

**MINISTRY OF SCIENCE AND HIGHER EDUCATION
RUSSIAN FEDERATION**

**FEDERAL STATE AUTONOMOUS EDUCATIONAL INSTITUTION OF
HIGHER EDUCATION
NORTH-CAUCASUS FEDERAL UNIVERSITY**

Methodological Guidelines
for Students on arranging and performing independent work
in the Discipline of **Pathological anatomy, clinical pathological anatomy**
for Students majoring (Specialty) in 31.05.01 General Medicine

Methodological Recommendations for Studying Theoretical Material

When performing the independent study of theoretical material, the student must follow the rules as set below. The working curriculum of the respective academic discipline shall be recommended to be used as the basis for such activity. According to the schedule of classroom lessons and independent work, a different number of hours is to be allocated for studying individual topics. A significant portion of the student's independent work should be allocated to mastering the material on the covered topic, writing a summary (notes) on the specified theoretical blocks, and searching for additional literature based on the NCFU library and via the Internet system. The lecture material shall not cover all theoretical material; the greater part of it must be mastered through independent work. Given the above, working with the recommended literature is mandatory. Special attention must be paid to the content of the main provisions and conclusions, the explanation of phenomena and facts, and the understanding of the practical application of the theoretical issues under consideration. In the process of this work, the student should strive to understand and memorize the main provisions of the material being considered, the examples illustrating it, as well as to understand the illustrative material. Preparation should be completed by drawing up a plan (summary/notes) on the material (issue) being studied. This allows for the creation of a concentrated, concise representation of the issues being studied. First, studying the recommended literature is to be done. Special attention must be paid to the content of the main provisions and conclusions, the explanation of phenomena and facts, and the understanding of the practical application of the theoretical issues under consideration.

During this work, the student should strive to understand and memorize the main provisions of the material being considered, the examples illustrating it, as well as to understand the illustrative material. Preparation should be completed by drawing up a plan (summary/notes) on the material (issue) being studied. This allows for the creation of a concentrated, concise representation of the issues being studied. If necessary, one should seek (advice) consultation from the instructor. When going to a consultation, it is necessary to thoroughly think through the questions that require clarification. Keeping records contributes to turning reading into an active process, mobilizing motor memory along with visual memory. The following should be born in mind: a student who systematically keeps records creates their own individual stock of auxiliary materials for a quick review of what has been read and for the mobilization of accumulated knowledge. Records are especially important and useful when they reflect the thoughts that arose during independent work.

It is important to develop the students' capacity to compare sources and to think through the material being studied.

Improving note-taking skills among students is of great importance.

The instructor may recommend the following main forms of recording to students: a plan (simple and detailed), excerpts, and theses (abstracts).

The results of note-taking can be presented in various forms.

- A plan is an outline of the read material, a brief (or detailed) list of questions reflecting the structure and sequence of the material.
- A detailed plan fully replaces a summary.
- A summary (notes) is a systematized, logical presentation of the source material. Four types of summaries are distinguished:
 - Outline-summary (Plan-notes) – this is an expanded, detailed plan in which sufficiently detailed records are provided for those points of the plan that need explanation.
 - Textual summary – this is the reproduction of the most important provisions and facts of the source.
 - Free summary – these are clearly and briefly formulated (stated) main provisions resulting from a deep understanding of the material. It may contain excerpts, quotations, and theses; part of the material may be represented by a plan.

- Theme-based summary – this is compiled on the basis of studying a number of sources and gives a more or less exhaustive answer according to a certain scheme (issue).

Methodological Guidelines for the Preparation for Practical Activities

When preparing for practical activities, the recommendation implies studying the control questions for the given lesson and the theoretical material from one's own notes.

The main form of work during the lessons is an interview (discussion). Each student must be ready to speak on all issues raised in the plan and demonstrate maximum activity during their consideration.

