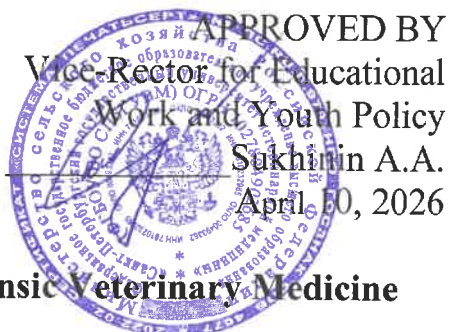


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Ministry of Agriculture of the Russian Federation
Federal State Budgetary Educational Institution
of Higher Education
"St. Petersburg State University of Veterinary Medicine"



APPROVED BY

Vice-Rector for Educational
Work and Youth Policy
Sukhinin A.A.
April 30, 2026

Department of Pathological Anatomy and Forensic Veterinary Medicine

EDUCATIONAL WORK PROGRAM

for the discipline

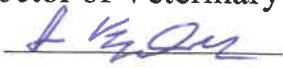
"PATHOHISTOLOGICAL ANATOMY"

**The level of higher education
SPECIALIST COURSE**

**Specialty 36.05.01 Veterinary Medicine
Profile: «General clinical veterinary medicine»**

**Full-time education
Education starts in 2026**

Reviewed and adopted
at the meeting of the department
on April 3, 2026.
Protocol No. 7

Head of the Department of Pathological Anatomy
and Forensic Veterinary Medicine,
Doctor of Veterinary Science, Professor
 Kudryashov A.A.

Saint Petersburg
2026

Abstract
of the work program of the discipline B1.O.23 "Pathological anatomy of animals" for
training in the specialty 05.36.01 Veterinary Medicine

The purpose of mastering the discipline is to form the worldview of a veterinarian, his ability to think logically, to establish the sequence of occurrence and development of structural changes in a sick body. The place of discipline in the curriculum: Pathological anatomy of animals, B1.O.23 is a compulsory discipline, mastered in 6, 7 semesters of full-time education. It is a part of the federal state educational standard of higher education in the specialty 05.36.01 "Veterinary Medicine" (specialty level), formed by the participants of educational relations.

Objectives of the discipline:

- a) General educational task: to recognize the etiology and pathogenesis of pathological conditions and diseases.
- b) Applied task: to compare pathoanatomical changes with clinical signs; to establish the causes and mechanisms of death.
- c) Special task: to teach knowledge of environmentally safe technology for the disposal of corpses and the economic use of secondary raw materials.

As a result of mastering the discipline, the student prepares for the following types of activities, in accordance with the educational standard of the Federal State Educational Standard on 05/36.01 "Veterinary Medicine": medical; expert control; scientific and educational.

The field of professional activity: 13 Agriculture.

The competencies of the student formed as a result of mastering the discipline

a) General professional competencies (GPC):

GPC-5 is able to draw up special documentation, analyze the results of professional activity and submit accounting documents using specialized databases

GPC-5id-1 Should be able to apply new information technologies to solve tasks in their professional activities, work with specialized information databases.

GPC-5id-2 Have the skills to work with the operating system, with text and table processors, with database management systems, with information search engines on the Internet.

GPC-5id-3 To know new information technologies for solving tasks in their professional activities, to work with specialized information databases.

GPC-6 is able to analyze, identify and assess the danger of the risk of the occurrence and spread of diseases

GPC-6id-1 Should know the existing programs for the prevention and control of zoonoses, contagious diseases, emergent or newly emerging infections, the use of animal identification systems, tracing and control by the relevant veterinary services.

GPC-6id-2 should be able to carry out, inter alia, with the help of digital technologies, an assessment of the risk of animal diseases, including the import of animals and animal products and other measures of veterinary services, to control prohibited substances in the body of animals, animal products and feed.

GPC-6id-3 Have the skills to carry out identification procedures, select and implement measures that can be used to reduce the level of risk.

b) Professional competencies (PC):

PC-4 Performing postmortem diagnostic examination of animals in order to establish pathological processes, diseases, causes of death.

PC-4id-1 Should be able to collect the anamnesis of the life and illness of the examined animals after death.

PC-4id-2 Should be able to perform a general examination of animal corpses before autopsy.

PC-4id-3 Be able to perform autopsy of animal corpses using special tools and compliance with safety requirements

PC-4id-4 Should be able to carry out the selection and fixation of samples of pathological material for laboratory research using digital technologies

PC-4id-5 Should be able to establish the cause of death and a pathoanatomical diagnosis in accordance with generally accepted criteria and classifications, lists of animal diseases

PC-4id-6 Should be able to formalize the results of a postmortem diagnostic examination of an animal in the autopsy protocol, including using digital technologies

PC-4id-7 Know the veterinary and sanitary requirements for the process of opening animals in accordance with the legislation of the Russian Federation in the field of veterinary medicine

PC-4id-8 Know the rules of working with special tools when opening animal corpses

PC-4id-9 To know the methods and techniques of autopsy of animal corpses of various species

PC-4id-10 To know the methodology of sampling and fixation of samples of pathological material for laboratory research in accordance with the rules in this field

PC-4id-11 To know the forms and procedure for drawing up an autopsy protocol for an animal, including using digital technologies.

The total labor intensity of the discipline is 252 hours, 7 credits. **The final control** of the discipline is an object, an exam.

1. GOALS AND OBJECTIVES OF THE DISCIPLINE

The goal is to form the worldview of a veterinarian, his ability to think logically, to establish the sequence of occurrence and development of structural changes in a sick organism.

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

a) General educational task: to recognize the etiology and pathogenesis of pathological conditions and diseases.

b) The applied task is to compare pathoanatomic changes with clinical signs; to establish the causes and mechanisms of death.

c) A special task is to teach knowledge of environmentally safe technologies for the disposal of corpses and the economic use of recycled materials.

2. THE LIST OF PLANNED LEARNING OUTCOMES IN THE DISCIPLINE (MODULE), CORRELATED WITH THE PLANNED RESULTS OF MASTERING THE 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 the Federal State Educational Standard for Higher Professional Education 36.05.01 "Veterinary Medicine".

Area of professional activity: 13 Agriculture

Types of tasks of professional activity: Medical Expert control

The student's competencies formed as a result of mastering the discipline

The study of the discipline should form the following competencies:

competencies (PC)

a) General professional competencies (GPC):

PC-4 Performing postmortem diagnostic examination of animals in order to establish pathological processes, diseases, causes of death

PC-4ID-1 Should be able to collect anamnesis of the life and illness of the examined animals after death

PC-4ID-2 Should be able to perform a general examination of animal corpses before autopsy

PC-4ID-3 Should be able to perform autopsy of animal corpses using special tools and observing safety requirements

PC-4ID-4 Should be able to take and record samples of pathological material for laboratory research using digital technologies

PC-4ID-5 Should be able to establish the cause of death and a pathoanatomical diagnosis in accordance with generally accepted criteria and classifications, lists of animal diseases

PC-4ID-6 Should be able to record the results of a postmortem diagnostic examination of an animal in the autopsy report, including using digital technologies

PC-4ID-7 Should know the veterinary and sanitary requirements for the animal autopsy process in accordance with the legislation of the Russian Federation in the field of veterinary medicine

PC-4ID-8 Know the rules of working with special tools when dissecting animal corpses

PC-4ID-9 To know the methods and techniques of autopsy of corpses of animals of various species

PC-4ID-10 Should know the methodology of sampling and fixing samples of pathological material for laboratory tests in accordance with the rules in this field.

PC-4ID-11 Should know the forms and procedure for drawing up the autopsy report of an animal, including using digital technologies

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

Discipline B1.O.23 Pathological anatomy of animals is a discipline of Block 1 of the mandatory part of the federal state educational standard of higher education in specialty 05/36.01 "Veterinary Medicine" (specialty level).

It is mastered in the 6th and 7th semesters of study – full-time education; 7th and 8th semesters – full-time and part-time education; 4th and 5th year – part-time education.

Pathological anatomy, as an integrating science, has a structural and logical connection with all natural science, biology, general professional clinical disciplines and veterinary practice. The pathological anatomy of animals is one of the fundamental disciplines in the training of a veterinarian.

The study of pathological anatomy is based on knowledge of anatomy, biology, histology and embryology, biochemistry, physiology. The discipline "Pathological anatomy of animals" is integrated with such disciplines as:

1. Clinical diagnosis.
2. Internal non-infectious diseases.
3. Veterinary and sanitary examination.
4. Obstetrics and gynecology.
5. Epizootology
6. Parasitology.

