blacks errors	Colloquium, tests
GPC-2 ID-2 To be able to: use environmental factors and environmental laws in agricultural manufacture; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods in the environmental assessment of ag-ricultural facilities and the production of agricultural products; assess the impact on the animal body, anthropogenic and economic factors.	When deciding there are no standard tasks basic skills demonstrated, there were rough errors	The main skills, solved typical tasks with not rude mistakes, all completed tasks, but not in in full	All the main ones are demonstrated skills, all solved main tasks with not rude mistakes, all completed assignments in full volume, but some with shortcomings	All the main ones are demonstrated skills, all solved main tasks with separate insignificant shortcomings, all completed assignments in full volume	Colloquium, tests
GPC-2 ID-3 To possess skills of: the knowledge of the origin of living organisms, the levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for studying environmental knowledge of the environment, the laws of the development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, with the use of digital tech-nologies as well.;	When deciding no standard tasks basic skills have been demonstrated, there were rough errors	Available minmum set skills for solutions standard tasks with some shortcomings	Basic skills demonstrated when deciding standard tasks with some shortcomings	Demonstrated skills in decision non-standard tasks without errors and shortcomings	Colloquium, tests

Planned results of competency acquaired	The level of development				Assesment tool
	Unsatisfactory	Satisfactory	Good	Exellent	
PC-12. Organization of the preventive clinical studies of animals, control of the veterinary and sanitary conditions and microclimate of livestock premises in accordance with the plan of antiepizootic measures, plan of the prevention of non-contagious animal diseases. plan of veterinary and sanitary measures					
PC-12 ID-3 To be able to carry out veterinary quality control over the procurement of animal feed in order to ensure its veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases	Knowledge level below the minimum requirements, serious errors occurred	Minimum acceptble knowledge level, a lot was allowed minor mistakes	Level of knowledge in volume corresponding training program, admi-ted a few minor mistakes	Level of knowledge in volume, appropriate program preparation, without errors.	Colloquium, tests
PC-12 ID-4 To know the recommended forms of the plan of antiepizootic measures, the plan of prevention of non-contagiouse animal diseases, the plan of veterinary and sanitary measures PC-12 ID-5 To know the procedure for conducting internal control of the veterinary and sani-tary conditions of the facilities and the microclimate of livestock premises, using digital equip-ment PC-12 ID-6 To know the normative indicators of microclimate parameters in livestock premises	When deciding no standard tasks basic skills have been demonstrated, there were rough errors	The main skills, solved typical tasks with not rude mistakes, all completed tasks, but not in in full	All the main ones are demonstrated skills, all basic problems with non-rough ones have been solved mistakes, all completed assignments in full volume, but some with shortcomings	All the main skills, all solved main tasks with Separate insignificant shortcomings, all completed assignments in full volume	Colloquium, tests
PC-15. Management of organizational, technical, zootechnical and veterinary measures for the prevention of non-contagiouse diseases in accordance with the preventive plan, analysis of the effectiveness of measures for the prevention of animal diseases for its improvement					
PC-15 ID-1 To be able to assess the impact of animal welfare and feeding conditions on its health as part of the implementation of action plans for the prevention of animal diseases using digital technologies PC-15 ID-2 To be able to evaluate the effectiveness of preventive measures and ways to imple-ment them, using digital technologies as well PC-15 ID-3 To be able to carry out veterinary quality control and procurement of animal feed in order to ensure its veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases	Knowledge level below the minimum requirements, serious errors occurred	Minimum acceptable knowledge level, a lot was allowed minor mistakes	Level of knowledge in volume corresponding training program, admitted a few minor mistakes	Level of knowledge in volume, appropriate program preparation, without errors	Colloquium, tests
PC-15 ID-5 To know the types of measures for the prevention of non-contagious animal diseases and metabolic disorders in animals and the requirements for its implementation, in accordance with methodological guidelines, instructions, manuals, rules for the diagnosis, prevention and treatment of animals.	When deciding no standard tasks basic skills have been demonstrated, there were rough errors	Available minimum set skills for solutions standard tasks with some shortcomings	Basic skills demonstrated when deciding standard tasks with some shortcomings	Demonstrated skills in decision non-standard tasks without errors and shortcomings	Colloquium, tests

3. A LIST OF CONTROL TASKS AND OTHER MATERIALS, NECESSARY FOR THE ASSESSMENT OF KNOWLEDGE, SKILLS AND WORK EXPERIENCE

3.1. Typical tasks for the current control of academic progress

3.1.1. Questions for the seminar

Questions for assessing competence: GPC-2 "Able to interpret and evaluate in professional activities the influence of natural, socio-economic, genetic and economic factors on the physiological state of the animal's body."

GPC-2ID-1. Know environmental environmental factors, their classification and the nature of relationships with living organisms; basic ecological concepts, terms and laws of bioecology, interspecific relationships of animals and plants, predator and prey, parasites and hosts; environmental features of some types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body

1. Subject and main tasks of animal hygiene, research methods in animal hygiene.
2. Definition of concepts: weather, climate, atmosphere, monitoring, animal health, homeostasis, adaptation, natural resistance, stress and stressors.
3. Zoohygienic techniques to increase the natural resistance of the animal body.
4. What is thermoregulation and its zoohygienic significance.

GPC-2ID-2. Be able to use environmental environmental factors and environmental laws in agricultural production; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods during environmental assessment of agro-industrial complex objects and production of agricultural products, including using digital technologies; assess the influence of anthropogenic and economic factors on the animal body.

GPC-2ID-3. Have an understanding of the emergence of living organisms, levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for the study of ecological knowledge of the surrounding world, the laws of development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including the use of digital technologies.

5. The composition of solar radiation, the influence of visible light, ICL, UV rays on the animal body; their artificial sources used in livestock farming.
6. Methods for determining natural and artificial illumination in livestock farming: photometry, SC, CSR, specific power of electric illumination.
7. Concept and units of measurement, sources of formation, mechanism of action on the body, methods of determination, standards, instruments for measurement, methods of optimizing indicators: temperature (To), humidity, pressure, air movement, cataindex.
8. Concept and units of measurement, sources of formation, mechanism of action on the body, methods of determination, standards, measuring instruments, methods for optimizing indicators: dust pollution, microbial pollution.
9. Concept and units of measurement, sources of formation, mechanism of action on the body, methods of determination, standards, instruments for measurement, methods for optimizing indicators: Carbon monoxide (CO), Carbon dioxide (CO_2), Ammonia (NH_3), Hydrogen sulfide (H_2S).
10. Concept and units of measurement, sources of formation, mechanism of action on the body, methods of determination, standards, measuring instruments, methods for optimizing indicators: Aeroionization, Acoustic background.

11. Concept and units of measurement, sources of formation, mechanism of action on the body, methods of determination, standards, measuring instruments, methods for optimizing indicators: Magnetic fields (MF), Electromagnetic fields (EMF),
12. What is soil. Soil composition, varieties, physical, mechanical and chemical properties.
13. Biological composition of the soil. The doctrine of biogeochemical provinces.
14. Soil self-purification.

Questions for assessing competence: PC-12.15 “Organization of organizational, technical, zootechnical and veterinary activities aimed at the prevention of non-communicable diseases in accordance with the plan for the prevention of non-communicable animal diseases, analysis of the effectiveness of measures for the prevention of animal diseases in order to improve them." “Conducting preventive clinical studies of animals, checking the veterinary and sanitary condition and microclimate of livestock premises in accordance with the plan of anti-epizootic measures, the plan for the prevention of non-communicable animal diseases, and the plan of veterinary and sanitary measures.”

15. Types of water tests, rules for sampling water for research, water conservation.
16. Methods for measuring water temperature. Temperature indicators for various species and age groups of animals and their hygienic significance.
17. Methods for determining the taste, flavor, transparency, and smell of water. Standards for these indicators and their hygienic significance.
18. What is the pH of water? Methods for determining the pH of water, standards according to Sanitary Regulations and Regulations and their hygienic significance.
19. Determination of ammonium nitrogen, nitrite nitrogen, nitrates, albuminoid nitrogen, sulfates, chlorides and total iron in water. Standards and hygienic significance.
20. Principles for determining the oxidability of water, oxygen dissolved in water, BOD-5 of water. Standards and hygienic significance.
21. The principle of determining active chlorine in bleach and residual chlorine in chlorinated water. Standards and hygienic significance.
22. What is coli titer, coli index, microbial number? Standards and hygienic significance.
23. What is the meaning of determining the chlorine requirement of water?
24. Define removable, permanent, total water hardness. The principle of determining the total hardness of water.
25. What general principles should be considered when taking water samples?
26. Hygienic importance of water in livestock farming.
27. Sanitary and hygienic significance of water contaminated with microorganisms, larvae and eggs of helminths.
28. The importance of certification of water sources.
29. The essence of the process of mineralization of organic substances in water.
30. The need to organize sanitary protection zones for water bodies.
31. Water supply systems for livestock enterprises (centralized, noncentralized).
32. Techniques for improving water quality.
33. The essence of the bactericidal effect of chlorine on microorganisms.
34. Self-purification of water from open reservoirs. Factors influencing this process.
35. Veterinary and hygienic requirements for water.
36. Classification of natural waters (brief description).

37. Pollution of natural water, forms of qualitative changes in physical properties, chemical composition, biological properties.
38. Features of the watering regime for cattle, sheep, pigs.
39. Methods for disinfecting water from domestic and drinking water supply.
40. Caring for watering equipment.
41. Types of fish farms.
42. Water requirements in commercial fish farming.
43. Hygiene for transporting live fish and caviar.

3.1.2. Tests

Tests for assessing competence: GPC-2 “The student is able to interpret and evaluate in professional activities the influence of natural, socio-economic, genetic and economic factors on the physiological state of the animal’s body.”
GPC-2ID-1. Know the ecological factors of the environment, their classification and the nature of the relationship with living organisms; the main ecological concepts, terms and laws of bioecology, interspecies relationships of animals and plants, predator and prey, parasites and hosts; ecological features of some types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the organism of animals.

Task 1
Read the task and choose the correct answer.
What is the name of the set of meteorological phenomena that determines the state of the air environment in a given period of time in a given location?
1. climate
2. microclimate
3. cyclone
4. weather
Answer: 4

Task 2
Read the task and choose the correct answer.
What is the name of the science that deals with the protection and strengthening of animal health using rational methods of housing, feeding, breeding, exploitation, and care, ensuring high productivity determined by the genetic potential of the animal's body?
1. zoo hygiene
2. zoology
3. physiology
4. feeding
Answer: 1

Combined-type tasks with the choice of several correct answers from the provided options

Task 3
Read the task and choose the correct answer options.
What measures can reduce the risk of spreading infectious diseases on a livestock enterprise?
1. Regular disinfection of premises
2. Quarantine of animals brought into the farm
3. Increasing the area of the outdoor yards

4. Vaccination of animals

Answer: 1,2,4.

Task 4

Read the assignment and choose the correct answer options.

Cold diseases and decreased resistance of the body can occur in animals under the following combination of natural factors.

1. Low temperature, high humidity, and high air movement in the room;
2. High carbon dioxide content in the air, high air temperature, poor lighting in the room;
3. Increased hydrogen sulfide content in the air of the room;
4. Increased dustiness and microbial contamination of the air in livestock facilities;
5. High temperature and humidity of the air and low air movement in the room.

Answer: 1, 4, 5.

Task 5

Read the task and choose the correct answer options.

What innovative methods are used for the disposal of livestock waste?