The speech must be constructed freely, convincingly, and with arguments. The instructor ensures that the speech is not reduced to a reproductive level (simple reproduction of the text); simple reading of the summary is also not allowed.

It is necessary for the speaker to show their own attitude towards what they are talking about, express their personal opinion and understanding, substantiate it, and be able to draw the correct conclusions from what has been said. In doing so, the student may refer to the entries in the summary, directly to the primary sources, use knowledge of previously studied disciplines, etc. In addition, to obtain a grade at an advanced level, students solve situational tasks based on the results of the mastered topics.

During the execution of practical works, a defense of practical skills is provided, the full list of which is specified in the fund of assessment tools.

Methodological Recommendations for the Preparation of Presentations and Reports

The report must contain elements of novelty; along with the fundamental aspect, an analysis of the current state of the problem under study must be carried out, as well as inclusion in regional issues. The report must include an introduction, a theoretical part, a conclusion, a list of literature, and a presentation that reveals the essence of the topic in graphs, pictures, diagrams, and formulas.

The report is recommended to be submitted on 1 printed sheet. The text of the work must be printed with 1.5 line spacing on one side of a standard sheet (A4) of white paper.

The text and other printed elements of the work must be black, and the contours of letters and signs must be clear, without halos and shading. The font must be Times New Roman, size 14. The titles of chapters and paragraphs are highlighted in bold. The sheet with text must have margins: left – 30 mm, right – 10 mm, top – 20 mm, bottom – 20 mm.

Page numbering of the text is done in the lower right corner of the sheet. It is necessary to number pages starting from the page where the Introduction is printed, on which the number 3 is placed. After that, all pages, including appendices, are numbered.

A space equal to two intervals is placed between the title of the chapter and the title of the paragraph of this chapter, and the title of the paragraph must not be separated from the text of this paragraph by a space. The titles of paragraphs shall be separated from the text of the previous paragraph by a space equal to two intervals. Each chapter, as well as the introduction, conclusions, appendices, and the list of used literature, begin on a new page. The word Chapter is not to be written. Chapters have ordinal numbers within the entire work, designated by Arabic numerals (for example: 1, 2, 3), followed by a period.

The word **PARAGRAPH** or the paragraph symbol (§) is not placed in the title. Paragraphs have ordinal numbers within the chapters, designated by Arabic numerals (for example: 1.1. and 1.2.).

Headings of chapters and paragraphs in the text must be centered; a period shall not be placed at the end of the title of the chapter and paragraph. It is not allowed to hyphenate (transfer) a part of a word in a heading. 4.5. The numbering of tables and figures can be running (continuous) or relate to the number of the chapter and paragraph. For example, if a table or a figure is included

in the text of the first paragraph of the second chapter, the numbering is as follows: Table 2.1.1., Fig. 2.1.1.

The last digit means the ordinal number of the table (or figure) in this paragraph.

The table is to be placed as the next page after the first mention of it in the text.

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METHODOLOGICAL GUIDELINES

for laboratory classes

in the discipline "**Pathological anatomy, clinical pathological anatomy**"

for students of specialty 31.05.01 General medicine

INTRODUCTION

The purpose of studying the discipline "Pathological anatomy, clinical pathology anatomy" is the acquisition by students of knowledge about the structural foundations of diseases, their etiology and pathogenesis, the study of the most typical, characteristic changes in the macro- and microscopic levels for understanding the theoretical foundations of medicine, a more in-depth study of the clinic and the use of acquired knowledge in the work of a general practitioner; mastering the skills of clinical and anatomical analysis based on a comparison of morphological and clinical manifestations of diseases at all stages of their development.

Objectives of the discipline:

- study of morphological changes in molecular, cellular, tissue, organ, systemic and intersystem typical pathological processes;
- study of the morphology of development and outcomes of specific diseases developing in individual organs and systems;
- analysis of the nature of the clinical manifestations of the main pathological processes;
- familiarization with the principles of intravital and postmortem diagnostics of diseases of individual organs and systems.