4.THE SCOPE OF THE DISCIPLINE AND TYPES OF EDUCATIONAL WORK
“Pathohystology Dyagnostics”

Вид учебной работы	Hours, total	semester
		6
Classroom classes (total)	34	34
Classroom classes (total)	34	34
Practical training	4	4
Self-study (TOTAL)	38	38
Type of intermediate and final certification (credit, exam)		credit
Total labor intensity hours/credits	72/2	72/2

5. THE CONTENT OF THE DISCIPLINE “PATHOLOGY DIAGNOSTICS”

№	NAME	Achieved COMPETENCES	SEMESTER	Types of academic work, including students' independent work and labor intensity (in hours)		
				L	PL	Practical training
1.	Collection, fixation, transfer, and disposal of the pathologic material for histological examination. Technique of preparation and coloring of sections for histological examination.	PK-4 ID-1 PK-4 ID-2 PK-4 ID-3 PK-4 ID-4 PK-4 ID-5	6	-	4	2
2.	Histological diagnosis of necrosis, protein, fatty and mineral dystrophies, atrophy, hypertrophy, hyperplasia, alternative, exudative, proliferative inflammations, tumors and leukemias.	PK-4 ID-6 PK-4 ID-10 PK-4 ID-11	6	-	16	20
3.	Histological diagnostics of diseases of the digestive, respiratory, nervous, genitourinary, and cardiovascular systems.	PK-4 ID-6 PK-4 ID-10 PK-4 ID-11	6	-	10	16
TOTAL				-	30	38

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

Correct organization and planned self – work stimulate research and creative activity of students. Self-work should be understood not only as the ability to make independent conclusions and to apply the knowledge, gained in practice, but also as the ability to organize their activities without outside help.

Self-work over the discipline "Veterinary and sanitary expertise" allow to develop skills on the principles of veterinary and sanitary control of the rational use of animal and plant products (controlled by gosvetnadzor), as well as raw materials (for industrial processing of farm and natural fishing resources); environmental protection technologies and equipments; fundamentals of technologies, technical regulation and standardization, professional responsibility; international cooperation in the field of veterinary and sanitary expertise, food safety and protection of the territory of the Russian Federation from the introduction of infectious zoonanthroponous and animal diseases; environmental protection; human consciousness and society for the development of the agro-industrial complex of the Russian Federation.

Students self-work illustrates the development of the following qualification requirements:

- the ability to identify problems and interests in the field of quality control and food safety;
- the ability to set an adequate goal, determine the sequence of tasks;
- the ability to find optimal solutions, effective means and methods to achieve the goal;
- the ability to find the necessary information using modern technologies, classify and systematize it;
- the ability to conduct scientific research in the field of food expertise;
- the ability to present the results of their activities, both in written and oral form for the procedure of public presentation, as well as lectures;
- the ability to master the skills of effective business cooperation.

Students self-work over the discipline "Veterinary and sanitary expertise" is the main way of mastering educational material. It is carried out in order to:

- develop and assimilate the educational material of the discipline;
- consolidate and ameliorate knowledge, skills and abilities;
- prepare for upcoming classes and control tasks;
- form the culture of intellectual work, independency and initiative in research and education.

Students self-work includes the development of theoretical material and preparation for practical classes in the basics of technical regulation and standardization of livestock products, TR and GSS of the Russian Federation, the HACCP system, food safety requirements: meat and meat products, milk and dairy products, fish and fish products, raw materials and technological processes of children's and specialized nutrition and others. food security issues.

The forms of student's self-work over the discipline "Veterinary and sanitary expertise" are:

- acquaintance with the work program;
- making notes and processing lecture material;
- preparation for group classes, including:
 - a) selection of necessary sources of information (literature, online publications, regulatory framework);
 - b) taking notes of educational, methodological and scientific literature;
 - c) processing and analysis of laws and regulations;
 - d) self-control of the processed questions and topics of the curriculum;

In addition, students self-work in a free form is realized through the preparation of reports and articles for student scientific conferences on the problems of veterinary and sanitary expertise,

food security, rational development of the agro-industrial complex of the Russian Federation and the use of natural resources, innovative technologies and technical regulation in the field of veterinary and sanitary expertise, processing of meat, poultry, dairy, etc. raw materials, eggs, honey and bee products, vegetable raw materials, raw materials for food ghee of animal origin, the use of biotechnology.

During the practical classes, the discussion of the topic is conducted in a free creative form. Students discuss with the teacher not only the questions formulated in the educational and methodological complex, but also ask questions that they have during preparation for the seminar, and state their own position on a particular problematic issue in a reasoned manner.

Preparing for the lesson involves the study of theoretical lecture material and regulatory documents. When solving problems, it is recommended to analyze the conditions, formulate a solution clearly and competently, giving references to the relevant legal norms. In order to assimilate the material and better prepare for future professional activity, it is necessary to strive to change the conditions of the task in order to choose the best solution to a specific life situation. The type of tasks for students' self-work is determined by the teacher through the work program and assessment funds.

Educational and methodological materials for self-work of disabled students are provided in forms adapted to the limitations of their health and perception of information and can be specified depending on the contingent of students.

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

7.1. Basic literature

Balabanova, V.I. Sectional course and forensic veterinary medicine: textbook / V.I. Balabanova, A.A. Kudryashov; Ministry of Agriculture of the Russian Federation, St. Petersburg State University of Medical Sciences. - St. Petersburg: St. Petersburg State University of Medical Sciences Publishing House, 2022. - 101 p. - URL: <https://search.spbguv.m.informsistema.ru/viewer.jsp?aWQ9OTkwJnBzPTEwNA==> (date of access: 24.06.2025). - Access mode: for authorized users of the St. Petersburg State University of Medical Sciences Electronic Library.

7.2. Additional literature

Forensic Veterinary Expertise: A Textbook / compiled by: A. A. Kudryashov, V. I. Balabanova, D. E. Levterov; SPbGAVM. - Saint Petersburg: SPbGAVM, 2015. - 51 p. — Access mode: Forensic Veterinary Expertise Kudryashov, Balabanova, Levterov (date of access 24.06.2025). - Access mode: for authorized users of the SPbGAVM Electronic Library

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

To prepare for practical classes, tests and exams, and to perform independent work, students can use the following online resources:

1. http://www.kgau.ru/distance/vet_03/patanatomia/01_07_lab.html pathanatomy of animals.
2. http://www.kgau.ru/distance/vet_03/patanatomia/01_03_01.html pathanatomy of animals
3. www.mgavm.ru - information site of MGAVMiB.
4. Meduniver.com – medical information site.

Electronic library systems:

1. Electronic resources of SPbGAVM - <http://ebs.spbguv.m.ru/MarcWeb2/Default.asp>
2. Doe (access mode: <http://www.spbguv.m.ru/ebs-izdatelstva-lan.html> , free entry from any registered university computer).
3. www.ScientificElectroniclibrary.eLIBRARY.RU

Electronic library systems

1. ELS "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. Database of international scientific citation indexes Web of Science
8. Scopus database of International Science Citation Indexes
9. Full-text interdisciplinary database on agricultural and environmental sciences ProQuest AGRICULTURAL AND ENVIRONMENTAL SCIENCE DATABASE
10. Electronic books of the publishing house "Prospekt Nauki" <http://prospektnauki.ru/ebooks/>
11. Collection "Agriculture. Veterinary medicine" publishing house "Quadro" ELS "Elibris" publishing house "Quadro"

9. METHODOLOGICAL GUIDELINES FOR STUDENTS ON EDUCATION OF THE DISCIPLINE

Methodological recommendations for students are a set of recommendations and explanations that allow them to 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 mastery 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 transcend 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 taking 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 code, 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 activity are 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 is a control that 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 SOCIAL 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://spbguv.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/KJI

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
Sectional course and forensic veterinary medicine	218 (196084, St. Petersburg, Chernihov street, 5) Classroom for conducting seminar-type classes, group and individual consultations, ongoing monitoring and intermediate certification	Specialized furniture: tables, chairs, stools, blackboard. Visual aids and educational materials: posters on sections of pathological anatomy.
	219 (196084, St. Petersburg, Chernihov street, 5) Classroom for conducting seminar-type classes, group and individual consultations, ongoing monitoring and intermediate certification	Specialized furniture: chairs, stools, blackboard, multimedia projector, screen Visual aids and educational materials: posters on sections of pathological anatomy.
	220 (196084, St. Petersburg, Chernihov street, 5) Museum of the department, room for intermediate certification	Specialized furniture: tables, chairs. Visual aids and educational materials: museum preparations, drawings and posters on sections of pathological anatomy.
	196084, St. Petersburg, Chernihov street, 5 Practical laboratory for autopsy of animal corpses	Sectional table, tools, 2 refrigerators
	206 Large reading room (196084, St. Petersburg, Chernihov street, 5) Room for independent work	Specialized furniture: tables, chairs Technical means of education: computers connected to the Internet and access to an electronic information and educational environment.
	324 Department of Information Technology (196084, St. Petersburg, Chernihov street, 5) Room for storage and preventive maintenance of educational equipment	Specialized furniture: tables, chairs, special equipment, materials and spare parts for preventive maintenance of technical training facilities.