1. Biogas plants for processing manure
2. Composting of manure
3. Burning manure in open pits
4. Disposing of liquid manure into water bodies after preliminary settling

Answer: 1;2

OPK-2 ID-2 Be able to use environmental factors and laws of ecology in agricultural production; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine for the prevention of infectious and invasive diseases and treatment of animals; use methods of ecological monitoring during environmental assessment of agricultural production facilities and the production of agricultural products, including the use of digital technologies; assess the impact of anthropogenic and economic factors on the animal organism.

Closed-type tasks for establishing sequence.

Task 6

Establish the chronological sequence of the oxidation of pollutant organic compounds during the sanitary assessment of water sources for animals:

1. Nitrates
2. Amino acids
3. Nitrites
4. Ammonia

Answer: 2,4,3,1

Task 7

Establish the chronological sequence of actions during the sanitary treatment of wastewater in livestock facilities:

1. Filtration.
2. Disinfection using disinfectants.
3. Sedimentation.
4. Disinfection using microorganisms and algae.

Answer: 3, 1, 4, 2.

Task 8
Establish the chronological sequence of actions for sanitary processing of livestock premises after the removal of animals:
1. Mechanical cleaning of manure and bedding.
2. Disinfection using disinfectants.
3. Ventilation of the room.
4. Wet cleaning with hot water.
Answer: 1, 4, 2, 3.

Task 9
Establish the chronological sequence of steps in conducting a bacteriological analysis of water using modern research methods:
1. Cultivation of colonies in a thermostat under a specific regime.
2. Sampling water into sterile containers while adhering to aseptic rules.
3. Interpretation of obtained results, formulation of a conclusion about the quality of water.
4. Plating the water sample on nutrient media, cultivation of microorganisms.
Answer: 2,4,1,3

Task 10
Establish the chronological sequence of stages in the development and implementation of an automated microclimate control system in an animal husbandry facility:
1. Installation of a system of sensors and equipment for regulating the parameters of the microclimate in the facility.
2. Analysis of the data obtained about the microclimate, assessment of the system's effectiveness, adjustment of its parameters.
3. Development of software for data analysis from sensors and automatic control of ventilation, heating systems, etc.
4. Conducting a preliminary analysis of the typical microclimate parameters for this type of animals, breeds, and age.
Answer: 4, 1, 3, 2

Task 11
Match the natural factor with its effect on the animal's body: (For each item in the left column, select the corresponding item from the right column).

Factor:		**Meaning:**	
A	Alkaloids	1	Reduces the taste qualities of plants, is toxic to fish, and has a strong hemolytic effect.
B	Glycosides	2	Poisoning, vomiting, abundant salivation, atony of the rumen, breathing disturbance, convulsions, death
V	Saponins	3	Defeats of the central and vegetative nervous systems, decreased motor activity, and lowered body temperature

G	Mustard oils	4	General oppression, increased pulse and breathing, disturbance of gastrointestinal function, irritate the skin and mucous membranes.

Write the selected numbers under the corresponding letters:

A	B	V	G

Answer: A-3; B -2; V-1; G-4.

Task 12

Match the natural factor with its effect on the animal's body: (For each item in the left column, select the corresponding item from the right column).

Factor:		**Meaning::**	
A	Heavy metals	1	Poisoning, growth retardation and death of the fetus, cancer
B	Radionuclides	2	Acute and chronic radiation sick-ness, oncological diseases
V	Pesticides and herbicides	3	They cause physiological disorders, toxicosis, allergies, and oncological diseases.
G	Mineral fertilizers	4	Methemoglobinemia, thyroid dysfunction, cancer

Write the selected numbers under the corresponding letters::

A	B	V	G

Answer: A-3; B-2; V-1; G-4.

Task 13

Establish a correspondence between a natural factor and its influence on the animal’s organism: (For each position given in the left column, select the corresponding position from the right column).

Factor:		**Meaning::**	
A	The influence of low temperatures	1	Burn
B	The influence of high temperatures	2	Frostbite
V	The influence of traumatic factors	3	Damage, wounds
G	The influence of high microbial contamination	4	The emergence of infectious diseases

Write the selected numbers under the corresponding letters::

A	B	V	G

Answer: A-2; B -1; V-3; G-4.

Task 14
Establish a correspondence between a natural factor and its influence on the animal's organism: (For each position given in the left column, select the corresponding position from the right column).

Factor:		**Meaning::**	
A	Hereditary predisposition to diseases	1	The need for careful selection of animals for reproduction
B	Increased resistance to infections	2	Improving the effectiveness of preventive measures
V	Tendency to developmental abnormalities	3	Risk of economic damage from diseases
G	High animal productivity	4	Premature aging of the organism and culling

Write the selected numbers under the corresponding letters::

A	B	V	G

Answer: A-3; B-2; V-1; G-4.

Task 15
Establish a correspondence between the production factor and its influence on the animal's organism: (For each position given in the left column, select the corresponding position from the right column).

Type of disinfection:		**Characteristic:**	
A	Scheduled disinfection	1	It is carried out regularly, regardless of the epizootic situation
B	Forced disinfection	2	It is carried out when an infectious disease is detected
V	Wet disinfection	3	It is used for treating premises with disinfectant solutions
G	Aerosol disinfection	4	It is used for treating premises in hard-to-reach places using finely dispersed aerosols

Write the selected numbers under the corresponding letters:

A	B	V	G

Answer: A-1; B-2; V-3; G -4.

GPC-2 ID-3. Have an understanding of the origin of living organisms, the levels of organization of living matter, the favorable and unfavorable factors affecting the organism; the basis for studying the ecological knowledge of the surrounding world, the laws of development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including the use of digital technologies

Task 16

Read the historical background and write a detailed, reasoned answer.

Biogeochemistry as a science was created at the beginning of the 20th century by the founder of mineralogy and geochemistry, Academician V. I. Vernadsky. The formal date of the emergence of biogeochemistry is considered to be November 15, 1932, when at a session of the USSR Academy of Sciences V. I. Vernadsky gave a report "The Importance of Biogeochemistry for Understanding the Biosphere". Based on the historical background, explain what biogeochemical provinces are in the Russian Federation.

Answer: Taiga-forest non-chernozem, forest chernozem, steppe chernozem, steppe dry, deserts, semi-deserts and mountainous.

Task 17

Read the historical background and write a detailed, reasoned answer.

According to Professor Voitkevich G.V., the development of the Earth's biosphere should be viewed as a succession of three stages. Based on the historical background, explain what these stages are.

Answer: 1. The first stage is restorative, began in space conditions and ended on Earth's heterotrophic biosphere. 2. The second stage is weakly oxidizing, marked by the appearance of photosynthesis; continued until the completion of sedimentation of the banded iron formations of the Precambrian (4,000 million years ago). 3. The third stage is oxidizing, characterized by the development of an oxidizing photoautotrophic biosphere.

Task 18

Read the historical background and write a detailed, reasoned answer. I.E. Marshak, depending on the change in heat production at different ambient temperatures, identifies four zones: the lower zone of increased metabolism, the zone of indifference, the zone of decreased metabolism, and the upper zone of increased metabolism. In the lower zone of increased metabolism, metabolism and heat production increase within the physiological norm. In the zone of indifference, metabolism and heat production remain at the same level. The temperature of the lower and upper boundaries of the zone of indifference (or thermoneutrality) is called the critical temperature. In the upper zone of increased metabolism, the air temperature exceeds body temperature, heat production increases, and heat transfer is difficult. Based on historical information, explain what air temperature in livestock buildings is considered normal.

Answer: The normal air temperature in rooms for keeping most farm animals is considered to be 5 - 18 ° C and up to 32 ° C under IR spectrum sources.

Task 19

Read the historical information and write a detailed, substantiated answer. Veterinary hygiene as a science began to develop in ancient times. Even then, people noticed that the conditions in which animals were kept affected their health and productivity. Hippocrates (5th-4th centuries BC) described in his works the influence of climate and nutrition on the occurrence of diseases in animals. In the Middle Ages, the development of animal husbandry and the increasing frequency of epizootics led to the emergence of the first veterinary schools and treatises devoted to issues of animal hygiene. In Russia, A.A. Raevich, M.G. Bogdanov, A.V. Nedachin and other scientists made a significant contribution to the development of veterinary hygiene, having developed a number of practical recommendations on the maintenance, feeding and disease prevention of farm animals. Based on historical information, explain why veterinary hygiene is an important component of ensuring veterinary well-being and productivity of animal husbandry.

Answer: Animal hygiene or zoohygiene is the science of protecting and strengthening the health of animals using rational methods of keeping, feeding, growing, exploiting and caring for them, ensuring high productivity due to the genetic potential of the living organism.

Task 20
Read the historical background and write a detailed, reasoned answer.
In the Middle Ages (5th-15th centuries) epizootics such as cattle plague and anthrax raged in Europe. This led to an understanding of the importance of isolating sick animals and quarantine. What veterinary and sanitary measures were used in the Middle Ages to combat epizootics? How did these methods evolve into the modern system of anti-epizootic measures?
Answer: In the Middle Ages, primitive by modern standards methods based on empirical observations were used to combat epizootics. Among them: strict isolation of infected animals, destruction of animal carcasses, and restriction of movement between farms. These methods formed the basis of modern anti-epizootic measures, which today include a wide range of actions: from vaccination and disinfection to epizootological monitoring and control of animal movement.

PC-12. Conducting preventive clinical studies of animals, checking the veterinary and sanitary condition and microclimate of livestock premises in accordance with the plan of anti-epizootic measures, the plan for the prevention of non-communicable animal diseases. plan of veterinary and sanitary measures.
PC-12ID-3. Be able to carry out veterinary control of the quality and procurement of animal feed in order to ensure their veterinary and sanitary safety as part of the implementation of plans for the prevention of animal diseases

CLOSED-TYPE TASKS

Combined-type tasks with choosing one correct answer from the proposed options

Task 1
Read the task and choose the correct answer. What is the moisture content standard for feed grain?
1. up to 18%
2. up to 14%
3. up to 16%
4. up to 20%
Answer: 2

Task 2
Read the task and choose the correct answer. What is the microbial contamination standard in animal feed?
1. up to 700 thousand microbial bodies in 1 g
2. up to 500 thousand microbial bodies in 1 g
3. up to 800 thousand microbial bodies in 1 g
4. up to 950 thousand microbial bodies in 1 g
Answer: 2

PC-12ID-4 Know the recommended forms of the plan for anti-epizootic measures, the plan for the prevention of non-communicable animal diseases, the plan for veterinary and sanitary measures.

Combined type tasks with the choice of several correct answers from the proposed options

Task 3
Read the task and choose the correct answer options. What regulatory documents for project examination are used by the veterinary service?
1. NTP
2. Recommended documents
3. SanPiN
4. SNiP
5. SP
Answer: 1;2

Task 4
Read the task and choose the correct answer options. What types of disinfection do you know?
1. planned
2. forced
3. simple
4. instant
5. slow
Answer: 1;2

Task 5
Read the task and choose the correct answer. What types of exercise do you know?
1. mechanical
2. manual
3. passive
4. active
5. walking
6. not walking
Answer: 3;4

PC-12ID-5 Know the procedure for conducting internal control of the veterinary and sanitary condition of the facility and the microclimate of livestock premises, using digital equipment

Closed-type tasks for establishing a sequence

Task 6
Establish the chronological sequence of actions when monitoring the content of harmful gases in a livestock building using a gas analyzer
1. Connecting tubes with reagents to the device and pumping air through them
2. Filling the glass tubes of the device with a powdered reagent
3. Selecting a measurement point and reagent for a certain type of gas
4. Calculating the gas content based on the degree of coloration of the reagent in the tubes. Answer: 3,2,1,4

Task 7
Establish a chronological sequence of actions when monitoring the air velocity in a livestock building using an anemometer
1. Turning on the operating mode of the device for 100 seconds
2. Turning on the anemometer to set idle speed
3. Selecting a measurement point, recording the initial readings of the device
4. Turning off the device, calculating the result obtained
Answer: 3,2,1,4

Task 8
Establish the chronological sequence of actions during sanitary treatment of a livestock building after the removal of animals:
1. Mechanical cleaning of the premises
2. Scheduled disinfection
3. Ventilation of the premises and placement of animals
4. Final wet cleaning
Answer: 1,4,2,3

Task 9
Establish the chronological sequence of actions when conducting an experimental study to assess the effect of new feed additives on animal productivity:
1. Formation of experimental and control groups of animals based on the main indicators.
2. Analysis and interpretation of the results obtained, assessment of their reliability
3. Introduction of feed additives into the diet of the experimental groups of animals, monitoring of feed and additive intake, monitoring of the condition of the animals
4. Development of a plan and timing of the experiment, selection of a feed additive and research methods
Answer: 4; 1; 3; 2.