As a result of studying the discipline, the student should know:

- basic concepts of etiology, pathogenesis and pathomorphology of the studied diseases and pathological processes.
- characteristic changes in internal organs in the most important human diseases;
- fundamentals of clinical and anatomical analysis and principles of constructing a pathoanatomic diagnosis
- Principles of the international classification of diseases
- basic definitions and classifications of the studied pathological processes;
- macro- and microscopic characteristics of the studied pathological processes.

Must be able to:

- describe the morphological changes of the studied macro-preparations, micro-preparations, including biopsy;
- to formulate an opinion on the course of the pathological process and its clinical manifestations, to formulate a preliminary diagnosis
- to evaluate pathological processes in the human body in order to solve professional problems - to define and classify the studied pathological processes;
- to describe the macro- and microscopic characteristics of the studied diseases, to draw conclusions/

Must possess:

- skills of working with a microscope and pathohistological preparations;
- Skills of diagnosis and assessment based on the macro- and microscopic picture of the studied diseases and pathological processes; skills of making a preliminary diagnosis based on the results of morphological examination, the formulation of the diagnosis according to the modern classification;
- the basics of classification of the studied diseases and pathological processes; skills of diagnosis and assessment based on the macro- and microscopic picture of the studied diseases and pathological processes.

Section 1. General pathological anatomy

Laboratory work no.1. Pathological anatomy: contents, tasks and research methods. Historical stages of development.

Control questions:

1. The content and tasks of pathological anatomy.
2. Historical stages of the development of pathological anatomy. The contribution of the French morphologists M. Bichat (1771-1802), J. Corvisard (1755-1821) and J. Crovelier (1791-1874).
3. Contribution of the German scientist R. Virchow.
4. The development of pathological anatomy in Russia. F.F. Keresturi (1735-1811), E.O. Mukhin (1766-1850), A.I. Over (1804-1864). A.I. Polunin, I.F. Klein, M.N. Nikiforov, V.I. Kedrovsky, A.I. Abrikosov, A.I. Strukov, V.V. Serov, M.A. Fingers, V.S. Paukov.
5. I.V. Davydovsky (1887-1968).
6. St. Petersburg School of Pathology.

Laboratory work No. 2-3. Cell pathology

Control questions:

1. Pathology of the cell nucleus.
2. Pathology of mitosis. Chromosomal aberrations and chromosomal diseases.
3. Pathology of cytoplasm.
4. Pathology of organoids.
5. Pathology of cell junctions.

Laboratory work No.4-5. Dystrophy. Parenchymal, stromal vascular, mixed.

Control questions:

1. Dystrophy as an expression of a violation of tissue (cellular) metabolism and a form of damage (alteration).
2. Dystrophies as the first reactive process in ontogenesis. General patterns of development.
3. Causes, pathogenesis, morphogenesis and morphological specificity, classification.
4. Parenchymal dystrophies, concept, types.
5. Parenchymal protein dystrophies (dysproteinoses). Granular dystrophy. Hyaline drip dystrophy. Hydropic (watery) dystrophy.
6. Parenchymal fatty degeneration (lipidosis).
7. Parenchymal carbohydrate dystrophies. Carbohydrate dystrophies associated with impaired glycogen metabolism. Carbohydrate dystrophies associated with metabolic disorders glycoproteins.
8. Stromal vascular dystrophies. Dysproteinosis. Amyloidosis.
9. Stromal vascular fatty dystrophy.
10. Stromal vascular carbohydrate dystrophy.
11. Mixed dystrophies. Disorders of chromoprotein metabolism (endogenous pigmentation).
12. Disorders of nucleoprotein metabolism.
13. Disorders of mineral metabolism (mineral dystrophies). Formation of stones.

Laboratory work No. 6-7. Apoptosis and necrosis.