Developer:
Head of the Department of Pathological Anatomy
and Forensic Veterinary Medicine,
Doctor of Veterinary Science, Professor

Kudryashov A.A.

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Комаров// Ветеринарная лабораторная практика: сборник статей и докладов на международной научно-практической конференции, Санкт-Петербург, 11–12 февраля 2026 года. – Санкт-Петербург: Санкт-Петербургский государственный университет ветеринарной медицины, ВБМ, 2026. – С. **- **.- ЕДН *****.

2. Комаров, М.В. II-8 как прогностический биомаркер инфекционного mastitis стафилококковой этиологии у дойных коров /М.В. Комаров// Материалы 80-й международной конференции молодых ученых и студентов СПбГУВМ: сборник статей и докладов международной научно-практической конференции, Санкт-Петербург, 13-20 апреля 2026 года. – Санкт-Петербург: Санкт-Петербургский государственный университет ветеринарной медицины, 2026. – С. **.- **.- ЕДН *****.

Методические рекомендации

1. Методические рекомендации по определению концентрации циткинов лактирующих коров с инфекционным маститом на основе применения твердофазного иммуноферментного анализа/ Комаров М.В., Макавичик С.А// СПб.: изд-во ФГБОУ ВО СПбГУВМ, 2026. – ** с.

Соответствие диссертации требованиям, установленным в соответствии с Федеральным законом «О науке и государственной научно-технической политике»

По актуальности поставленных задач, методологическому и научному уровню исследований, их новизне и практической значимости диссертационная работа «Циткиновый профиль у лактирующих коров при инфекционных маститах стафилококковой этиологии» Комарова Михаила Витальевича является законченной научной квалификационной работой, которая отвечает требованиям п. 9 «Положения о присуждении ученых степеней», утвержденным Постановлением Правительства Российской Федерации от 24.09.2013 № 842, предъявляемым к диссертациям на соискание ученой степени кандидата ветеринарных наук. В ходе выполнения работы поставленная цель – изучить циткиновый профиль у лактирующих коров при инфекционных маститах стафилококковой этиологии для усовершенствования лабораторных методов диагностики, полностью достигнута, а все задачи выполнены.

Научная специальность и отрасль науки, которым соответствует диссертация

Диссертационная работа полностью соответствует заявленной теме и специальности 4.2.3. - Инфекционные болезни и иммунология животных (ветеринарные науки).

РЕШЕНИЕ АТТЕСТАЦИОННОЙ КОМИССИИ:

Признать, что обучающийся Комаров Михаил Витальевич

итоговую аттестацию по программе аспирантуры.

(прошел / не прошел)

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

Department of Pathological Anatomy and Forensic Veterinary Medicine
FUND OF ASSESMENT TOOLS
for the discipline
"PATHOLOGY DIAGNOSTICS"

Level of higher education
SPECIALIST COURSE

Specialty 05.36.01 Veterinary medicine
Profile: «General clinical veterinary medicine»
Full-time education.

Education starts in 2026

Saint Petersburg
2026

1. PASSPORT OF THE APPRAISAL FUND

The student's competencies formed as a result of mastering the discipline.

The study of the discipline should form the following **competencies**:

Professional Competencies (PC):

PC-4 Performing postmortem diagnostic examination of animals in order to establish pathological processes, diseases, causes of death

PC-4ID-1 Should be able to collect the anamnesis of the life and illness of the examined animals after death

PC-4ID-2 Should be able to perform a general examination of animal corpses before autopsy

PC-4ID-3 Be able to perform autopsy of animal corpses using special tools and compliance with safety requirements

PC-4ID-4 Should be able to carry out the selection and fixation of samples of pathological material for laboratory research using digital technologies

PC-4ID-5 Should be able to establish the cause of death and a pathoanatomical diagnosis in accordance with generally accepted criteria and classifications, lists of animal diseases

PC-4ID-6 Should be able to formalize the results of a postmortem diagnostic examination of an animal in the autopsy protocol, including using digital technologies

PC-4ID-7 Know the veterinary and sanitary requirements for the process of opening animals in accordance with the legislation of the Russian Federation in the field of veterinary medicine

PC-4ID-8 Know the rules of working with special tools when opening animal corpses

PC-4ID-9 To know the methods and techniques of autopsy of animal corpses of various species

PC-4ID-10 To know the methodology of sampling and fixation of samples of pathological material for laboratory research in accordance with the rules in this field

PC-4ID-11 To know the forms and procedure for drawing up an autopsy protocol for an animal, including using digital technologies.

Table 1

Nº	Emerging competencies	Supervised sections (topics) of the discipline	Evaluation tool
1.	PC-4ID-1 PC-4ID-2 PC-4ID-3 PC-4ID-4 PC-4ID-5	Topics: The meaning, purpose and objectives of pathoanatomic diagnostics. Safety precautions during autopsy. Environmental protection. Methods of dissection of animals of different species. Working out the technique of dissection of small animals. Making a pathoanatomical diagnosis based on the results of an autopsy. The wording of the conclusion. Recommendations for completing the course work.	Tests interviewing test
2.	PC-4ID-6 PC-4ID-10 PC-4ID-11	Section 2. Histological diagnosis of atrophy, hypertrophy, hyperplasia, alterative, exudative, proliferative inflammations, tumors and leukemias	interviewing test credit
3.	PC-4ID-6 PC-4ID-10 PC-4ID-11	Section 3. Histological diagnostics of diseases of the digestive, respiratory, nervous, genitourinary, and cardiovascular systems	interviewing test credit

An approximate list of evaluation tools

Table2

Nº	Name of the assessment tool	Brief description of the assessment tool	Presentation of the assessment tool in the fund
1.	Interviewing	A means of monitoring the assimilation of educational material of a topic, section, or sections of a discipline, organized as an educational activity in the form of an interview between a teacher and students. Questions about the topics/sections of the discipline	Questions about the topics/sections of the discipline
2.	Credit	A system of standardized tasks that allows you to automate the procedure for measuring the level of knowledge and skills of a student	Questions for the test

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

Table 3

Planned results of competence development	The level of development			
	unsatisfactory	satisfactory	good	excellent
PC-4 Performing postmortem diagnostic examination of animals in order to establish pathological processes, diseases, causes of death TO KNOW: PC-4 ID-7 To know the veterinary and unitary requirements for the process of opening animals in accordance with the legislation of the Russian Federation in the field of veterinary medicine PC-4 ID-8 Know the rules of working with special tools when opening animal corpses PC-4 ID-9 Know the methods and techniques of autopsy of animal corpses of various species PC-4 ID-10 To know the methodology of sampling and fixation of samples of pathological material for laboratory research in accordance with the rules in this field PC-4 ID-11 To know the forms and procedure for drawing up an autopsy protocol for an animal, including using digital technologies BE ABLE TO: C-4 ID-1 Be able to collect the anamnesis of the life and illness of the examined animals after death C-4 ID-2 Be able to perform a general examination of animal corpses before autopsy C-4 ID-3 Be able to perform autopsy of animal corpses using special tools and compliance with safety requirements C-4 ID-4 Be able to carry out the selection and fixation of samples of pathological material for laboratory research using digital technologies C-4 IAD-5 Should be able to establish the cause of death and a pathoanatomical diagnosis in accordance with generally accepted criteria and classifications, lists of animal diseases C-4 ID-6 Should be able to register the results of a postmortem diagnostic examination of an animal in the autopsy protocol, including using digital	The level of knowledge is below the minimum requirements, gross errors have occurred	The minimum acceptable level of knowledge, many blunders have been made	The level of knowledge in the volume corresponding to the training program, several blunders were made	The level of knowledge in the volume corresponding to the training program, with minor errors
	Basic skills were not demonstrated when solving standard tasks, and gross errors occurred	Basic skills have been demonstrated, typical errors have been solved, all tasks have been completed, but not in full	All the basic skills have been demonstrated, all the main tasks with minor errors have been solved, all tasks have been completed in full, but some with flaws	All basic skills have been demonstrated, all basic tasks with minor flaws, and all tasks have been completed in full

chnologies

A LIST OF CONTROL TASKS AND OTHER MATERIALS NECESSARY TO ASSESS KNOWLEDGE, SKILLS, AND WORK EXPERIENCE

1.1. Standard tasks for current academic performance monitoring

PC-4 Performing postmortem diagnostic examination of animals in order to establish pathological processes, diseases, and causes of death

PC-4ID-1 Should be able to collect anamnesis of the life and illness of the examined animals after death

PC-4ID-2 Should be able to perform a general examination of animal corpses before autopsy

PC-4ID-3 Should be able to perform autopsy of animal corpses using special tools and observing safety requirements

PC-4ID-4 Should be able to take and record samples of pathological material for laboratory research using digital technologies

PC-4ID-5 Should be able to establish the cause of death and a pathoanatomical diagnosis in accordance with generally accepted criteria and classifications, lists of animal diseases

PC-4ID-6 Should be able to record the results of a postmortem diagnostic examination of an animal in the autopsy report, including using digital technologies

PC-4ID-10 Should know the methodology of sampling and fixation of pathological material for laboratory tests in accordance with the rules in this field.