Task 10
Establish the chronological sequence of actions during the veterinary and sanitary inspection of a livestock building:
1. Assessing the condition of ventilation and lighting systems.
2. Inspecting feeding and water supply systems
3. Checking manure removal systems and environmental protection facilities
4. Familiarization with the facility and its regulatory and technical documentation
Answer: 4;3;1;2.

Closed-ended tasks to establish compliance

Task 11
Establish a correspondence between the microclimate indicator of a livestock building and the device for measuring it: (for each position given in the left column, select the corresponding positions from the right column).

Indicator:		**Device:**	
A	Microbial contamination	1	Krotov's device
B	Noise pollution	2	Digital sound level meter
V	Illumination	3	Luxmeter
G	Atmospheric pressure	4	Aneroid barometer

Write the selected numbers under the corresponding letters:

A	B	V	G

Answer: A-1; B-2; V-3; G-4.

Task 12.
Establish a correspondence between the units of measurement of the microclimate of a livestock building and the device for measuring it: (for each position given in the left column, select the corresponding positions from the right column).

Factor:		**Meaning:**	
A	Suites	1	Thermometer
B	Millimeters of mercury	2	Barometer
V	Degrees Celsius	3	Luxmeter
G	Decibels	4	Sound level meter

Write the selected numbers under the corresponding letters:

A	B	V	G

Answer: A-3; B-2; V-1; G-4.

Task 13
Establish a correspondence between a natural factor and its influence on the animal's organism: (For each position given in the left column, select the corresponding position from the right column)

Factor:		**Influence:**	
A	High ambient temperature	1	Risk of developing respiratory diseases
B	High air humidity	2	Heat stress, decreased productivity
V	Solar radiation	3	Hypoxia, mountain sickness
G	Low atmospheric pressure	4	Synthesis of vitamin D, increased resistance

Write the selected numbers under the corresponding letters:

A	B	V	G

Answer: A-2; B-1; V-4; G-3.

Task 14
Establish a correspondence between the socio-economic factor and its influence on the occurrence of animal diseases: (for each position given in the left column, select the corresponding positions from the right column)

Factor:		**Influence:**	
A	High stocking density	1	The emergence and spread of infectious diseases
B	Unbalanced feeding	2	Decreased productivity and development of alimentary diseases
V	Violation of quarantine rules	3	Rapid spread of infectious and parasitic diseases, decreased productivity, mortality
G	Failure to comply with zoohygienic standards of maintenance	4	Risk of injury to animals and reduced productivity.

Write the selected numbers under the corresponding letters:

A	B	V	G

Answer: A-4; B-2; V-1; G -3.

Task 15

Establish a correspondence between the microclimate indicator of a livestock building and the device for measuring it: (for each position given in the left column, select the corresponding positions from the right column)

Indicator:		**Device:**	
A	Air temperature	1	Thermometer
B	Air humidity	2	Hygrometer
V	Air speed	3	Anemometer
G	Ammonia concentration	4	Gas analyzer

Write the selected numbers under the corresponding letters:

A	B	V	G

Answer: A-1; B-2; V-3; G-4.

PC-12ID-6 Know the standard indicators of microclimate parameters in livestock buildings

Task 16

Read the historical background and write a detailed, reasoned answer.

In Russia, the first hygienic provisions were developed and put into practice in the late 17th and early 18th centuries, which was caused by the need to develop domestic animal husbandry. The creation of an optimal microclimate plays a special role in the improvement of livestock buildings. What is the microclimate of livestock buildings?

Answer: In animal husbandry, microclimate is primarily understood as the climate of animal buildings, which is defined as a combination of the physical state of the air environment, its gas, microbial and dust pollution, taking into account the state of the building itself and technological equipment.

Task 17

Read the historical background and write a detailed, reasoned answer.

Meteorology, as one of the oldest sciences, began with visual observations of the weather. The entire period of observations of meteorological elements can be divided into two unequal parts: non-instrumental, visual observations and instrumental. Instrumental meteorological observations in Russia date back to the time when Peter the Great organized the navy. Who invented the psychrometer and when?

Answer: Richard Adolf Assmann (1845-1918), a German meteorologist, director of the Aeronautical Observatory of the Royal Meteorological Institute in Berlin.

Task 18

Read the historical background and write a detailed, reasoned answer.

Scientists have never abandoned attempts to learn how to predict the weather. They wanted to achieve the ability to determine weather forecasts for the near future. The first inventor who

proposed the idea of creating a device with the help of which it would be possible to implement the plan was Galileo. But it was not until 1643 that the theory of atmospheric pressure was developed by the French scientist Blaise Pascal. He realized that if air had vertical weight, then at higher altitudes the pressure would be lower. Who invented the barometer and when?
Answer: The barometer device for measuring atmospheric pressure was invented by the Italian mathematician and physicist Evangelista Torricelli in 1644.

Task 19.
Read the historical background and write a detailed, reasoned answer.
Stress in animals: cramped quarters, disruption of social ties - all these are stress factors that reduce immunity and increase susceptibility to infections. Solution: use of an enriched environment, ensuring a standard density of animal stocking, creating conditions for their natural behavior. Rapid spread of infections: a high concentration of animals contributes to the rapid spread of pathogens. Solution: strict sanitary and veterinary control, vaccination, effective ventilation and manure removal systems. Environmental pollution: livestock waste can become a source of soil, water and air pollution. Solution: introduction of environmentally friendly technologies for the disposal of manure and wastewater, control over emissions of harmful substances. For the successful development of animal husbandry, it is important to find a balance between intensification and compliance with veterinary and sanitary standards. Genetic factors can affect the resistance of animals to various diseases. How is this factor taken into account in modern veterinary hygiene and disease prevention?
Answer: Genetics plays an important role in disease resistance. Modern veterinary hygiene takes this into account, focusing on selection and genetic screening. The use of genetic factors in veterinary hygiene is an important step towards creating a healthy and productive livestock population.

Task 20.
Read the historical background and write a detailed, reasoned answer.
Before the invention of the microscope in the 17th century, the causes of many diseases remained unknown. Antonie van Leeuwenhoek, using a microscope of his own design, first described bacteria, opening the way to understanding the infectious nature of diseases. How have modern microscopy methods, such as electron and fluorescence microscopy, expanded the possibilities of veterinary diagnostics and research in the field of hygiene?
Answer: Modern microscopy methods, such as electron and fluorescent microscopy, have revolutionized veterinary diagnostics. Electron microscopy, which allows objects to be viewed with a resolution thousands of times greater than that of a light microscope, has made it possible to study viruses, bacteria, and intracellular structures in detail, which is extremely important for diagnosing many diseases. Fluorescent microscopy using special labels allows individual molecules and processes inside the cell to be visualized and studied, which opens up broad prospects for studying the pathogenesis of diseases and developing new methods of diagnosis and treatment.

PC-15 Organization of organizational, technical, zootechnical and veterinary measures aimed at preventing non-communicable diseases in accordance with the plan for the prevention of non-communicable animal diseases, analysis of the effectiveness of measures to prevent animal diseases in order to improve them.
PC-15ID-1. Be able to assess the impact of animal housing and feeding conditions on their health as part of the implementation of plans for animal disease prevention using digital technologies.

CLOSED-TYPE TASKS

Combined-type tasks with a choice of one correct answer from the proposed options

Task 1.
Read the task and choose the correct answer. What is the standard temperature in the premises for fattening pigs?
1. 5 - 10 degrees
2. 14 - 20 degrees
3. 8 - 12 degrees
4. 6 - 9 degrees
Answer: 2

Task 2. Read the task and choose the correct answer. What is the size of the stall for a stud stallion?
1. 17.5 square meters
2. 10 square meters
3. 16 square meters
4. 19 square meters
Answer: 3

Task 3
Read the task and choose the correct answer. How many times a day are adult animals fed?
1. 2 - 3 times a day
2. 1 time per day
3. 5 - 6 times a day
4. 7 - 8 times a day
Answer: 1

PC-15ID-2 Be able to evaluate the effectiveness of preventive measures taken and methods of their implementation, including using digital technologies.

Combined type tasks with a choice of several correct answers from the proposed options

Task 4
Read the task and choose the correct answer options. What innovative methods are used to utilize animal waste
1. Biogas plants for processing manure
2. Composting manure using new preparations
3. Burning manure in open pits
4. Discharging liquid manure into water bodies after preliminary settling
Answer: 1; 2.

Task 5
Read the task and choose the correct answer options What zoohygienic indicators can affect the productivity of farm animals
1. Combined lighting
2. Optimal feeding
3. Degree of inbreeding
4. Competent housing system
5. Certain types of soil
Answer: 1; 2; 4.

Closed-type tasks to establish a sequence

Task 6
Establish the chronological sequence of actions that can improve the quality of milk during mechanical milking
1. Putting on milking equipment
2. Wiping and massaging the udder
3. Milking the first streams of milk into a separate container
4. Inspecting and washing the udder
Answer: 4,2,3,1.

Task 7
Establish the chronological sequence of actions that can improve the quality of preventive disinfection
1. Treatment with disinfectants
2. Mechanical cleaning and wetting of surfaces
3. Clearing the premises of animals
4. Exposure and rinsing of surfaces
Answer: 3,2,1,4.

Task 8
Establish a chronological sequence of actions that can increase the natural resistance of animals
1. Compliance with the rules of animal quarantine
2. Compliance with the principle "everything empty - everything occupied"
3. Compliance with the rules of maintenance and feeding
4. Increasing the area of exercise yards and pastures
Answer: 1,3,2,4.

Task 9
Establish the chronological sequence of water purification methods from non-centralized water supply sources
1. Coagulation
2. Primary filtration (removal of debris and sand)
3. Final filtration
4. Settling
Answer: 2,4,1,3.

Task 10
Establish the chronological sequence of actions during veterinary and sanitary measures that can reduce the risk of spreading diseases in livestock enterprises:
1. Assessment of the condition of ventilation and lighting systems.
2. Inspection of feeding and water supply systems
3. Checking manure removal systems and nature conservation facilities
4. Familiarization with the facility and its regulatory and technical documentation
5. Disinfection of premises
Answer: 4,3,1,2,5

PC-15ID-3 Be able to carry out veterinary quality control and procurement of animal feed in order to ensure their veterinary and sanitary safety as part of the implementation of plans for the prevention of animal diseases.

Closed-type assignments to establish compliance

Task 11
Establish a correspondence between the type of feed and the optimal method of its quality control: (for each position given in the left column, select the corresponding positions from the right column).

Feed type:		**Control method**:	
A	Corn	1	Determination of protein, moisture and toxic elements (mycotoxins) content.
B	Hay	2	Determination of botanical composition, humidity and pest infestation.
V	Meat meal	3	Determination of microbial contamination, trace elements and antibiotics.
G	Feed additives	4	Determination of humidity, pest infestation and mycotoxins.