Control questions:

1. The concept, pathogenesis, and morphogenesis of apoptosis.
2. The concept of necrosis, morphogenesis, microscopic signs. Classification. Mechanisms of occurrence. Clinical and morphological forms: coagulation necrosis, colliquation necrosis, gangrene, sequestration, infarction.
3. Death, signs of death, postmortem changes. Types of death.

Laboratory work No.8-9-10. Circulatory and lymphatic disorders.

Control questions:

1. Circulatory disorders: general characteristics, classification.
2. Blood supply disorders. Arterial fullness, characteristics, types. Venous fullness, characteristics, types.
3. Anemia: general, acute, chronic. Types of anemia – angiospastic, obstructive, compression, ischemia as a result of blood redistribution. The significance and consequences of anemia.
4. Bleeding as a violation of vascular wall permeability. Definition, causes, outcome, and significance of bleeding.
5. Plasmorrhagia is the release of plasma from the bloodstream. Definition, pathogenesis, outcome, the significance of plasmorrhagia.
6. Disorders of the flow and condition (rheology) of blood. Stasis: definition, mechanism of development, cause, meaning.
7. Thrombosis: definition, mechanism of development, morphology of thrombus, pathogenesis of thrombosis. Disseminated intravascular coagulation syndrome. The outcome of thrombosis. The significance of thrombosis.
8. Embolism: definition, mechanism of development. Types of emboli. Fatty thromboembolism, airborne thromboembolism, gas thromboembolism, tissue (cellular) thromboembolism, microbial thromboembolism, foreign body embolism. Meaning.
9. Shock. Types of shock. Morphological picture of shock.
10. Lymphatic circulation disorders. The concept. Morphological manifestations: stagnation of lymph and dilation of lymphatic vessels (lymphodema), consequences and significance.
11. Violations of the content of tissue fluid. Mechanisms of development. Classification: congestive, cardiac, renal, dystrophic, septic, inflammatory, allergic, toxic, neurotic, traumatic edema. Outcomes, meaning.

Laboratory work No. 11-12. Inflammation.

Control questions:

1. Definition. Etiology of inflammation. Morphology and pathogenesis of inflammation.
2. Terminology and classification of inflammation.
3. Morphological forms of acute inflammation. Exudative inflammation: serous, fibrinous, purulent, putrefactive, hemorrhagic, catarrhal, mixed – morphological picture, causes, course, outcome, meaning.
4. Proliferative (productive) inflammation. Types, causes, course, meaning.
5. Acute productive inflammation: interstitial inflammation, granulomatous inflammation. Issue.
6. Chronic inflammation. Types: chronic exudative inflammation, chronic productive inflammation, chronic granulomatous inflammation. Etiology, pathogenesis.
7. Immune inflammation.

Laboratory work No. 13-14-15. Immunopathological processes.

Control questions:

1. Morphology of immunogenesis disorders. Changes in the thymus gland in disorders of immunogenesis.
2. Changes in peripheral lymphoid tissue in disorders of immunogenesis.
3. Hypersensitivity reactions. Mechanisms of development.
4. Morphological characteristics of hypersensitivity reactions.
5. Autoimmunity and autoimmune diseases.
6. Immunodeficiency syndromes.
7. Primary immunodeficiency syndromes: cellular and humoral immunity, cellular immunity deficiency syndromes, humoral immunity deficiency syndromes, systemic insufficiency syndromes monocyctic phagocytes and neutrophils.
8. Secondary immunodeficiency syndromes.

Laboratory work No. 16-17. Processes of adaptation and compensation.

Control questions:

1. The concept of adaptation and compensation.
2. Adaptation. The main processes of adaptation are atrophy, its types and features, hypertrophy, regeneration and tissue restructuring.
3. Compensation. Hypertrophy and hyperplasia. Types and characteristics.

Laboratory work No. 18-19. Regeneration.