PC-4ID-11 Should know the forms and procedure for drawing up an autopsy report on an animal, including using digital technologies

The topic of independent work

1. Collection and transfer of pathological materials for histological, bacteriological, histological and chemical studies.

2. Technique of preparation and coloring of sections for histological examination.

Postmortem changes: decomposition of the corpse (autolysis, putrefaction).

3. Necrosis: definition, stages of development, micro-picture, classification; outcomes of necrosis.

4. Dystrophies: definition, etiology, classification (by type of metabolism; by place of formation in the tissue, etc.), mechanisms of development.

5. Cellular dysproteinosis:

a) granular dystrophy: definition, etiology, mechanisms of development, microcarth, clinical significance, outcomes, differential diagnosis;

b) hyaline drip dystrophy: definition, etiology, mechanisms of development, microcarth, clinical significance, outcomes;

c) hydropic dystrophy: definition, etiology, mechanisms of development, microcarth, clinical significance, outcomes;

d) horny dystrophy: definition, etiology, classification, mechanisms of development, microcarth, clinical significance, outcomes.

6. Extracellular dysproteinosis:

a) mucoid swelling: definition, etiology, mechanisms of development, microcarth, the concept of "mucoid", clinical significance, outcomes;

b) fibrinoid swelling: definition, etiology, mechanisms of development, microcarth, concepts of "fibrinoid", "fibrinoid necrosis", clinical significance, outcomes;

c) hyalinosis: definition, etiology, mechanisms of development, focal and systemic hyalinosis, microcarth, clinical significance, outcomes;

d) amyloidosis: definition, etiology, mechanisms of development, classification, micro-picture, clinical significance, outcomes, the concept of "metachromasia".

7. Mixed dysproteinosis: impaired metabolism of chromoproteins.

a) Metabolic disorders of hemoglobinogenic pigments: physiological hemoglobinogenic pigments; pathological hemoglobinogenic pigments; metabolic disorders of hemosiderin (general and local hemosiderosis: causes, mechanism of development, microarth); hematoïdin formation: causes, microarth; formation of hydrochloric acid hematin; metabolic disorders of bilirubin: types of jaundice, their causes, microarth.

b) Metabolic disorders of tyrosine-tryptophanogenic pigments (melanin): types of disorders (classification), mechanism of development, micro-picture.

c) Metabolic disorders of lipidogenic pigments (lipofuscin): causes, mechanism of development, micro-picture.

8. Mixed dysproteinosis: impaired nucleoprotein metabolism (etiology, mechanism of development, visceral and articular gout, uric acid infarction, uric acid stones, encrustation of dead masses).

9. Mixed dysproteinosis: impaired glycoprotein metabolism.

a) impaired mucin metabolism (intracellular dysproteinosis): etiology, classification, mechanisms of development, micro-picture;

b) impaired mucoïd metabolism (extracellular dysproteinosis): etiology, classification, mechanisms of development, micro-picture;

c) violation of collagen metabolism: etiology, classification, mechanisms of development, microcrystalline.

10. Violation of fat metabolism:

a) violation of neutral fat metabolism: etiology, developmental mechanisms, classification, micro-picture;

b) violation of the metabolism of structural fat: etiology, mechanisms of development, microarth, outcome.

11. Morphogenesis of calcium metabolism disorders:

a) disorders of calcification and decalcification of bone: etiology, pathogenesis, classification, micro-picture;

b) calcium deposition in soft tissues: classification, etiology, mechanisms of development, micro-picture.

12. Circulatory disorders:

a) arterial hyperemia: classification, etiology, micro-picture;

b) venous hyperemia: classification, etiology of local and general venous hyperemia, microarth of local and general, acute and chronic venous hyperemia;

c) hemorrhages and hemorrhages: definition, classification, micro-picture, outcomes, clinical significance;

d) thrombosis: definition, classification, micro-picture, outcomes, clinical significance;

e) embolism: definition, classification, micro-picture, outcomes, clinical significance;

f) heart attacks: definition, classification, micro-picture, outcomes, clinical significance.

2. Lymphatic circulation disorders: etiology, classification, microarth, outcomes, clinical significance.

13. Metabolic disorders of tissue fluid: etiology, classification, microarth, outcomes, clinical significance.

14. Compensatory and adaptive mechanisms:

a) atrophy, hypotrophy - definition, classification, etiology, micro-picture;

b) hypertrophy and hyperplasia: definition, classification, etiology, micro-picture;

c) regeneration: definition, classification, micro-picture, features of regeneration of various tissues;

d) metaplasia: definition, classification, etiology, micro-picture, clinical significance.

15. Inflammation: definition, classification, mechanism of development.

Alterative inflammation: definition, etiology, micro-picture.

Exudative inflammation:

- a) serous inflammation: definition, etiology, types, micro-picture;
- b) fibrinous inflammation: definition, etiology, types, micro-picture;
- c) purulent inflammation: definition, etiology, types, micro-picture;
- d) catarrhal inflammation: definition, etiology, types, micro-picture;
- e) hemorrhagic inflammation: definition, etiology, classification, micro-picture;
- f) putrefactive inflammation: definition, etiology, micro-picture.

Proliferative inflammation: definition, classification.

a) interstitial proliferative inflammation: definition, classification, cirrhosis (definition, classification, microcart), diffuse actinomycosis (definition, etiology, microcart), paratuberculous enteritis (definition, etiology, microcart);

b) focal proliferative inflammation: tuberculous granuloma (definition, etiology, micro-picture), systemic granuloma (definition, etiology, micro-picture), actinomycous granuloma (definition, etiology, micro-picture), parasitic granuloma (definition, etiology, micro-picture).

16. Tumors: definition, classification, theories of tumor growth, morphological characteristics of benign tumors, morphological characteristics of malignant tumors, concepts of "metastasis", "recurrence", "tissue atypism", "cellular atypism".

17. Leukemia: definition, classification, micro-picture.

Interviewing.

Is the form of control is used in practical classes on all topics, both written and oral. During the answer, the student learns the ability to logically correctly, argumentatively and clearly build oral and written speech, as well as the ability to generalize and analyze educational information.

3.1.2. To credit

Emerging competencies:

PC-4id-5 Should be able to establish the cause of death and a pathoanatomical diagnosis in accordance with generally accepted criteria and classifications, lists of animal diseases

PC-4id-6 Should be able to formalize the results of a postmortem diagnostic examination of an animal in the autopsy protocol, including using digital technologies

PC-4id-7 Know the veterinary and sanitary requirements for the process of opening animals in accordance with the legislation of the Russian Federation in the field of veterinary medicine

PC-4id-8 Know the rules of working with special tools when opening animal corpses

PC-4id-11 To know the forms and procedure for drawing up an autopsy protocol for an animal, including using digital technologies.

PC-4 Competence Test questions

1. Dilatatio cordis это:

- a. Heart defect.
- b. Heart hypertrophy.
- c. Heart enlargement.

2. Hypertrophy of the heart happens:

- a. Physiological.
- b. Concentric.
- c. Myogenic.
- d. Tonogenic.
- f. Eccentric.
- e. Pathological.

3. The expansion of the heart, accompanied by hypertrophy of the wall, is called

- a. Physiological.

- b. Concentric.
- c. Myogenic.
- d. Tonogenic.
- e. Eccentric.
- f. Pathological.

4. The expansion of the heart, accompanied by hypertrophy of the wall, is called:

- a. Physiological.
- b. Concentric.
- c. Myogenic.
- d. Tonogenic.
- e. Eccentric.
- f. Pathological.

5. Hypertrophy that is not accompanied by expansion of the heart cavities is called:

- a. Physiological.
- b. Concentric.
- c. B. Myogenic.
- d. Tonogenic.
- e. Eccentric.
- f. Pathological.