Write the selected numbers under the corresponding letters:

A	B	V	G

Answer: A-4; B-2; V-1; G-3.

Task 12
Establish a correspondence between the microclimate indicator of the premises for storing feed and the device for measuring it: (for each position given in the left column, select the corresponding positions from the right column).

Indicator:		**Device:**	
A	Air temperature	1	Thermometer
B	Air humidity	2	Psychrometer
V	Cooling capacity of air	3	Catathermometer
G	Hydrogen sulfide concentration	4	Gas analyzer

Write the selected numbers under the corresponding letters:

A	B	V	G

Answer: A-1; B-2; V-3; G-4.

Task 13

Match the disinfection equipment with its operating principle: (for each item given in the left column, select the corresponding items from the right column).

Equipment:		**Operating principle:**	
A	Ultraviolet irradiator	1	Disinfection of air and surfaces using ultraviolet radiation.
B	Autoclave	2	Reducing microbial contamination of feed using high temperature and pressure
V	Fire generator	3	Disinfection of air and surfaces using open flame.
G	Cold fog generator	4	Disinfection of air and surfaces by spraying finely dispersed disinfect-ants.

Write the selected numbers under the corresponding letters:

A	B	V	G

Answer: A-1; B-2; V-3; G-4.

Task 14

Match the name of the feed with its origin (For each position given in the left column, select the corresponding position from the right column).

Factor:		**Meaning:**	
A	Bran	1	A by-product of meat and fish processing and animal carcass disposal
B	Oilcake and meal	2	A by-product of milk processing
V	Meat and bone meal, blood meal and fish meal	3	A by-product of flour milling
G	Skim milk	4	A by-product of processing oilseed crops

Write the selected numbers under the corresponding letters:

A	B	V	G

Answer: A-3; B-4; V-1; G -2.

Task 15
Establish a correspondence between the low content of micro- and macroelements in feed and the resulting pathologies in animals (for each position given in the left column, select the corresponding positions from the right column).

Factor:		Meaning:	
A	Lack of calcium and phosphorus in the diet	1	White muscle disease
B	Lack of iodine in the diet	2	Rickets, osteomalacia
V	Lack of selenium in the diet	3	Deterioration of skin condition, hair loss, digestive problems
G	Lack of zinc in the diet	4	Endemic goiter

Write the selected numbers under the corresponding letters:

A	B	V	G

Answer: A-2; B-4; V-1; G -3.

PC-15ID-5. Know the types of measures for the prevention of non-communicable animal diseases and metabolic disorders in animals and the requirements for their implementation in accordance with methodological guidelines, instructions, guidelines, rules for the diagnosis, prevention and treatment of animals.

OPEN-TYPE ASSIGNMENT

Task 16
Read the historical background and write a detailed, reasoned answer.
The development of industrial animal husbandry in the second half of the 20th century led to new challenges in the field of veterinary hygiene, such as the problem of disposal of animal waste and the risk of spreading diseases in conditions of high concentrations of animals. What problems of veterinary hygiene are associated with intensive animal husbandry and what are the ways to solve them?
Answer: Intensive animal husbandry, despite its economic efficiency, poses a threat to the environment and epizootic welfare. The accumulation of a large number of animals in a limited area creates favorable conditions for the rapid spread of infectious and parasitic diseases. In addition, the problem of disposal of large volumes of waste is acute. The solution to these problems lies in improving animal husbandry technologies, developing effective ventilation and wastewater treatment systems, as well as in the use of modern biotechnology for waste processing.

Task 17
Read the historical background and write a detailed, reasoned answer.
At the beginning of the 20th century, the first disinfectants were developed, which made it possible to significantly reduce the spread of infections. What modern technologies and methods are used for disinfection in livestock farms? What advantages do they provide compared to traditional methods?

Answer: Modern livestock farms are actively introducing new disinfection technologies that significantly surpass traditional methods in terms of efficiency and safety. These include: ozonation, ultraviolet irradiation, aerosol disinfection. These technologies are highly efficient, environmentally friendly and safe for animals and personnel, which makes them indispensable in modern animal husbandry.

Task 18
Read the historical background and write a detailed, reasoned answer.
In the middle of the 20th century, with the development of genetics, selective improvement of animal breeds began, including resistance to diseases. How are modern genetic methods, such as genomic selection and DNA diagnostics, used in veterinary hygiene and disease prevention?
Answer: Genomic selection allows identifying animals with the best genetic potential for resistance to certain diseases, which helps to increase the overall resistance of the livestock. DNA diagnostics makes it possible to identify animals that are carriers of genetic diseases at early stages, which allows timely measures to prevent the spread of the disease in the population.

Task 19
Read the historical background and write a detailed, reasoned answer.
The early maturing meat SM-1 bacon breed was obtained in the USSR at the end of the 20th century using 15 species grown in the country. What is called bacon fattening of pigs?
Answer: Bacon is young pork prepared in the form of strips of specially cut and specially salted carcasses, without the head, spine, shoulder blades and lower parts of the legs. For bacon fattening, piglets of early maturing breeds and their crossbreeds are selected at the age of 3 months with a live weight of 25-30 kg. Fattening is completed when the piglets reach the age of 6-7 months and a live weight of 90-95 kg.

Task 20
Read the historical background and write down a detailed, reasoned answer.
A. P. Dmitrochenko, hero of the social. Truda, academician of the All-Union Academy of Agricultural Sciences, from 1945 to 1956, head of the department of feeding of agricultural animals at the Leningrad Veterinary Institute. What are the main areas of scientific research?
Answer: Development of new methods for assessing the nutritional value of feed, typification of feeding of agricultural animals, clarification of the patterns of their growth and individual development depending on the quality of feed. Made a significant contribution to the development of modern systems of respiratory apparatus and methods of exchange experiments, author of a textbook on feeding of agricultural animals.

3.2. Typical tasks for intermediate certification

Competency being developed: GPC-2 The student is able to interpret and evaluate in professional activities the influence of natural, socio-economic, genetic and economic factors on the physiological state of the animal body OPK-2ID-1. Know environmental environmental factors, their classification and the nature of relationships with living organisms; basic ecological concepts, terms and laws of bioecology, interspecific relationships of animals and plants, predator and prey, parasites and hosts; ecological features of some types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body

1. Purpose, objects and objectives of the discipline “Animal Hygiene”
2. The concept of the microclimate of livestock buildings, the main parameters of the microclimate.
3. Air temperature, the value of this indicator for animals /critical, optimal, optimally stimulating, high, low/

4. The concept of thermoregulation of the animal's body, methods of heat transfer.
5. Gas composition of atmospheric air. Zoohygienic value of air oxygen.
6. Zoohygienic techniques for increasing the natural resistance of the animal body.

GPC-2ID-2. Be able to use environmental environmental factors and environmental laws in agricultural production; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use methods of environmental monitoring during environmental assessment of agro-industrial complex objects and production of agricultural products, including the use of digital technologies; assess the influence of anthropogenic and economic factors on the animal body. Devices for measuring air temperature in livestock premises.
Zoohygienic value of air humidity. Standards. Methods for optimizing air humidity conditions.

7. Instruments for measuring air humidity in livestock buildings. The principles of their work.
8. Determination of absolute and relative air humidity.
9. Zoohygienic value of air mobility /wind rose, convection, advection, wind, drafts/. Methods of heat loss from the body of animals.
10. Instruments for measuring air speed in livestock buildings. The principles of their work.
11. Cooling capacity of air, method of determining it.
12. Catathermometer, principle of operation, method of obtaining indicators.
13. Instruments for determining atmospheric pressure.
14. Characteristics of optical radiation and its effect on animals.
15. Methods for normalizing natural illumination. Definition of SC.
16. Methods for regulating artificial illumination.
17. UV and IR rays and their zoohygienic significance.
18. Dust air pollution. Its characteristics and zoohygienic significance. Determination methods.
19. Microbial air pollution. Its characteristics and zoohygienic significance. Determination methods.
20. Gas composition of atmospheric air. Zoohygienic value of air oxygen.
21. Zoohygienic significance of carbon dioxide and carbon monoxide in the air, ways to reduce their concentration in rooms.
22. Determination of carbon dioxide in the air of livestock buildings.
23. Zoohygienic value of ammonia in the air, ways to reduce its concentration in rooms.
24. Determination of ammonia in the air of livestock buildings.
25. Zoohygienic significance of hydrogen sulfide in the air, ways to reduce its concentration in rooms.
26. Determination of hydrogen sulfide in the air of livestock buildings.
27. Acoustic pollution, its characteristics and zoohygienic significance.

GPC-2ID-3. Have an understanding of the emergence of living organisms, levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for the study of ecological knowledge of the surrounding world, the laws of development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including the use of digital technologies.

28. Ventilation of premises for farm animals. Theory of ventilation, classification of ventilation devices.
29. Principles of calculating air exchange.
30. Heat balance of livestock buildings. Heating systems and heating of premises for keeping animals. Principles for calculating the heat balance of a room.

31. Basics of design. Building plot. Veterinary-sanitary and zoo-veterinary gaps. Design assignment.
32. Veterinary and hygienic requirements for sewerage and manure removal in animal premises /sewage systems and elements, methods for manure removal and storage/.
33. Sanitary and hygienic characteristics of bedding materials. Ways to use litter.
34. Soil, its biological composition and properties. Zoohygienic value of soil. The doctrine of biogeochemical provinces.

Competency being developed: PC-12 Student "Able to conduct veterinary and sanitary examination, control production and certification of livestock products, beekeeping, aquaculture and feed, as well as transport animals and cargo during export-import operations to ensure food security hazards, conduct a sanitary assessment of livestock premises and structures"

PC-12ID-3. Be able to carry out veterinary quality control and procurement of animal feed in order to ensure their veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases.

PC-12ID-4 Know the recommended forms of the plan of anti-epizootic measures, the plan for the prevention of non-communicable animal diseases, the plan of veterinary and sanitary measures.

PC-12ID-5 Know the procedure for carrying out internal control of the veterinary and sanitary condition of the facility and the microclimate of livestock premises, using digital equipment PC-12ID-6 Know the standard indicators of microclimate parameters in livestock premises.

35. Hygiene of using feed containing nitrites and nitrates and prevention of these toxicoses in animals.
36. Zoohygienic value of minerals in feed
37. Hygiene of using feed containing solanine.
38. Determination of feed toxicity during sanitary and mycological research.
39. Hygiene in the use of feed that forms photosensitizers.
40. Hygiene of using feeds that form cyanoglycosides
41. Hygiene of using feed essential mustard oils.
42. Hygiene of using feed containing gossypol.
43. Dietary feed and dietary feeding of animals
44. Systems and methods of keeping cattle.
45. Hygiene of keeping dry cows.
46. Hygiene of keeping dairy cows.
47. Hygiene of keeping stud bulls.
48. Hygiene of keeping replacement young animals for dairy herds.
49. Hygiene of keeping newborn calves and after the preventive period.
50. Hygiene of keeping young cattle for fattening.
51. Hygiene in raising foals.
52. Hygiene of working horses.
53. Systems and methods of keeping pigs.
54. Hygiene during the reproduction of pigs (boars, single, inseminated and inseminated sows.)
55. Farrowing hygiene and rearing of suckling piglets.
56. Hygiene of keeping weaned piglets.
57. Hygiene of keeping replacement pigs
58. Hygiene for fattening pigs.
59. Hygiene of keeping goats and sheep.
60. Systems and methods of keeping poultry.