Control questions:

1. The concept of regeneration, meaning for the body. Species, morphogenesis.
2. Physiological regeneration, reparative regeneration, pathological regeneration.
3. Regeneration of individual tissues and organs. Reparative blood regeneration. Regeneration of blood and lymphatic vessels.
4. Regeneration of connective tissue. Regeneration of adipose tissue. Regeneration bone tissue. Regeneration of cartilage and muscle tissue.
5. Regeneration of epithelium, mesothelium, specialized epithelium.
6. Regeneration of different parts of the nervous system.
7. Wound healing, the concept and types of wound healing according to I.V. Davydovsky.

Laboratory work No. 20-21. Tissue restructuring.

Control questions:

1. The concept of tissue restructuring. The basis of tissue restructuring: hyperplasia, regeneration and accommodation.
2. Compensation mechanisms.
3. Hypertrophy as the most common morphological manifestation of compensation. Hypertrophy of the heart. Hypertrophy of the stomach or intestinal wall. Hypertrophy of the bladder wall.
4. Sclerosis. The concept and classification of sclerosis.

Laboratory work No. 22-23-24. Tumors.

Control questions:

1. Definition of "tumor". The main properties of the tumor. Anaplasia and cataplasia, differences.
2. The structure of the tumor, the features of the tumor cell. Microscopic structure, morphological features.
3. Biochemical and histochemical atypism. Antigenic atypism. Functional properties of a tumor cell.
4. Tumor growth. Types of growth: expansive, appositional, infiltrating (invasive).
5. Benign and malignant tumors.
6. Morphogenesis of tumors.
7. Histogenesis of tumors.
8. The progression of tumors.
9. The body's immune response to the tumor.
10. Etiology of tumors. Virus-genetic theory, physico-chemical theory, dysontogenetic theory, polyethological theory.
11. Classification and morphology of tumors.
 - Epithelial tumors without specific localization;
 - Benign tumors;
 - Malignant tumors;Tumors of exo- and endocrine glands and epithelial integuments;
 - Mesenchymal tumors;Tumors of melanin - forming tissue;
Tumors of the nervous system and brain membranes;
 - Tumors of the blood system;
 - Teratomas.

Section 2. Private pathological anatomy

Laboratory work No. 25. Diseases of the blood system. Anemia. Hemoblastosis. Thrombocytopenia and thrombocytopathy.

Control questions:

1. General characteristics of diseases of the blood system.
2. Anemia. Etiology and pathogenesis. Classification.
3. Anemia due to blood loss (posthemorrhagic).
4. Anemia due to hematopoiesis disorders: iron deficiency, vitamin B12 deficiency, hypo- and aplastic anemia.
5. Anemia due to increased blood loss (hemolytic).
6. Tumors of the blood system (hemoblastosis). Classification of hematopoietic and lymphatic tissue.
7. Leukemias are systemic malignant diseases of the hematopoietic tissue. Etiology, pathogenesis, classification.
8. Acute leukemia.
9. Chronic leukemia.
10. Lymphomas are regional tumor diseases of hematopoietic and lymphatic tissues. Etiology and pathogenesis.
11. Lymphosarcoma. Reticulosarcoma.
12. Fungal mycosis. Serasi's disease.
13. Hodgkin's disease.
14. Thrombocytopenia. Classification. Pathological anatomy.

15. Thrombocytopathies. Classification. Pathological anatomy.

Laboratory work No. 26-27. Diseases of the cardiovascular system.