6. Inflammation of the inner lining of the heart is called:

- a. Endocarditis.
- b. Miocarditis.
- c. Pericarditis.

7. Inflammation of the heart muscle is called:

- a. Endocarditis.
- b. Miocarditis.
- c. Pericarditis.

8. Endocarditis with localization of the pathological process on the valves of the heart is called:

- a. E. chordalis.
- b. E. papillaris.
- c. E. valvularis.
- d. E. parietalis.
- e. E. verrucosa.
- f. E. ulserosa.

9. Thromboendocarditis, characterized by the appearance on the surface of the endocardium of grayish fibrinous overlays in the form of warts, which consist of blood elements - fibrin, platelets and leukocytes, is called:

- a. E. chordalis.
- b. E. papillaris.
- c. E. valvularis.
- d. E. parietalis.
- e. E. verrucosa.
- f. E. ulserosa.

10. A strong toxin or pathogen with high aggressiveness circulating in the blood is likely to cause endocarditis:

- a. E. chordalis.
- b. E. papillaris.
- c. E. valvularis.
- d. E. parientalis.
- e. E. verrucosa.
- f. E. ulserosa.

11. The heart muscle looks dull, mottled, grayish-red in color, flabby in consistency, and somewhat resembles scalded meat when:

- a. Purulent myocarditis.
- b. Alterative myocarditis.
- c. Chronic interstitial myocarditis.

12. In the form of myofibrosis or cardiosclerosis is manifested:

- a. Purulent myocarditis.
- b. Alterative myocarditis.
- c. Chronic interstitial myocarditis.

13. Pericarditis can be (by the nature of the exudate):

- a. Serous.
- b. Catarrhal.
- c. Serous - purulent.
- d. Serous - fibrinous.
- e. Serous - hemorrhagic.

14. Accumulation of cloudy, white - yellow, more or less thick fluid in the cavity of the cardiac chemise is characterized by pericarditis:

- a. Serous
- b. Catarrhal
- c. Serous - purulent
- d. Serous - fibrinous
- e. Serous - hemorrhagic

15. Fibrin coagulation and deposition on the inner surface of the cardiac chemise and epicardium in serous fibrinous pericarditis is referred to as:

- a. "Hairy heart".
- b. Dry pericardium.
- c. "Armored heart".

16. During a prolonged process, fibrin grows through the connective tissue and takes the form of villi, papillae and generally looks like felt. This is the so-called:

- a. "Hairy heart".
- b. Dry pericardium.
- c. "Armored heart".

17. Serous pericarditis is characterized by:

- a. Accumulation of clear, slightly opalescent fluid in the pericardial cavity.
- b. The surface of the heart and the inner surface of the pericardium are shiny.
- c. The surface of the heart and the inner surface of the pericardium are dull.
- d. Pronounced hyperemia of the epicardium, there may be hemorrhages.

18. Dropsy of the cardiac chemise is characterized by:

- a. Accumulation of transparent, slightly opalescent fluid in the pericardial cavity.
- b. The surface of the heart and the inner surface of the pericardium are shiny.
- c. The surface of the heart and the inner surface of the pericardium are dull.
- d. Pronounced hyperemia of the epicardium, there may be hemorrhages.

19. Vascular inflammation is called:

- a. Phlebitis.
- b. Vasculitis.
- c. Arteriitis.
- d. Phleboectasia varix.
- f. Aneurisma.
- e. Arteritis.

20. Local, limited, asymmetrical, sac-like extensions of the arterial vessel wall, in which its normal structure is disrupted and a cavity is formed that communicates with the lumen, called:

- a. Phlebitis.
- b. Vasculitis.
- c. Arteriitis.
- d. Phleboectasia varix.
- f. Aneurisma.
- e. Arthritis.

21. Inflammation of the arteries is called:

- a. Phlebitis.
- b. Vasculitis.
- c. Arteriitis.
- d. Phleboectasia varix.
- f. Aneurisma.
- e. Arthritis.

22. Phleboectasia varix is:

- a. Inflammation of the veins.
- b. Formation of blood clots in the veins.
- c. Local expansion of veins.
- d. Formation of stones in veins.

23. The collapse or airless state of the lungs is called:

- a. Pneumonia.
- b. Atelectasis.
- c. Emphysema.
- d. Pulmonary edema.

24. Pneumonia is called:

- a. Pneumonia.
- b. Atelectasis.
- c. Emphysema.
- d. Pulmonary edema.

25. Atelectasis can be:

- a. Alveolar.
- b. Interstitial.
- c. Compression.

d. Obturation.

26. The lungs are enlarged, not formed, the lung tissue is “shaky”, of a doughy consistency, red in color on the incision, foamy liquid flows from the incision surface, a piece of lung floats heavily in the water. This pattern is typical for:

- a. Pneumonia.
- b. Atelectasis.
- c. Alveolar emphysema.
- d. Pulmonary edema.
- f. Interstitial emphysema.

27. With atelectasis, pieces of lung in water -

- a. Float on the surface.
- b. Swim hard.
- c. Sink.

28. The lung is enlarged, pale pink in color, fluffy in consistency, when pressed, the fossa slowly levels out, a crack is heard during the incision, the incision surface is dry, bloodless. This pattern is typical for:

- a. Pneumonia.
- b. Atelectasis.
- c. Alveolar emphysema.
- d. Pulmonary edema.
- f. Interstitial emphysema.

29. Air from the alveoli enters the interstitial tissue through the tissue crevices, spreads through the interlobular tissue, individual gas bubbles form whole continuous strands penetrating the lung in the form of a grid. This pattern is typical for:

- a. Pneumonia.
- b. Atelectasis.
- c. Alveolar emphysema.
- d. Pulmonary edema.
- f. Interstitial emphysema.

30. Inflammation involving the terminal bronchioles and groups of adjacent alveoli is called:

- a. Focal pneumonia.
- b. Lobar pneumonia.
- c. Acinous pneumonia.
- d. Lobular pneumonia.

31. Inflammation involving the whole lobe of the lung is called:

- a. Focal pneumonia.
- b. Lobar pneumonia.
- c. Acinous pneumonia.
- d. Lobular pneumonia.

32. Bronchopneumonia is so called because:

- a. The pathological process begins with the bronchi and passes to the lung tissue along the respiratory tract.
- b. The pathological factor penetrates the respiratory system hematogenously and the pathological process simultaneously develops in the lungs and bronchi.

- c. The pathological process begins in the lungs and passes to the bronchi along the ascending pathways.
33. The lung is compressed, red in color, the pleura is smooth, edematous, vitreous, a slightly cloudy liquid flows from the incision surface of the damaged area. Under the microscope, the alveoli are filled with fluid (stained pink by eosin) with single cells (leukocytes and exfoliated respiratory epithelium), the interalveolar septa and the interlobular connective tissue are soaked with edematous fluid. This is a picture of:
- Serous pneumonia.
 - Catarrhal bronchopneumonia.
 - Fibrinous pneumonia.
 - Purulent pneumonia.
 - Productive pneumonia.
 - Necrotic pneumonia.
 - Pulmonary edema.
34. Acute catarrhal bronchopneumonia is characterized by:
- The lung tissue is thickened, testicular.
 - The lung tissue is dense and fleshy.
 - Viscous grayish or white mucus is squeezed out from the incision surface and from the bronchi
 - Slightly cloudy liquid flows down from the incision surface.
 - Thick purulent mucous mass is squeezed out from the incision surface and from the bronchi.
 - The affected area sinks in water.
 - The affected area floats heavily.
35. Often the initial stage of other forms of pneumonia is:
- Serous pneumonia.
 - Catarrhal bronchopneumonia.
 - Fibrinous pneumonia.
 - Purulent pneumonia.
 - Productive pneumonia.
 - Necrotic pneumonia.
 - Pulmonary edema.
36. The content of a large number of red blood cells in the exudate is characterized by:
- Serous pneumonia.
 - Catarrhal bronchopneumonia.
 - Hemorrhagic pneumonia.
 - Purulent pneumonia.
 - Productive pneumonia.
 - Necrotic pneumonia.
 - Pulmonary edema.
37. The formation of various sizes of abscesses or catarrhal-purulent diffuse inflammation is expressed by:
- Serous pneumonia.
 - Catarrhal bronchopneumonia.
 - Fibrinous pneumonia.
 - Purulent pneumonia.
 - Productive pneumonia.
 - Necrotic pneumonia.

g. Pulmonary edema.