61. Hygiene in keeping laying hens.
62. Hygiene in raising broiler chickens.
63. Hygiene for keeping geese and ducks
64. Hygiene for keeping rabbits
65. Hygiene of keeping foxes and arctic foxes
66. Hygiene of keeping sables and minks
67. Hygiene for keeping dogs and cats

Formed competence: PC-15. Management of organizational, technical, zootechnical and veterinary measures for the prevention of non-contagiouse diseases in accordance with the preventive plan, analysis of the effectiveness of measures for the prevention of animal diseases for its improvement

PC-15 ID-1 **To be able to** assess the impact of animal welfare and feeding conditions on its health as part of the implementation of action plans for the prevention of animal diseases using digital technologies
PC-15 ID-2 **To be able to** evaluate the effectiveness of preventive measures and ways to implement them, using digital technologies as well
PC-15 ID-3 **To be able to** carry out veterinary quality control and procurement of animal feed in order to ensure its veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases
PC-15 ID-5 **To know** the types of measures for the prevention of non-contagious animal diseases and metabolic disorders in animals and the requirements for its implementation, in accordance with methodological guidelines, instructions, manuals, rules for the diagnosis, prevention and treatment of animals.

68. Basics of design. Types of projects. Design assignment.
69. Requirements for the site territory for the construction of livestock enterprises. Zoning and landscaping of farm areas. Sanitary - protective zones and veterinary gaps.
70. Veterinary-hygienic control and examination of projects during the construction of livestock enterprises.
71. Veterinary and hygienic assessment of parts of buildings: base, foundation, walls, ceiling, roof, doors, windows, floors, etc.
72. Building materials and products, their veterinary and hygienic characteristics / types of materials and mortars, basic properties of building materials: physical, mechanical, chemical; toxicity.
73. Ventilation of premises for farm animals /theory of ventilation, classification of ventilation devices, principles of calculating air exchange/.
74. Thermal balance of livestock buildings. Heating systems and heating systems for keeping animals. Principles for calculating the heat balance of a room.
75. Veterinary and hygienic requirements for sewage and manure removal in animal premises /sewage systems and elements, methods for manure removal and storage/.
76. Sanitary and hygienic characteristics of bedding materials. Ways to use litter.

3.1.4 Example topics for coursework

According to the competence of **GPC-2 «**Is able to interpret and evaluate in professional activity the influence of natural, socio-economic, genetic and economic factors on the physiological status of the animal body».

GPC-2 ID-1 To know: ecology factors of the environment, its classification and the nature of relationships with living organisms; basic ecological concepts; interspecific relations of animals and plants, terms and bio ecology laws, parasites and hosts; ecological features of some types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body.
GPC-2 ID-2 To be able to: use environmental factors and environmental laws in agricultural manufacture; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods in the environmental assessment of agricultural facilities and the production of agricultural products; assess the impact on the animal body, anthropogenic and economic factors.
GPC-2 ID-3 To possess skills of: the knowledge of the origin of living organisms, the levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for studying environmental knowledge of the environment, the laws of the development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, with the use of digital technologies as well.

According to the competence of PC-12 «Organization of the preventive clinical studies of animals, control of the veterinary and sanitary conditions and microclimate of livestock premises in accordance with the plan of antiepizootic measures, plan of the prevention of non-contagious animal diseases. plan of veterinary and sanitary measures».
PC-12 ID-3 To be able to carry out veterinary quality control over the procurement of animal feed in order to ensure its veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases
PC-12 ID-4 To know the recommended forms of the plan of antiepizootic measures, the plan of prevention of non-contagiouse animal diseases, the plan of veterinary and sanitary measures
PC-12 ID-5 To know the procedure for conducting internal control of the veterinary and sanitary conditions of the facilities and the microclimate of livestock premises, using digital equipment
PC-12 ID-6 To know the normative indicators of microclimate parameters in livestock premises

According to the competence of PC-15 «Management of organizational, technical, zootechnical and veterinary measures for the prevention of non-contagiouse diseases in accordance with the preventive plan, analysis of the effectiveness of measures for the prevention of animal diseases for its improvement».

PC-15 ID-1 To be able to assess the impact of animal welfare and feeding conditions on its health as part of the implementation of action plans for the prevention of animal diseases using digital technologies
PC-15 ID-2 To be able to evaluate the effectiveness of preventive measures and ways to implement them, using digital technologies as well.
PC-15 ID-3 To be able to carry out veterinary quality control and procurement of animal feed in order to ensure its veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases
PC-15 ID-5 To know the types of measures for the prevention of non-contagious animal diseases and metabolic disorders in animals and the requirements for its implementation, in accordance with methodological guidelines, instructions, manuals, rules for the diagnosis, prevention and treatment of animals

1. Topic 0-1. Tethered barn for 200 heads (four-row). Room dimensions: length – 68.5 m, width – 18.5 m, height – 2.8 m). Livestock: cows with a live weight of 400 kg with a milk yield of 15 kg - 55 heads, cows with a live weight of 500 kg with a milk yield of 20 kg - 45 heads, cows

with a live weight of 600 kg with a milk yield of 25 kg - 36 heads, cows with a live weight of 600 kg with a milk yield of 30 kg - 64 goals. Manure removal using TSHP scraper conveyors. District: Vologda region.

2. Topic 0-2. Tethered barn for 200 heads (four-row). Room dimensions: length – 68 m, width – 18.2 m, height – 2.8 m). Livestock: cows with a live weight of 450 kg with a milk yield of 15 kg - 75 heads, cows with a live weight of 550 kg with a milk yield of 25 kg - 65 heads, cows with a live weight of 600 kg with a milk yield of 30 kg - 25 heads, dry cows with a live weight of 500 kg – 25 heads, dry cows with a live weight of 600 kg – 10 heads. Manure removal using TSHP scraper conveyors. District: Arkhangelsk region.

3. Topic 0-3. Premises for keeping 150 heads of young cattle over 6 months old. Room dimensions: length – 70 m, width – 9.0 m, height – 3.0 m. Livestock: calves weighing 120 kg live weight - 35 heads, calves weighing 180 kg live weight - 55 heads, calves weighing 250 kg live weight - 47 heads, heifers weighing 250 kg - 13 heads. District: Novgorod region.

4. Topic 0-4. Premises for keeping 100 heads of calves aged from 3 to 6 months. Room dimensions: length - 50 m, width - 8.0 m, height - 2.8 m. Livestock: calves with a live weight of 90 kg - 30 heads, calves with a live weight of 120 kg - 35 heads, calves with a live weight of 150 kg - 25 goals, heifers weighing 200 kg - 10 goals. District: Leningrad region.

5. Topic 0-5. Cowshed for tethered housing of 100 heads of cattle (double-row), length – 69.1 m, width – 9.5 m, height – 2.8 m. Livestock: cows with a live weight of 500 kg with a milk yield of 15 kg – 19 heads, cows with a live weight of 550 kg with a milk yield of 20 kg - 31 heads, cows with a live weight of 500 kg dry - 15 heads, cows with a live weight of 600 kg dry - 35 heads. District: Omsk region.

6. Topic 0-6. Tethered barn for 100 heads (double-row), length – 69.0 m, width – 9.9 m, height – 2.8 m. Livestock: cows with a live weight of 500 kg with a milk yield of 15 kg – 19 heads, live cows weighing 550 kg with a milk yield of 20 kg - 10 heads, cows with a live weight of 550 kg with a milk yield of 25 kg - 21 heads, cows with a live weight of 450 kg dry - 15 heads, cows with a live weight of 600 kg dry - 35 heads. District: Belgorod region.

7. Topic 0-7. Premises for keeping 200 heads of young cattle over 6 months old. Dimensions of the room: length - 68 m, width - 12.0 m, height - 3.0 m. Livestock: heifers weighing 150 kg live weight - 75 heads, calves weighing 250 kg live weight - 89 heads, heifers weighing 320 kg - 36 heads. District: Murmansk region.

8. Topic 0-8. A room for keeping 40 heads of stud bulls at an artificial insemination station. Dimensions of the room: length – 35 m, width – 9.5 m, height – 3.0 m. Livestock: bulls with a live weight of 500 kg - 8 heads, bulls with a live weight of 600 kg - 23 heads, bulls with a live weight of 800 kg – 9 goals. Region: Krasnoyarsk region.

9. Topic 0-9. Premises for keeping 200 heads of young cattle over 6 months old. Dimensions of the room: length - 69 m, width - 11.0 m, height - 3.0 m. Livestock: heifers weighing 150 kg - 69 heads, calves weighing 250 kg - 87 heads, heifers weighing 350 kg - 44 heads. District: Pskov region.

10. Topic 0-10. Premises for fattening 400 head of cattle. Dimensions of the room: length - 95 m, width - 18.5 m, height - 3.0 m. Livestock: culled cows with a live weight of 500 kg - 125

heads, bulls with a live weight of 350 kg - 244 heads, culled heifers with a live weight 320 kg - 31 heads. District: Novosibirsk region.

11. Topic 0-11. A room for keeping 50 heads of stud bulls at an artificial insemination station. Dimensions of the room: length - 35 m, width - 9.5 m, height - 3.0 m. Livestock: bulls with a live weight of 500 kg - 21 heads, bulls with a live weight of 600 kg - 19 heads, bulls with a live weight of 800 kg - 10 heads. District: Volgograd region.

12. Topic 0-12. Premises for fattening 400 head of cattle. Dimensions of the room: length - 95 m, width - 18.5 m, height - 3.5 m. Livestock: culled cows with a live weight of 450 kg - 107 heads, bulls with a live weight of 350 kg - 265 heads, culled heifers with a live weight 320 kg – 28 heads. District: Moscow region.

13. **Topic 0-13.** Pig barn for 100 sows. Dimensions of the room: length - 80 m, width - 9.0 m, height - 3.0 m. Livestock: sows weighing 150 kg with offspring of 10 suckling piglets - 17 heads, sows weighing 200 kg with offspring of 10 suckling piglets – 15 heads, pregnant sows up to 2 months. and single ones weighing 200 kg – 31 heads, pregnant sows from 2 months. weighing 150 kg – 37 heads. District: Voronezh region.

14. Topic 0-14. Stable for 40 working horses. Dimensions of the room: length - 40 m, width - 8.5 m, height - 2.8 m. Livestock: mares with a live weight of 400 kg - 16 heads, geldings with a live weight of 400 kg - 23 heads, a stud stallion with a live weight of 400 kg - 1 head. District: Kurgan region.

15. Topic 0-15. Room for keeping 100 heads of calves from 3 to 6 months. Room dimensions: length -50 m, width - 8.0 m, height -3.0 m. Livestock: calves with a live weight of 90 kg - 35 heads, calves with a live weight of 120 kg - 30 heads, calves with a live weight of 150 kg - 20 heads , heifers weighing 200 kg – 15 heads. District: Bryansk region.

16. Topic 0-16. Tethered barn for 200 heads (four-row), length – 70 m, width – 18.5 m, height – 3.30 m. Livestock: cows weighing 450 kg and daily milk yield of 15 liters – 60 heads, cows weighing 500 kg and daily milk yield of 20 liters – 40 heads, cows weighing 550 kg and daily milk yield of 25 liters – 35 heads, cows weighing 600 kg and daily milk yield of 30 liters – 65 heads. District: Kaluga region.

17. Topic 0-17. Pig barn for 100 sows. Room dimensions: length - 80 m, width - 9.0 m, height - 3.0 m. Livestock: sows weighing 150 kg with offspring of 10 suckling piglets - 25 heads, sows weighing 200 kg with offspring of 12 piglets -suckers - 37 heads, sows pregnant up to 2 months. and single ones weighing 200 kg - 21 heads, pregnant sows from 2 months. Weighing 150 kg - 17 heads. District: Kursk region.