Control questions:

1. Endocarditis. Definition. Kinds.
2. Infective endocarditis. Etiology and pathogenesis. Classification. Pathological anatomy. Pathomorphosis.
3. Fibroplastic parietal endocarditis with eosinophilia. Etiology and pathogenesis. Pathological anatomy. Complications.
4. Myocarditis. Idiopathic myocarditis. Etiology and pathogenesis. Pathological anatomy. Complications.
5. Heart defects: congenital and acquired. Mechanism of formation, pathological anatomy.
6. Mitral valve defect. Aortic valve defect.
7. Cardiosclerosis. Pathological anatomy. Clinical significance.
8. Atherosclerosis. Definition. Etiology. Pathogenesis. Pathological anatomy and morphogenesis.
9. Clinical and morphological forms of atherosclerosis: atherosclerosis of the aorta, coronary arteries of the heart, cerebral arteries, renal arteries, intestinal arteries.
10. Hypertension. Definition, etiology and pathogenesis. The course of hypertension. Clinical and morphological forms.
11. Coronary heart disease. Definition, etiology and pathogenesis. Pathogenetic factors. Classification.
12. Acute myocardial ischemia. Macroscopic and microscopic diagnostics.
13. Myocardial infarction. Classification and pathological anatomy. The course of myocardial infarction. Complications.
14. Cerebrovascular diseases. Etiology and pathogenesis, classification. Pathological anatomy.
15. Cardiomyopathy. Definition. Classification.
16. Primary (idiopathic) cardiomyopathies. Hypertrophic cardiomyopathy: morphogenetic hypotheses. Dilated cardiomyopathy. Restrictive cardiomyopathy.
17. Secondary cardiomyopathies.
18. Vasculitis. Definition. Systemic vasculitis, etiology and pathogenesis. Classification.
19. Nonspecific aortoarteritis. Nodular periarteritis. Definition, etiology, pathogenesis, pathanatomy.
20. Wegener's granulomatosis. Characteristics, etiology and pathogenesis, pathanatomy.
21. Obliterating thrombangiitis. Characteristics, etiology and pathogenesis, pathanatomy.
22. Rheumatic diseases. Characteristics, etiology, classification.
23. Rheumatism: definition, etiology, pathogenesis, morphogenesis, pathology. The forms of manifestation are endocarditis, myocarditis, pericarditis, and polyarthritides. Complications.
24. Rheumatoid arthritis: definition, etiology, pathogenesis, morphogenesis, pathology. Complications.
25. Ankylosing spondylitis. Definition, etiology, pathogenesis, morphogenesis, pathanatomy.
26. Systemic lupus erythematosus. Definition, etiology, pathogenesis, morphogenesis, pathanatomy.
27. Systemic scleroderma. Definition, etiology, pathogenesis, morphogenesis, pathanatomy.
28. Dermatomyositis. Definition, etiology, pathogenesis, morphogenesis, pathanatomy.

Laboratory work No. 28. Respiratory diseases.

Control questions:

1. General characteristics of respiratory diseases.
2. Acute bronchitis: etiology and pathogenesis, pathological anatomy, complications, outcome.
3. Acute pneumonia: characteristics, etiology, pathogenesis, features of clinical and morphological manifestations.
4. Croup pneumonia: characteristics, etiology, pathogenesis, morphogenesis, features of clinical and morphological manifestations, stages of development. Complications.
5. Bronchopneumonia: characteristics, etiology, pathogenesis, morphogenesis, features of clinical and morphological manifestations. Complications.
6. Interstitial pneumonia: characteristics, etiology, pathogenesis, morphogenesis, features of clinical and morphological manifestations. Complications.
7. Acute destructive processes in the lungs. Lung abscess. Gangrene of the lung.
8. Chronic nonspecific lung diseases. Chronic bronchitis. Bronchiectasis. Emphysema of the lungs. Bronchial asthma. Characteristics, etiology, pathogenesis, morphogenesis, features of clinical and morphological manifestations. Complications.
9. Chronic abscess, chronic pneumonia. Interstitial diseases lungs: classification, etiology, pathogenesis, pathanatomy.
10. Pneumofibrosis. Pneumoconiosis. Lung cancer: characteristics, etiology, pathogenesis, morphogenesis, features of clinical and morphological manifestations. Complications.
11. Histological types of lung cancer.
12. Pleurisy.