38. Croup pneumonia has the following stages:

- a. Stage of hyperemia.
- b. Stage of gray hepatitis.
- c. Stage of hypostasis.
- d. Stage of yellow hepatitis.
- e. Stage of red hepatitis.
- f. Stage of resolution.

39. Croup pneumonia begins with a sharp expansion of blood vessels. These are

- a. The stage of hyperemia.
- b. The stage of gray hepatitis.
- c. The stage of hypostasis.
- d. The stage of yellow hepatitis.
- e. The stage of red hepatitis.
- f. The stage of resolution.

40. The stage of red hepatitis is characterized by:

- a. The affected area is compacted.
- b. A cloudy reddish liquid flows from the incision surface of the affected area.
- c. The affected area is red.
- d. The affected area is gray.
- e. The lung becomes liver-like in consistency.
- f. The lung has a doughy consistency.

41. In cattle, the lung with fibrinous pneumonia has a pattern of:

- a. Concentric stripes.
- b. "Sebacous" lung ("sebacous pneumonia").
- c. "Marble" lung.
- d. Nutmeg lung.

42. In dogs, the lungs with croup pneumonia have the form of:

- a. Concentric stripes.
- b. "Sebacous" lung ("sebacous pneumonia").
- c. The "marble" lung.
- d. Nutmeg lung.

43. Possible outcomes of fibrinous pneumonia:

- a. Induration of the affected area.
- b. Mummification of the lung.
- c. Cornification of the affected area.
- d. Formation of sequesters.
- e. Formation of abscesses.
- f. Formation of aneurysms.
- g. Development of pleurisy.
- h. Development of gangrene.

44. Metastatic pneumonia develops due to:

- a. The penetration of the pathogen from the overlying respiratory tract during their inflammation.
- b. The introduction of the pathogen by blood or lymph from other organs.
- c. The transfer of inflammation to the lungs from the affected surrounding tissues.

45. Serous pleurisy is characterized (select the appropriate one) by:

- a. Accumulation of cloudy fluid in the thoracic cavity.
- b. Accumulation of clear fluid in the thoracic cavity.
- c. Accumulation of fluid with white flakes in the thoracic cavity.
- d. The pleura is dull.
- e. The pleura is shiny.
- f. The pleura is reddened, there are spot hemorrhages.
- g. There is no hyperemia on the pleura.

46. Thoracic dropsy is characterized by:

- a. Accumulation of cloudy fluid in the thoracic cavity.
- b. Accumulation of clear fluid in the thoracic cavity.
- c. Accumulation of fluid with white flakes in the thoracic cavity.
- d. The pleura is dull.
- e. The pleura is shiny.
- f. The pleura is reddened, there are spot hemorrhages.
- g. There is no hyperemia on the pleura.

47. The thoracic cavity contains cloudy exudate with white films and flakes, These films and layers cover both the costal and pulmonal pleura. In acute cases, the layers covering the pleura are easily separated, exposing the red-colored rough pleura. In chronic cases, they grow through connective tissue, and it is not possible to separate them from the pleura. This pattern is typical for:

- a. Serous pleurisy.
- b. Fibrinous pleurisy.
- c. Hemorrhagic pleurisy.
- d. Purulent pleurisy.
- e. Ichorous pleurisy.
- f. Productive pleurisy.

48. The pleura is thickened, white, uneven. Often, the pulmonary pleura merges with the costal pleura. There is usually no liquid exudate in the pleural cavity. Changes in the pleura can be both diffuse and focal. This pattern is typical for:

- a. Serous pleurisy.
- b. Fibrinous pleurisy.
- c. Hemorrhagic pleurisy.
- d. Purulent pleurisy.
- e. Ichorous pleurisy.
- f. Productive pleurisy.

49. The chest cavity contains thick to creamy, yellowish, greenish or white exudate. The pleura is dull, with congested vessels, and covered with exudate. When examining the pleura, it is possible to detect either a penetrating injury to the thoracic cavity or an abscess in the lung that opens into the thoracic cavity. This pattern is typical for:

- a. Serous pleurisy.
- b. Fibrinous pleurisy.
- c. Hemorrhagic pleurisy.
- d. Purulent pleurisy.
- e. Ichorous pleurisy.
- f. Productive pleurisy.

50. In postmortem scar swelling, unlike intravital tympania, there is no:

- a. Redistribution of blood.
- b. The content of large amounts of gases and semi-liquid, fermenting, foamed fodder masses in the rumen.
- c. Anemia of the abdominal organs.
- d. Pulmonary edema.

51. Upon autopsy of the corpse of an animal that has died from acute scarring, note (select appropriate):

- a. Visible cyanotic mucosa.
- b. Visible icteric mucosa.
- c. Stagnation of blood in peripheral vessels.
- d. Anemia of the abdominal cavity.
- e. Pulmonary edema.
- f. Pulmonary emphysema.
- g. There may be adhesions between the walls of the scar and the diaphragm.
- h. There may be a rupture of the scar wall or diaphragm.

52. Traumatic reticulitis can be complicated by:

- a. Traumatic pericarditis.
- b. Traumatic pleurisy.
- c. Traumatic myocarditis.
- d. Traumatic renitis.
- e. Traumatic peritonitis.
- f. Traumatic cystitis.
- g. Traumatic arthritis.
- h. Traumatic hepatitis.

53. Inflammation of the jejunum is called:

- a. Duodenitis.
- b. Typhlitis.
- c. Eunitis.
- d. Proctitis.
- e. Ileitis.
- f. Colitis.

54. Inflammation of the colon is called:

- a. Duodenitis.
- b. Typhlitis.
- c. Eunitis.
- d. Proctitis.
- e. Ileitis.
- f. Colitis.

55. Acute catarrhal gastroenteritis is characterized by:

- a. Thickening and thickening of the mucous membrane and its folds.
- b. Swelling and loosening of the mucous membrane.
- c. Uneven spotty hyperemia.
- d. Loss of gloss of the mucous membrane.
- e. Gray-brown or slate-gray color with multiple black dots.
- f. The presence in the contents of the stomach and intestines of a large amount of thick, viscous, cloudy mucus (on the surface of the mucous membrane in the form of hard-to-remove overlays).

g. The mucous membrane is covered with a thick, viscous translucent, serous-mucous (m.b. mucopurulent or with an admixture of blood) plaque, which contains gray -white cloudy flakes.

56. Chronic catarrhal gastroenteritis is characterized by:

- a. Thickening and thickening of the mucous membrane and its folds.
- b. Swelling and loosening of the mucous membrane.
- c. Uneven mottled hyperemia.
- d. Loss of gloss of the mucous membrane.
- e. Gray-brown or slate-gray color with multiple black dots.
- f. The presence in the contents of the stomach and intestines of a large amount of thick, viscous, cloudy mucus (on the surface of the mucous membrane in the form of hard-to-remove overlays).
- g. The mucous membrane is covered with a thick, viscous translucent, serous-mucous (m.b. mucopurulent or with an admixture of blood) plaque, which contains gray - white cloudy flakes.

57. In the presence of easily removable fibrinous deposits on the surface of the mucous membrane, after removal of which a swollen, edematous and hyperemic mucous membrane is found, enteritis is called

- a. Croupous.
- b. Fibrous.
- c. Diphtheria.

58. When fibrin effusion occurs in the thickness of the mucous membrane, and often the submucosa, and it is associated with necrosis of the mucous membrane, more or less deep defects are noted with the forcible removal of fibrinous masses, gastritis or enteritis is called

- a. Croupous.
- b. Fibrous.
- c. Diphtheria.

59. The mucous membrane is gray - red, edematous, loose, with many hemorrhages in it, covered with a liquid or thick mucopurulent exudate of gray - greenish or greenish color. This pattern is typical for:

- a. Serous gastroenteritis.
- b. Acute catarrhal gastroenteritis.
- c. Fibrinous gastroenteritis.
- d. Hemorrhagic gastroenteritis.
- e. Purulent gastritis and enteritis.

60. The mucous membrane is dull, swollen and loosened, dark cherry in color, with multiple hemorrhages in it. The contents of the stomach and intestines are soaked with a large amount of bloody fluid and colored red. This pattern is typical for:

- a. Serous gastroenteritis.
- b. Acute catarrhal gastroenteritis.
- c. Fibrinous gastroenteritis.
- d. Hemorrhagic gastroenteritis.
- e. Purulent gastritis and enteritis.

61. Colic is:

- a. A symptom complex characteristic of diseases of the gastrointestinal tract.
- b. A symptom complex characterized by a violation of the motor and enzymatic functions of the intestine.
- c. A symptom complex manifested by sudden cutting pains in the abdominal cavity due to diseases of the organs located in the abdominal cavity.