18. Topic 0-18. Poultry house for 5000 laying hens of the broodstock, the birds are kept on deep litter. Room dimensions: length – 90 m, width – 12.0 m, height – 3.0 m. Livestock: chickens weighing 1.8 kg – 1200 heads, weighing 2 kg – 1400 heads, weighing 2.2 kg – 2100, roosters weighing 2 kg - 75 heads, weighing 2.5 kg - 165 heads, weighing 3 kg - 60 heads. Region: Krasnodar region.

19. Topic 0-19. Tethered barn for 100 heads (double-row), length – 69.1 m, width – 9.1 m, height – 2.8 m. Livestock: cows weighing 450 kg and daily milk yield of 15 liters – 35 heads,

cows weighing 600 kg and a daily milk yield of 20 liters - 38 heads, cows weighing 500 kg dry - 15 heads and cows weighing 600 kg dry - 12 heads. District: Vladimir region.

20. Topic 0-20. Stable for 40 working horses. Room dimensions: length – 45 m, width – 8.5 m, height – 2.8 m. Livestock: mares weighing 600 kg with foals – 11 heads, single mares and geldings weighing 600 kg – 28 heads, stud stallion live weight 600 kg -1 head. District: Astrakhan region.

21. Topic 0-21. Premises for keeping 150 heads of young cattle over 6 months old. Dimensions of the room: length - 70 m, width - 9.1 m, height - 3.0 m. Livestock: calves with a live weight of 120 kg - 46 heads, calves with a live weight of 180 kg - 47 heads, calves with a live weight of 250 kg - 44 heads , heifers weighing 250 kg - 13 heads. District: Samara region.

22. Topic 0-22. Tethered barn for 100 heads (double-row), length – 69.13 m, width – 9.9 m, height – 2.8 m. Livestock: cows weighing 450 kg and daily milk yield of 15 liters – 20 heads, cows weighing 600 kg and a daily milk yield of 20 liters - 14 heads, cows weighing 500 kg and a daily milk yield of 25 liters - 30 heads, cows weighing 450 kg dry - 17 heads, cows weighing 600 kg dry - 19 heads. District: Ryazan region.

23. Topic 0-23. Fattening pigsty. Room dimensions: length - 100 m, width - 10.5 m, height - 2.8 m. Pens house 50 heads. Livestock: gilts with a live weight of 50 kg - 165 heads, gilts with a live weight of 60 kg - 185 heads, pigs with a live weight of 80 kg - 230, pigs with a live weight of 90 kg - 205 heads, pigs with a live weight of 100 kg - 115 heads . District: Tula region.

24. Topic 0-24. Premises for fattening 400 head of cattle. Dimensions of the room: length - 97 m, width - 18.5 m, height - 3.0 m. Livestock: culled cows with a live weight of 450 kg - 111 heads, bulls with a live weight of 350 kg - 248 heads, heifers culled with a live weight weighing 320 kg – 41 heads. Region: Perm region.

25. **Topic 0-25.** A calf barn with a maternity ward. Dimensions: length - 35.0 m, width - 9.0 m, height - 2.7 m. In the maternity ward there are: cows weighing 500 kg - 10 heads, in the dispensary for calves weighing 40 kg - 11 heads, in the calf barn: calves weighing 50 kg - 15 heads, calves weighing 60 kg - 9 heads, calves weighing 100 kg - 25 heads. District: Sverdlovsk region.

26. Topic 0-26. Poultry house for raising meat chickens for 6000 heads. The bird is kept on deep litter. Room dimensions: length – 60 m, width – 10.0 m, height – 3.3 m. Live weight at the end of growing 1.5 kg - 6000 heads. District: Kastroma region.

27. **Topic 0-27.** Fattening pigsty. Room dimensions: length - 101 m, width - 18.1 m, height - 2.8 m. There are 50 heads in the pens. Livestock: gilts with a live weight of 60 kg - 140 heads, gilts with a live weight of 70 kg - 120 heads, pigs with a live weight of 80 kg - 200 heads, pigs with a live weight of 90 kg - 190 heads, pigs with a live weight of 100 kg - 150 heads. District: Tver region.

28. Topic 0-28. Premises for keeping 200 heads of young cattle. Dimensions: length - 69.0 m, width - 12.0 m, height - 3.0 m. Livestock: heifers weighing 150 kg - 71 heads, heifers weighing 250 kg - 85 heads, heifers weighing 320 kg - 44 heads. Region: Republic of Karelia

29. **Topic 0-29.** Stable for 50 working horses. Room dimensions: length – 40 m, width – 9.0 m, height – 3.0 m. Livestock: mares weighing 400 kg live weight – 25 heads, geldings weighing 400 kg live weight – 24 heads, stud stallion weighing 400 kg live weight – 1 head. Region: Republic of Tatarstan.

30. Topic 0-30. Premises for fattening 400 head of cattle. Dimensions of the room: length - 96 m, width - 18.5 m, height - 3.5 m. Livestock: culled cows with a live weight of 500 kg - 75 heads, bulls with a live weight of 350 kg - 277 heads, culled heifers with a live weight 320 kg - 48 heads. District: Novosibirsk region.

31. **Topic 0-31.** Four-row barn for 200 heads. Room dimensions: length – 69.5 m, width – 19.0 m, height – 3.0 m. Livestock: cows weighing 550 kg and daily milk yield of 30 liters – 160 heads, dry cows weighing 600 kg – 11 heads and heifers live weight 450 kg – 29 heads. Region: Altai region.

32. Topic 0-32. Poultry house for raising meat chickens for 5000 heads. The bird is kept on deep litter. Room dimensions: length – 50 m, width – 12.0 m, height – 3.0 m. Live weight at the end of cultivation 1.5 kg. Region: Stavropol region.

33. Topic 0-33. Fattening pigsty. Dimensions of the room: length – 100 m, width – 18.5 m, height – 3.0 m. There are 30 heads in the pens. Livestock: gilts with a live weight of 50 kg - 412 heads, gilts with a live weight of 60 kg - 419 heads, pigs with a live weight of 80 kg - 199 heads, pigs with a live weight of 90 kg - 300 heads, pigs with a live weight of 100 kg - 170 heads District: Rostov region.

34. Topic 0-34. Four-row barn for 200 heads. Dimensions of the room: length - 69.5 m, width - 19.0 m, height - 3.0 m. Livestock: cows with a live weight of 500 kg, daily milk yield 20 l - 168 heads, dry cows with a live weight of 550 kg - 22 heads and heifers with a live weight of 350 kg - 10 heads. District: Yaroslavl region.

35. Topic 0-35. Two-row cowshed for 100 heads. Room dimensions: length – 68.5 m, width – 9.5 m, height – 3.0 m. Livestock: cows weighing 500 kg and daily milk yield of 25 l – 60 heads, dry cows weighing 550 kg – 28 heads and heifers live weight 350 kg - 12 heads Area: Smolensk region.

36. Topic 0-36. Four-row barn for 200 heads. Room dimensions: length – 69.5 m, width – 19.0 m, height – 3.0 m. Livestock: cows weighing 450 kg and daily milk yield of 15 liters – 131 heads, dry cows weighing 450 kg – 40 heads and heifers live weight 350 kg – 29 heads. District: Blagoveshchensk region.

37.

Topic 0-37. A calf barn with a maternity ward. Dimensions: length – 45.0 m, width – 9.0 m, height – 2.7 m. The maternity ward accommodates: cows weighing 500 kg – 9 heads, in the calf barn: calves aged 2-3 weeks. weighing 50 kg – 14 heads, calves aged 30 days. weighing 60 kg – 11 heads, calves aged 80 days. weighing 100 kg – 24 heads. District: Chelyabinsk region.

38. Topic 0-38. Premises for keeping 200 heads of young cattle. Dimensions: length – 68.5 m, width – 18.5 m, height – 3.0 m. Livestock: heifers weighing 150 kg – 69 heads, heifers weighing 250 kg – 88 heads, heifers weighing 320 kg – 43 heads . District: Leningrad region.

39. Topic 0-39. Pig barn for 100 sows. Dimensions of the room: length – 60 m, width – 9.0 m, height – 3.0 m. Livestock: sows weighing 150 kg with litter of 10 suckling piglets – 15 heads,

sows weighing 200 kg with litter of 10 piglets – 17 heads, pregnant sows up to 2 months and single, weighing 200 kg - 33 heads, pregnant sows from 2 months, weighing 150 kg - 35 heads. District: Pskov region.

40. Topic 0-40. Stable for 40 working horses. Room dimensions: length – 45 m, width – 8.5 m, height – 2.8 m. Livestock: mares weighing 600 kg with foals - 13 heads, single mares and geldings weighing 600 kg - 25 heads, stud stallions live weight 600 kg - 2 heads. Region: Republic of Kalmykia.

41. Topic 0-41. A poultry house for 6,000 commercial laying hens, the birds are kept on deep litter. Room dimensions: length - 76 m, width - 18.0 m, height - 3.5 m. Livestock: chickens weighing 1.8 kg - 1811 heads, weighing 2 kg - 2663 heads, weighing 2.2 kg - 1336 heads, roosters weighing 2 kg - 75 heads, weighing 2.5 kg - 67 heads, weighing 3 kg - 48 heads. District: Ulyanovsk region.

42. Topic 0-42. Room for keeping 40 heads of bulls - producers at the artificial insemination station. Dimensions: length – 35.0 m, width – 10.5 m, height – 3.5 m. Livestock: bulls weighing 500 kg – 9 heads, bulls weighing 600 kg – 22 heads, bulls weighing 800 kg – 9 heads. District: Kaliningrad region.

43. Topic 0-43. Premises for keeping 200 heads of young cattle. Dimensions: length - 69.1 m, width - 12.0 m, height - 2.8 m. Livestock: heifers weighing 150 kg - 57 heads, heifers weighing 250 kg - 93 heads, heifers weighing 320 kg - 50 heads. District: Lipetsk region.

44. Topic 0-44. Four-row barn for 200 heads. Room dimensions: length – 69.0 m, width – 19.0 m, height – 3.0 m. Livestock: cows weighing 500 kg and daily milk yield of 20 liters - 140 heads, cows weighing 500 kg dry - 26 heads and heifers with a live weight of 350 kg - 34 heads. Region: Primorsky Krai.

45. Topic 0-45. Four-row barn for 200 heads. Room dimensions: length – 70.0 m, width – 19.5 m, height – 3.0 m. Livestock: cows weighing 500 kg and daily milk yield of 15 l – 131 heads, dry cows weighing 500 kg – 32 heads and heifers live weight 350 kg - 37 heads. District: Nizhny Novgorod region.

46. Topic 0-46. Premises for keeping 200 heads of young cattle. Dimensions: length – 69.5 m, width – 12.0 m, height – 2.8 m. Livestock: heifers weighing 220 kg – 73 heads, heifers weighing 250 kg – 91 heads, heifers weighing 350 kg – 36 heads . District: Tambov region.

47. Topic 0-47. Barn for box housing for 400 heads (two barns for 200 heads each are interconnected with a milk block). Each barn has 4 sections of 50 heads. Dimensions: length – 78.0 m, width – 18.0 m, height – 3.0 m. Livestock: cows weighing 450 kg and daily milk yield of 15 l – 80 heads, cows weighing 500 kg and daily milk yield of 15 l – 87 heads, cows weighing 500 kg and daily milk yield of 20 liters – 73 heads, cows weighing 550 kg and daily milk yield of 25 liters – 57 heads, cows weighing 600 kg and daily milk yield of 30 liters – 48 heads, dry cows weighing 450 kg – 27 heads, dry cows weighing 500 kg – 28 heads. District: Tomsk region.

48. Topic 0-48. Pig barn for 100 sows. Dimensions of the room: length – 58 m, width – 9.0 m, height – 3.0 m. Livestock: sows weighing 150 kg with litter of 10 suckling piglets – 16 heads, sows weighing 200 kg with litter of 10 piglets – 19 heads, pregnant sows up to 2 months and single weighing 200 kg - 21 heads, pregnant sows from 2 months weighing 150 kg - 26 heads. District: Saratov region.

49. Topic 0-49. Room for box housing of calves aged 3 to 6 months. for 165 heads. The room is divided into 3 sections. Dimensions: length – 72 m, width – 18.6 m, height – 2.8 m. Livestock: calves from 3 to 4 months old are housed in the first section. live weight 120 kg - 55 heads, calves from 4 to 5 months old are placed in the second section. live weight 150 kg - 55 heads, the third section houses calves from 5 to 6 months. live weight 200 kg – 55 heads. District: Moscow region.

50. Topic 0-50. Fattening pigsty. Dimensions of the room: length - 100 m, width - 18.1 m, height - 2.8 m. There are 30 heads in the pens. Livestock: gilts with a live weight of 50 kg - 433 heads, gilts with a live weight of 60 kg - 419 heads, pigs with a live weight of 80 kg - 201 heads, pigs with a live weight of 90 kg - 197 heads, pigs with a live weight of 100 kg - 150 heads District: Oryol region.

51. Topic 0-51. Room for keeping 40 heads of bulls - producers at the artificial insemination station. Dimensions: length - 37 m, width - 12 m, height - 3.5 m. Livestock: bulls weighing 450 kg - 11 heads, bulls weighing 600 kg - 17 heads, bulls weighing 800 kg - 12 heads. District: Penza region.

52. Topic 0-52. Box barn for 200 heads. Dimensions: length – 72.0 m, width – 20.4 m, height – 2.8 m. Livestock: cows weighing 450 kg and daily milk yield of 15 l – 25 heads, cows weighing 500 kg and daily milk yield of 20 l – 30 heads, cows weighing 550 kg and daily milk yield of 20 l – 40 heads, cows weighing 600 kg and daily milk yield of 25 l – 43 heads, cows weighing 600 kg and daily milk yield of 30 l – 26 heads, dry cows weighing 500 kg – 10 heads, dry cows weighing 550 kg – 19 heads, dry cows weighing 600 kg – 7 heads. Area: Kemerovo region.

53. Topic 0-53. Room for tethered keeping of heifers aged from 21 to 25 months. for 100 goals Room dimensions: length - 72.0 m, width - 18.0 m, height - 2.8 m. Livestock: heifers weighing 250 kg - 57 heads, heifers weighing 350 kg - 43 heads. Area: Irkutsk region.

54. Topic 0-54. Room for box housing of calves aged 3 to 6 months. for 175 heads. The room is divided into 3 sections. Dimensions: length - 72 m, width - 18.6 m, height - 2.8 m. Livestock: calves from 3 to 4 months are placed in the first section. live weight 100 kg - 70 heads, calves from 4 to 5 months old are placed in the second section. live weight 120 kg - 65 heads, the third section houses calves from 5 to 6 months. live weight 150 kg – 40 heads. District: Orenburg region.

55. Topic 0-55. Box barn for 200 heads. Room dimensions: length – 72.0 m, width – 20.4 m, height – 2.8 m. Livestock: cows weighing 400 kg and daily milk yield of 10 l – 30 heads, cows weighing 450 kg and daily milk yield of 15 l - 20 heads, cows weighing 500 kg and daily milk yield of 15 l - 40 heads, cows weighing 550 kg and daily milk yield of 15 l -20 heads, cows weighing 600 kg and daily milk yield of 15 l - 51 heads, cows weighing 600 kg and a daily milk yield of 20 liters - 26 heads, dry cows weighing 400 kg - 10 heads, dry cows weighing 500 kg - 3 heads. Region: Republic of Adygea.

56. Topic 0-56. Room for tethered keeping of heifers aged from 21 to 25 months. for 100 heads. Room dimensions: length - 72.0 m, width - 10.0 m, height - 2.8 m. Livestock: heifers weighing 250 kg - 59 heads, heifers weighing 350 kg - 41 heads. District: Leningrad region.

57. Topic 0-57. Tethered barn for 100 heads (double-row), length – 70.0 m, width – 9.3 m, height – 2.8 m. Livestock: cows with a live weight of 450 kg with a milk yield of 15 kg - 28

heads, live cows weighing 600 kg with a milk yield of 20 kg - 41 heads, cows weighing 500 kg live weight dry - 17 heads, cows weighing 600 kg live weight dry - 14 heads. Region: Republic of Bashkortostan.

58. Topic 0-58. Tethered barn for 100 heads (double-row), length – 69.1 m, width – 9.1 m, height – 2.7 m. Livestock: cows with a live weight of 450 kg with a milk yield of 10 kg – 27 heads, live cows weighing 450 kg with a milk yield of 15 kg – 11 heads, cows weighing 500 kg live weight with a milk yield of 20 kg – 13 heads, cows weighing 600 kg live weight with a milk yield of 30 kg – 16 heads, cows weighing 500 kg live weight dry – 15 heads, dry cows with a live weight of 600 kg - 18 heads. Region: Republic of Mordovia.

59. Topic 0-59. Premises for keeping 200 heads of young cattle over 6 months old. Room dimensions: length – 68.5 m, width – 11.0 m, height – 3.0 m. Livestock: heifers weighing 150 kg live weight – 73 heads, calves weighing 250 kg live weight – 91 heads, heifers weighing 320 kg – 36 heads Region: Amur region.

60. Topic 0-60. Fattening pigsty. Dimensions of the room: length - 100 m, width - 18.5 m, height - 2.8 m. There are 50 heads in the pens. Livestock: gilts with a live weight of 50 kg - 115 heads, gilts with a live weight of 60 kg - 110 heads, pigs with a live weight of 80 kg - 215 heads, pigs with a live weight of 90 kg - 205 heads, pigs with a live weight of 100 kg - 165 heads District: Ivanovo region.

61. Topic 0-61. Stable for 40 working horses. Room dimensions: length – 45 m, width – 8.5 m, height – 2.8 m. Livestock: mares weighing 600 kg with foals - 9 heads, single mares and geldings weighing 600 kg - 30 heads, stud stallion live weight – 1 head. Region: Republic of Mari El.

62. Topic 0-62. Tethered barn for 200 heads, four-row. Dimensions of the room: length - 70.0 m, width - 19.0 m, height - 2.7 m. Livestock: cows with a live weight of 600 kg with a milk yield of 30 kg - 160 heads, cows with a live weight of 600 kg dry - 11 heads, heifers with a live weight of 450 kg - 29 heads. District: Sverdlovsk region.

63. Topic 0-63. Cowshed for 100 heads, two-row. Dimensions of the room: length - 69.0 m, width - 9.5 m, height - 2.8 m. Livestock: cows with a live weight of 500 kg with a milk yield of 20 kg - 72 heads, cows with a live weight of 500 kg dry - 28 heads. District: Novgorod region.

64. Topic 0-64. Premises for fattening 400 head of cattle. Room dimensions: length - 95 m, width - 18.0 m, height - 3.2 m. Livestock: culled cows with a live weight of 450 kg - 124 heads, bulls with a live weight of 350 kg - 245 heads, culled heifers with a live weight 320 kg – 31 heads. District: Bryansk region.

65. Topic 0-65. Cowshed for 200 heads. Room dimensions: length – 78.0 m, width – 20.5 m, height – 3.7 m. The student selects the livestock, breed and productivity of animals in accordance with the region independently. District: Omsk region.

66. Topic 0-66. Four-row barn for 200 heads. Dimensions of the room: length - 70.5 m, width - 21.0 m, height - 3.0 m. The student selects the livestock, breed and productivity of animals in accordance with the region independently. District: Leningrad region.

67. Topic 0-67. Two-row cowshed for 100 heads. Room dimensions: length – 67.9 m, width – 9.9 m, height – 3.5 m. The student selects the livestock, breed and productivity of animals in accordance with the region independently. District: Moscow region.

3.1.5. Questions for the exam

3.1.5. Questions for the exam

Formed competence: Questions for assessing competence: GPC-2 "Able to interpret and evaluate in professional activity-style the influence of natural, socio-economic, genetic and economic factors on the consistent state of the animal's body."

GPC-2ID-1. Know environmental environmental factors, their classification and the nature of dependence on living organisms; basic ecological concepts, terms and laws of bioecology, interspecific relationships of animals and plants, predators and prey, parasites and hosts; environmental features of certain types of pathogenic microorganisms; Mechanisms of industrial anthropogenic and economic factors on the animal body

1. Subject, place, methods and tasks of zoohygiene.
2. Basic concepts in animal hygiene: external environment, health and natural resistance of animals, adaptation and acclimatization, stress and stress factors.
3. Gas composition of atmospheric air. Zoohygienic value of air oxygen.
4. Zoohygienic techniques for increasing the natural resistance of the animal body.

GPC-2ID-2. Be able to use environmental environmental factors and environmental laws in agricultural production; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods in the environmental assessment of agro-industrial complex objects and production of agricultural products, including the use of digital technologies; assess the impact of anthropogenic and economic factors on the animal body.

GPC-2ID-3. Have an understanding of the emergence of living organisms, levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for the study of ecological knowledge of the surrounding world, the laws of development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including the use of digital technologies.

5. Air temperature, the value of this indicator for animals /critical, optimal, optimally stimulating, high, low/
6. Zoohygienic value of air humidity. Standards. Methods for optimizing air humidity conditions.
7. Zoohygienic value of air mobility /wind rose, convection, advection, wind, drafts/. Methods of heat loss from the body of animals.
8. Illumination of livestock buildings, zoohygienic value of visible light.
9. Cooling capacity of air / the significance of this indicator for animals, ways to optimize it; devices for measuring this indicator, principles of operation of these devices.
10. UV and IR rays and their zoohygienic significance.
11. Zoohygienic significance of carbon dioxide, ammonia, hydrogen sulfide and carbon monoxide in the air, ways to reduce their concentration in premises.
12. Dust pollution and microbial contamination of the air. Its characteristics and zoohygienic significance. Ways to optimize the air environment.

13. Aeroionization; acoustic pollution, their characteristics and zoohygienic significance.
14. Soil, its biological composition and properties. Zoohygienic significance of soil. The doctrine of biogeochemical provinces. Self-cleaning of the soil.

Formed competence: Questions for assessing competence: PC-12 “Able to conduct veterinary and sanitary examination, control the production and certification of livestock products, beekeeping, aquaculture and feed, as well as transport animals and cargo during export-import operations for ensuring food security, conducting a sanitary assessment of livestock premises and structures"

PC-12ID-3. Be able to carry out veterinary quality control and procurement of animal feed in order to ensure their veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases

15. Quality assessment, feed safety and certification.
16. Hygiene of using feed containing nitrites and nitrates and prevention of these toxicoses in animals.
17. Zoohygienic value of minerals in feed
18. Hygiene in the use of feed containing solanine.
19. Determination of feed toxicity during sanitary and mycological research.
20. Hygiene in the use of feed that forms photosensitizers.
21. Hygiene of using feeds that form cyanoglycosides
22. Hygiene of using feed essential mustard oils.
23. Hygiene of using feed containing gossypol.
24. Dietary feed and dietary feeding of animals
25. Hygiene of using feed that produces toxalbumin and narcotic substances.
26. Assessment and recommendations for the use of feed based on complete sanitary-mycological and toxicological analyses.
27. Basic hygiene regimes and rules for feeding animals
28. Deficiency of organic substances in the diet and its effect on the animal body
29. Hygiene of feed in the presence of aflatoxins.
30. Assessment of feed contaminated with organisms of animal origin (insects, mites, helminths, etc.).
31. Hygiene of feed in the presence of mycotoxins.
32. Zoohygienic importance of vitamins in feed and prevention of hypovitaminosis.
33. Standardization and regulation of water quality. Comparative characteristics of water from various water sources.
34. Rules for taking water samples and preserving it.
35. Self-purification of natural water. The hygienic significance of this process. The essence of the mineralization process in water. Factors influencing this process.
36. Zoohygienic value of ammonium, nitrate and nitrite nitrogen in water. Standards.
37. Water supply systems for livestock enterprises and hygiene of animal watering. Maintenance of water drinking equipment.
38. Organoleptic and physical properties of water, their significance. Standards.
39. Zoohygienic value of water hardness.
40. Zoohygienic significance of chlorides, sulfates and iron in water.
41. Zoohygienic value of dissolved oxygen and BOD5 of water.
42. Techniques for improving water quality and methods for its disinfection.
43. Certification of natural water sources. Protection of natural reservoirs.
44. Methods and stages of disinfection of wastewater from livestock buildings.
45. Zoohygienic requirements for water for fish farms.
46. Veterinary and hygienic requirements for the transportation of animals, live fish and caviar.