62. Colic is called true, which:

- a. Are manifested as a result of inflammatory diseases of the abdominal cavity.
- b. Are necessarily accompanied by pain.
- c. Are manifested as a result of pathological processes in the gastrointestinal tract.

63. Functional disorders of the gastrointestinal tract, leading to a slowdown or cessation of the movement of feed masses while maintaining a free intestinal lumen, underlie:

- a. Mechanical obstruction.
- b. Dynamic obstruction.
- c. Hemostatic obstruction.

64. Intestinal vascular embolisms of a metastatic nature or thromboembolism of parasitic origin underlie:

- a. Mechanical obstruction.
- b. Dynamic obstruction.
- c. Hemostatic obstruction.

65. When narrowing or closing the intestinal lumen without straining or pinching the mesentery,

- a. Strongylatory ileus is observed
- b. Obturation, stenosing ileus.

66. When the mesentery is stretched and pinched and congestive hemorrhagic infarction of the wall of the pinched intestinal loop is observed -

- a. Strongylatory ileus.
- b. Obturation, stenosing ileus.

67. Dynamic colic includes:

- a. Acute enlargement of the stomach.
- b. Hernias and prolapses.
- c. Intestinal methiorism.
- d. Intestinal inversion.
- e. Displacement and inversion of the rennet (stomach).
- f. Chymostasis.
- g. Caprostasis.
- h. Thromboembolic colic.
- i. Intestinal invagination.
- g. Intestinal obstruction.

68. Mechanical colic includes:

- a. Acute enlargement of the stomach.
- b. Hernias and prolapses.
- c. Intestinal methiorism.
- d. Intestinal inversion.
- e. Displacement and inversion of the rennet (stomach).
- f. Chymostasis.
- g. Caprostasis.
- h. Thromboembolic colic.
- i. Intestinal invagination.
- g. Intestinal obstruction.

69. Intravital rupture of the stomach is characterized by:

- a. The animal's corpse swells rapidly and strongly.
- b. Fodder masses are found in the stomach, in the abdominal cavity. When washed off, they remain attached to the peritoneum in places.
- c. The edges of the rupture are smooth, not soaked in blood.
- d. The edges of the rupture are uneven, fringed, contaminated with fodder masses and soaked in blood.
- e. Fodder masses are found only in the stomach cavity, or in the abdominal cavity, but they are easily washed off the serous integuments.

70. Chemostasis is:

- a. Stagnation of contents in the small intestine,
- b. Stagnation of contents in the stomach,
- c. Stagnation of contents in the large intestine.

71. Part of the intestine is embedded in the lumen of another. The serous covering of the invaded part of the intestine is colored dark cherry, with many spotty hemorrhages. The mucous and submucosal membranes are edematous, infiltrated by red blood cells. This picture is

- a. Thromboembolic colic.
- b. Intestinal obstruction.
- c. Intestinal invagination.
- d. Hernias.
- e. Prolapse.

72. The exit of an intestinal loop or organ from the abdominal cavity through an anatomical or pathological opening with a rupture of the peritoneum is called -

- a. Thromboembolic colic.
- b. Intestinal obstruction.
- c. Intestinal invagination.
- d. Hernia.
- e. By falling out.

73. Thromboembolic colic is accompanied by:

- a. Intestinal obstruction.
- b. The development of hemorrhagic or anemic infarcts in the intestinal wall.
- c. Necrosis of the intestinal wall.
- d. The development of venous congestion and swelling of the intestinal wall.
- e. The development of peritonitis.

74. The exit of an intestinal loop or organ from the abdominal cavity through an anatomical or pathological opening while preserving the peritoneum is called:

- a. Thromboembolic colic.
- b. Intestinal obstruction.
- c. Intestinal invagination.
- d. Hernia.
- e. By falling out.

75. Toxic liver dystrophy is characterized by:

- a. Mosaic (mottled) coloring of the organ.
- b. The presence of inflammatory processes in the liver parenchyma.
- c. The presence of dystrophic, atrophic and necrobiotic processes in the parenchyma.
- d. Severe circulatory disorders.
- e. Overgrowth of the connective tissue of the organ.

76. Inflammation of the liver capsule is called:

- a. panhepatitis.
- b. Parahepatitis.
- c. Perihepatitis.

77. Inflammation of the gallbladder is called:

- a. Cholecystitis.
- b. Cystitis.
- c. Cholangitis.

78. Cirrhosis of the liver is:

- a. Reduced in volume and thickened liver of red color.
- b. Enlarged liver due to overgrowth of connective tissue.
- c. Overgrowth of connective tissue in the liver and deformity of the organ.

79. Cirrhosis can be:

- a. Atrophic.
- b. Biliary.
- c. Hypertrophic.
- d. Necrobiotic.
- d. Anular.
- e. Focal.
- g. Glomerular.
- z. Diffuse.
- i. Parenchymal.

80. The liver increases in volume and weight, has a dense consistency, with a smooth or slightly granular surface, and is yellow or greenish in color. This pattern is typical for:

- a. Atrophic cirrhosis
- b. Biliary cirrhosis.
- c. Hypertrophic cirrhosis.
- d. Necrobiotic cirrhosis.
- e. Anular cirrhosis.
- f. Focal cirrhosis.
- g. Glomerular cirrhosis.
- h. Diffuse cirrhosis.
- i. Parenchymal cirrhosis.

81. The liver is slightly enlarged, bumpy, and as the process progresses, it decreases and the bumpiness becomes more pronounced. The overgrowth of connective tissue occurs around the bile ducts. Histologically, accumulation of bile in the bile capillaries is noted - bile thrombi. This pattern is typical for:

- a. Atrophic cirrhosis
- b. Biliary cirrhosis.
- c. Hypertrophic cirrhosis.
- d. Necrobiotic cirrhosis.
- e. Anular cirrhosis.
- f. Focal cirrhosis.
- g. Glomerular cirrhosis.
- h. Diffuse cirrhosis.
- I. Parenchymal cirrhosis.

82. Nephrosis is:

- a. Dystrophic changes in the glomeruli or tubules of the kidneys.
- b. Inflammation of the kidneys.
- c. Dystrophic change, which is accompanied by a serious impairment of kidney function.

83. The inflammatory process in the kidneys, which begins with the renal glomeruli and in which the main lesions are observed in the renal glomeruli, is called:

- a. Glomerulonephritis.
- b. Pyelonephritis.
- c. Interstitial nephritis.

84. The inflammatory process in the kidneys, which mainly occurs in the intervertebral tissue, is called:

- a. Glomerulonephritis.
- b. Pyelonephritis.
- c. Interstitial nephritis.

85. Acute glomerulonephritis is characterized by:

- a. Serous or hemorrhagic character.
- b. Proliferative character.
- c. Capsule is removed with some effort.
- d. Capsule is removed easily. Kidney is slightly enlarged.
- e. The kidney is lighter than normal and has a mottled color.
- f. The cortical layer is thickened and has grayish-red dots (enlarged glomeruli).
- g. The kidney is normal in size or slightly reduced.
- i. The kidney is wrinkled, irregularly bumpy.
- K. The consistency of the organ is close to normal.
- l. The consistency of the organ is noticeably compacted

86. Chronic glomerulonephritis is characterized by:

- a. Serous or hemorrhagic character.
- b. Proliferative character.
- c. Capsule is removed with some effort.
- d. Capsule is removed easily.
- e. Kidney is slightly enlarged.
- f. The kidney is lighter than normal and has a mottled color.
- g. The cortical layer is thickened and has grayish-red dots (enlarged glomeruli).
- h. The kidney is normal in size or slightly reduced.
- i. The kidney is wrinkled, irregularly bumpy.
- K. The consistency of the organ is close to normal.
- l. The consistency of the organ is noticeably compacted. The cortical layer is thin, numerous grayish strokes and stripes are visible in it (the result of an overgrowth of connective tissue).

87. Non-purulent interstitial nephritis is characterized by:

- a. An increase in kidney size.
- b. Spotty coloration.
- c. A decrease in kidney size.
- d. Separation of the capsule with a certain effort.
- d. Yellowish color of the kidney.
- e. The capsule is removed easily.
- g. Formation of cysts on the border of the cortical and cerebral layers.

h. Numerous hemorrhages.

88. Among the nephritis listed below, there is a urogenic character:

- a. Glomerulonephritis.
- b. Pyelonephritis.
- c. Interstitial nephritis.

89. Pyelonephritis is usually accompanied by:

- a. Pyelitis.
- b. Glomerulitis.
- c. Cystitis.
- g. Ureteritis.
- d. Hepatitis.
- e. Urethritis.

90. In pyelonephritis, inflammation usually has

- a. Catarrhal character.
- b. Hemorrhagic character.
- c. Proliferative character.
- d. Purulent character.
- d. Fibrinous character.

91. Inflammation of the bladder is called:

- a. Urocystitis.
- b. Urethritis.
- c. Ureteritis.

92. Inflammation of the ureters is called:

- a. Urocystitis.
- b. Urethritis.
- c. Ureteritis.

93. Inflammation of the surrounding connective tissue of the uterus together with the wide uterine ligament is called:

- a. Endometritis.
- b. Metritis.
- c. Parametritis.
- g. Perimetritis.
- d. Pyometra.
- e. Panmetritis.

94. Acute or chronic purulent infection of the uterus, characterized by the accumulation of purulent exudate (thick or liquid pus) in the uterine cavity with the cervix closed, is called:

- a. Endometritis.
- b. Metritis.
- c. Parametritis.
- d. Perimetritis.
- D. Pyometra.
- E. Panmetrite.

95. Inflammation of the membranes of the brain and the substance of the brain is called.

- a. Meningoencephalitis.
- b. Pachymeningitis.

- c. Leptomeningitis.
- g. Encephalomyelitis.
- d. Polioencephalitis.
- e. Panencephalitis.
- g. Leukoencephalitis.

96. Inflammation of the soft meninges is called:

- a. Meningoencephalitis.
- b. Pachymeningitis.
- c. Leptomeningitis.
- g. Encephalomyelitis.
- d. Polioencephalitis.
- e. Panencephalitis.
- g. Leukoencephalitis.

97. Inflammation, observed mainly in the gray matter of the cortex or the stem part of the brain, is called:

- a. Meningoencephalitis.
- b. Pachymeningitis.
- B. Leptomeningitis.
- G. Encephalomyelitis.
- D. Polioencephalitis.
- E. Panencephalitis.
- J. Leukoencephalitis.

98. The exudative component of acute non-purulent encephalitis includes:

- a. Tigrolysis.
- b. Vacuolization of the cytoplasm of neurons.
- c. Proliferation of glial cells and formation of glial nodules.
- d. Blood filling of blood vessels.
- d. Edema of the brain.
- e. Vacuolization and lysis of the nucleus.
- g. Hemorrhages.
- h. Formation of perivascular clutches.
- i. Death of neurons.

99. The alterative component of acute non-purulent encephalitis includes:

- a. Tigrolysis.
- b. Vacuolization of the cytoplasm of neurons.
- b. Proliferation of glial cells and formation of glial nodules.
- g. Blood filling of blood vessels.
- d. Cerebral edema.
- e. Vacuolization and lysis of the nucleus.
- g. Hemorrhages.
- h. Formation of perivascular clutches.
- i. Death of neurons.

100. The proliferative component of acute non-purulent encephalitis includes:

- a. Tigrolysis.
- b. Vacuolization of the cytoplasm of neurons.
- c. Proliferation of glial cells and the formation of glial nodules.
- g. Blood filling of blood vessels.

- d. Cerebral edema.
- e. Vacuolization and lysis of the nucleus.
- g. Hemorrhages.
- h. Formation of perivascular clutches.
- i. Death of neurons

Questions for the assessment of Pathohistological diagnostics

Emerging competence:

He is able to understand the essence of typical pathological processes and specific diseases, perform autopsies and establish a postmortem diagnosis, objectively assess the correctness of treatment in the order of forensic veterinary examination and arbitration proceedings, comply with the rules for the storage and disposal of corpses, biological waste (PC-4).

1. Pathological anatomy and its role in the theory and practice of veterinary medicine. Materials and methods of pathoanatomic research.
2. Development of pathological anatomy as a science, Russian schools of veterinary pathologists.
3. Collection and transfer of the patent material for histological, bacteriological, virological and chemical-toxicological studies.
4. Postmortem changes.
5. Determination of the prescription of death based on postmortem changes.
6. Necrosis and its outcomes (macro- and micro-picture).
7. Dystrophies: definition, classification, general pathogenesis.
8. Cellular dysproteinosis: pathogenesis, pathomorphology.
9. Extracellular dysproteinosis: pathogenesis, pathomorphology.
10. Mixed dysproteinosis: impaired metabolism of chromoproteins.
11. Mixed dysproteinoses: impaired nucleoprotein metabolism.
12. Mixed dysproteinosis: impaired glycoprotein metabolism.
13. Pathogenesis and pathanatomy of fat metabolism disorders. Fat infiltration and decomposition (macro- and micro-paintings).
14. Morphogenesis of calcium metabolism disorders.
15. Stones and concretions, the conditions of their formation and their significance in pathology.
16. Jaundice: classification, pathogenesis and pathomorphology.
17. Carbohydrate dystrophies.
18. Hemorrhages: classification, morphology, outcome. Differential diagnosis of bruises and cadaverous spots.
19. Pathomorphology of thrombosis and embolism.
20. Pathogenesis and pathomorphology of heart attacks.
21. Atrophy, hypertrophy, hyperplasia (types, morphogenesis).
22. Pathogenesis and pathomorphology of edema and water spots.
23. Morphogenesis of regeneration of various tissues.
24. Metaplasia: the concept, morphology.
25. Inflammation: definition, classification.
26. Morphogenesis of alterative inflammation.
27. Morphogenesis of exudative inflammation.
28. Morphogenesis of productive inflammation.
29. Pathanatomy of the central organs of the immune system.
30. Pathanatomy of peripheral organs of the immune system.
31. Tumors: definition, classification, and theories of tumor growth.
32. Morphological characteristics of benign tumors.
33. Morphological characteristics of malignant tumors.
34. Leukemias: definition, etiology, classification.
35. Pathomorphology of leukemias in different species of animals and birds.

36. Gastritis: classification, pathomorphology.
37. Enteritis and colitis: classification and pathomorphology.
38. Hepatitis and hepatosis: classification and pathomorphology.
39. Hernias and prolapses: pathogenesis and pathomorphology.
40. Pathogenesis and pathomorphology of pre-ventricular tympania. The difference between tympania and postmortem bloating.
41. Pathanatomy of acute expansion and rupture of the stomach; the difference from postmortem changes.
42. Pathogenesis and pathomorphology of inversion, invagination and intestinal obstruction.
43. Endocarditis: pathogenesis, pathomorphology.
44. Myocarditis: pathogenesis, pathomorphology.
45. Pericarditis: pathogenesis, pathomorphology.
46. Pathological changes in blood vessels: hyalinosis, calcification, atherosclerosis.
47. Emphysema, atelectasis and pulmonary edema: classification and pathomorphology.
48. Pneumonia: classification and pathomorphological characteristics of various pneumonias.
49. Pleurisy: classification and pathomorphology.
50. Nephritis and nephrosis: classification and pathomorphology.
51. Pathomorphology of encephalitis and meningitis.
52. Pathology of thyroid and adrenal gland dysfunction.

2. METHODOLOGICAL MATERIALS DEFINING THE PROCEDURE FOR ASSESSING KNOWLEDGE, SKILLS AND WORK EXPERIENCE, CHARACTERIZING THE STAGES OF COMPETENCE FORMATION

Criteria for evaluating students' knowledge during testing:

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

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

Mark "good" – 21-18 correct answers.

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

"Unsatisfactory" mark – less than 13 correct answers

Criteria of knowledge during the test:

The "credited" grade must correspond to the parameters of any of the positive grades ("excellent", "good", "satisfactory").

The "not credited" grade must correspond to the parameters of the "unsatisfactory" grade.

Excellent" mark – 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 shown in the tables, operates with acquired knowledge, skills, and applies them in situations of increased complexity. At the same time, there may be inaccuracies, difficulties in analytical operations, and the transfer of knowledge and skills to new, non-standard situations.

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 shown 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, and the transfer of knowledge and skills to new, non-standard situations may be made.

The mark "satisfactory" means that 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 shown in the tables, significant errors are

made, a partial lack of knowledge, skills, and abilities is manifested in a number of indicators, and the student experiences significant difficulties in using knowledge and skills when transferring them to new situations. –

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

3. Accessibility and quality of education for people with disabilities

If necessary, people with disabilities and people with disabilities are given additional time to prepare an answer for the test.

When carrying out the procedure for evaluating the learning outcomes of people with disabilities and persons with disabilities, their own technical means can be used.

The procedure for evaluating the learning outcomes of people with disabilities 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 persons 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 people with disabilities 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 how to conduct 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, verbally).

If necessary, for students with disabilities and people with disabilities, the procedure for evaluating learning outcomes in a discipline can be carried out in several stages.

The procedure for assessing the learning outcomes of people with disabilities and persons with disabilities is allowed using distance learning technologies.