PC-12ID-4 Know the recommended forms of the plan of anti-epizootic measures, the plan for the prevention of non-communicable animal diseases, the plan of veterinary and sanitary measures. PC-12ID-5 Know the procedure for carrying out internal control of the veterinary and sanitary condition of the facility and the microclimate of livestock premises, using digital equipment PC-12ID-6 Know the standard indicators of microclimate parameters in livestock premises.

47. Systems and methods for keeping cattle.
48. Hygiene of keeping dry cows.
49. Hygiene of keeping dairy cows.
50. Hygiene of keeping stud bulls.
55. Hygiene of keeping replacement young stock for dairy herds.
56. Hygiene of keeping newborn calves and after the preventive period.
57. Hygiene of keeping young cattle for fattening.
58. Hygiene in raising foals.
59. Hygiene of working horses.
60. Systems and methods of keeping pigs.
61. Hygiene during the reproduction of pigs (boars, single, inseminated and in seminated sows.)
62. Farrowing hygiene and rearing of suckling piglets.
63. Hygiene of keeping weaned piglets.
64. Hygiene of keeping replacement pigs
65. Hygiene for fattening pigs.
66. Hygiene of keeping goats and sheep.
67. Systems and methods of keeping poultry.
68. Hygiene of keeping laying hens.
69. Hygiene in raising broiler chickens.
70. Hygiene for keeping geese and ducks
71. Hygiene for keeping rabbits
72. Hygiene of keeping foxes and arctic foxes
73. Hygiene of keeping sables and minks
74. Hygiene for keeping dogs and cats

Formed competence: Questions for assessing competence: PC-15 Organization of organizational, technical, zootechnical and veterinary activities aimed at the prevention of non-communicable diseases in accordance with the plan for the prevention of non-communicable animal diseases, analysis of the effectiveness of measures for the prevention of animal diseases in order to improve them .

PC-15ID-1 Be able to assess the impact of the conditions of keeping and feeding animals on their health as part of the implementation of action plans for the prevention of animal diseases using digital technologies. PC-15ID-2 Be able to evaluate the effectiveness of preventive measures taken and methods of their implementation, including using digital technologies.

PC-15ID-3 Be able to carry out veterinary quality control and procurement of animal feed in order to ensure their veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases.

PC-15ID-5 Know the types of measures for the prevention of non-communicable animal diseases and metabolic disorders in animals and the requirements for their implementation in accord-

ance with guidelines, instructions, manuals, rules for diagnosis, prevention and treatment of animals

75. Basics of design. Types of projects. Design assignment.
76. Requirements for the site territory for the construction of livestock en terprises. Zoning and landscaping of farm areas. Sanitary protection zones and veterinary gaps.
77. Veterinary-hygienic control and examination of projects during the construction of livestock enterprises.
78. Veterinary and hygienic assessment of parts of buildings: base, foundation, walls, ceiling, roof, doors, windows, floors, etc.
79. Construction materials and products, their veterinary and hygienic characteristics/types of materials and mortars, basic properties of construction materials: physical, mechanical, chemical; toxicity.
80. Ventilation of premises for farm animals /theory of ventilation, classification of ventilation devices, principles of calculating air exchange/.
81. Heat balance of livestock buildings. Heating systems and heating of premises for keeping animals. Principles for calculating the heat balance of a room.
82. Veterinary and hygienic requirements for sewerage and manure removal in animal premises /sewage systems and elements, methods for manure removal and storage/.
83. Sanitary and hygienic characteristics of bedding materials. Ways to use litter.
84. Sanitary and hygienic protection of livestock farms and its components, ensuring the veterinary well-being of farms.
85. Main veterinary and veterinary-sanitary facilities, their purpose and characteristics.
86. Animal care hygiene.
87. Hygiene of summer keeping of animals. Preparation of animals, pastures, camps.
88. Microbial contamination of feed.
89. Hygiene of using feed contaminated with mineral and synthetic poisons.
90. Prevention of poisoning of animals by poisonous plants.
91. Hygienic importance of exercise for animals. Methods and techniques for its organization
92. Hygiene of stocking farms and complexes with animals. Quarantine of animals.
93. Hygiene of milk production on farms and complexes. Primary milk processing on the farm.
94. Disinfection and deodorization of animal premises.
95. Disinsection and deratization in livestock farming.
96. Cleaning up corpses and confiscated animals, methods of their disposal.

4. METHODOLOGICAL MATERIALS DEFINING THE PROCEDURES FOR ASSESSING KNOWLEDGE, SKILLS AND ABILITIES AND WORK EXPERIENCE CHARACTERIZING THE STAGES OF COMPETENCE FORMATION

4.1. Criteria for evaluating students' knowledge during the knowledge survey (written survey)

Mark "**excellent**" - the student clearly expresses his point of view on the issues under consideration, giving appropriate examples.

Mark "**good**" - the student admits some errors in the answer

The mark «**satisfactory**" - the student discovers gaps in knowledge of the basic educational and normative material.

The mark "**unsatisfactory**" - the student discovers significant gaps in knowledge of the basic provisions of the discipline, the inability to obtain the correct solution to a specific practical problem with the help of a teacher.

4.2. Criteria for evaluating students' knowledge during testing

The test result is evaluated on a percentage rating scale. Each student is offered a set of test tasks of 25 questions:

The mark "**excellent**" is 25-22 correct answers.

The mark "**good**" is 21-18 correct answers.

The mark "**satisfactory**" is 17-13 correct answers.

The mark "**unsatisfactory**" is less than 13 correct answers

4.3. Criteria for assessing students' knowledge during coursework

The mark "**excellent**" - the problem is identified and its relevance is justified; an analysis of various points of view on the problem under consideration is made and one's own position is logically stated; conclusions are formulated, the topic is fully disclosed, the volume is maintained; the requirements for external design are met, the basic requirements for the report are fulfilled.

The mark "**good**" - mistakes have been made. In particular, there are inaccuracies in the presentation of the material; there is no logical consistency in judgments; the volume of the report is not maintained; there are omissions in the design, there are significant deviations from the requirements for the presentation of materials.

The mark "**satisfactory**" - the topic is only partially covered; factual errors were made in the content of the report; there are no conclusions, the topic of the report is not disclosed.

The mark "**unsatisfactory**" - there is a significant misunderstanding of the problem or the report is not submitted.

4.4. Criteria of knowledge during the test

The mark "**accepted** " must correspond to the parameters of any of the positive ratings ("excellent", "good", "satisfactory").

The mark "**not accepted** " rating should correspond to the parameters of the "unsatisfactory" rating.

The mark "excellent" – all types of educational work provided for in the curriculum have been completed. The student demonstrates the compliance of knowledge, skills, and abilities with the indicators given in the tables, operates with acquired knowledge, skills, and applies them in situations of increased complexity. At the same time, inaccuracies, difficulties in analytical operations, transfer of knowledge and skills to new, non-standard situations may be allowed.

The mark "good" – all types of educational work provided for in the curriculum have been completed. The student demonstrates the compliance of knowledge, skills, and abilities with the indicators given in the tables, operates with acquired knowledge, skills, and applies them in standard situations. At the same time, minor errors, inaccuracies, difficulties in analytical operations, transfer of knowledge and skills to new, non-standard situations may be made.

Mark "satisfactory" – one or more types of educational work provided for in the curriculum have not been completed. The student demonstrates incomplete compliance of knowledge, skills, and abilities with the indicators given in the tables, significant errors are made, a partial lack of knowledge, skills, and skills is manifested in a number of indicators, the student experi-

ences significant difficulties in operating with knowledge and skills when transferring them to new situations. –

The mark «unsatisfactory" – the types of educational work provided for in the curriculum have not been completed. demonstrates incomplete compliance of knowledge, skills, and abilities given in the tables of indicators, significant errors are made, a lack of knowledge, skills, and skills is manifested for a large number of indicators, the student experiences significant difficulties in operating knowledge and skills when transferring them to new situations

4.5. Criteria of knowledge during the examination

The mark "excellent" – all types of educational work provided for in the curriculum have been completed. The student demonstrates the compliance of knowledge, skills, and abilities with the indicators given in the tables, operates with acquired knowledge, skills, and applies them in various situations of increased complexity. At the same time, inaccuracies, difficulties in analytical operations, transfer of knowledge and skills to new, non-standard situations may be allowed. –

The mark "good" – all types of educational work provided for in the curriculum have been completed. The student demonstrates the compliance of knowledge, skills, and abilities with the indicators given in the tables, operates with acquired knowledge, skills, and applies them in standard situations. At the same time, minor errors, inaccuracies, difficulties in analytical operations, transfer of knowledge and skills to new, non-standard situations can be made.

Mark "satisfactory" – one or more types of educational work provided for in the curriculum have not been completed. The student demonstrates incomplete compliance of knowledge, skills, and abilities with the indicators given in the tables, significant errors are made, a partial lack of knowledge, skills, and skills are manifested in a number of indicators, the student experiences significant difficulties in operating with knowledge and skills when transferring them to new situations.

The mark "unsatisfactory" – the types of educational work provided for in the curriculum have not been completed. demonstrate incomplete compliance of knowledge, skills, and abilities given in the tables of indicators, significant errors are made, a lack of knowledge, skills, and skills are manifested for a large number of indicators, the student experiences significant difficulties in operating with knowledge and skills when transferring them to new situations.

5. ACCESSIBILITY AND QUALITY OF EDUCATION FOR DISABLED PEOPLE

If necessary, persons with disabilities and persons with disabilities are given additional, time to prepare an answer for the test.
When conducting the procedure for evaluating the learning outcomes of disabled people and persons with disabilities, their own technical means can be used.

The procedure for evaluating the learning outcomes of disabled people and persons with disabilities in the discipline provides for the provision of information in forms adapted to the limitations of their health and perception of information:

For people with visual impairments:	– in printed form in enlarged font; – in the form of an electronic document.
For people with hearing impairments:	– in printed form; – in the form of an electronic document.

For people with disorders of the musculoskeletal system:	– in printed form, the device; – in the form of an electronic document.

When conducting the procedure for evaluating the learning outcomes of disabled people and persons with disabilities in the discipline, it ensures that the following additional requirements are met, depending on the individual characteristics of the students:

a) instructions on the procedure for conducting the assessment procedure are provided in an accessible form (orally, in writing);

b) an accessible form of assignment of assessment tools (in printed form, in printed form in enlarged font, in the form of an electronic document, assignments are read out by the teacher);

c) an accessible form of providing answers to tasks (written on paper, a set of answers on a computer, orally).

If necessary, for students with disabilities and the disabled, the procedure for evaluating the results of training in the discipline can be carried out in several stages.

The procedure for evaluating the learning outcomes of disabled people and persons with disabilities is allowed using distant learning technologies.