Laboratory work No. 29-30. Diseases of the gastrointestinal tract.

Control questions:

1. General characteristics of diseases of the gastrointestinal tract.
2. Diseases of the pharynx and larynx: etiology and pathogenesis, pathology, complications.
3. Diseases of the salivary glands: characteristics, etiology and pathogenesis, pathology, complications.
4. Diseases of the esophagus. Diverticulum of the esophagus, esophagitis. Cancer of the esophagus. Characteristics, etiology and pathogenesis, pathology, complications.
5. Stomach diseases. Gastritis, types of gastritis. Characteristics, etiology and pathogenesis, pathology, complications.
6. Peptic ulcer disease. Characteristics, etiology and pathogenesis, pathology, complications.
7. Stomach cancer. Characteristics, etiology and pathogenesis, pathanatomy, morpho- and histogenesis, complications.
8. Intestinal diseases. Malformations, enteritis. Characteristics, etiology and pathogenesis, pathology, complications.
9. Enteropathies. Whipple's disease. Characteristics, etiology and pathogenesis, pathanatomy, morpho- and histogenesis, complications.
10. Colitis. Forms of colitis. Characteristics, etiology and pathogenesis, pathanatomy, morpho- and histogenesis, complications.
11. Crohn's disease. Characteristics, etiology and pathogenesis, pathanatomy, morpho- and histogenesis, complications.
12. Appendicitis. Forms of appendicitis. Characteristics, etiology and pathogenesis, pathanatomy, morpho- and histogenesis, complications.
13. Intestinal tumors.

14. Peritonitis.

Laboratory work No. 31. Diseases of the liver, gallbladder and pancreas.

Control questions:

1. General characteristics of liver, gallbladder and pancreatic diseases.
2. Liver diseases. Hepatosis. Massive progressive liver necrosis. Fat hepatosis. Characteristics, etiology and pathogenesis, pathanatomy, morpho- and histogenesis, complications.
3. Hepatitis. Forms of hepatitis. Characteristics, etiology and pathogenesis, pathanatomy, morpho- and histogenesis, complications.
4. Cirrhosis of the liver. Forms of cirrhosis. Characteristics, etiology and pathogenesis, pathanatomy, morpho- and histogenesis, complications.
5. Liver cancer. Characteristics, etiology and pathogenesis, pathanatomy, morpho- and histogenesis, complications.
6. Diseases of the gallbladder. Characteristics, etiology and pathogenesis, pathanatomy, morpho- and histogenesis, complications.
7. Diseases of the pancreas. Pancreatitis. Pancreatic cancer. Characteristics, pathogenesis, morphogenesis. Complications.

Laboratory work No. 32. Kidney diseases.

Control questions:

1. General characteristics of kidney diseases. Glomerulopathy: glomerulonephritis, classification, pathogenesis, morphogenesis, complications.
2. Nephrotic syndrome. Lipoid nephrosis: etiology, pathology, course.
3. Membranous nephropathy. Characteristics, pathogenesis, morphogenesis. Complications.
4. Kidney amyloidosis. Characteristics, pathogenesis, pathanatomy, morphogenesis. Complications.
5. Tubulopathy. Acute renal failure: etiology, pathogenesis, stages, morphogenesis, pathology, complications. etiology, pathogenesis,
6. Chronic tubulopathy.
7. Interstitial nephritis. Tubulointerstitial nephritis: characteristics, etiology, pathogenesis, classification.
8. Pyelonephritis: characteristics, etiology, pathogenesis, types, complications, prevention.
9. Urolithiasis: characteristics, etiology, pathogenesis, types, complications.
10. Polycystic kidney disease: characteristics, etiology, pathogenesis, types, complications.
11. Nephrosclerosis: characteristics, etiology and classification, pathogenesis and morphogenesis, pathology, complications. Chronic renal insufficiency.
12. Kidney tumors: characteristics, types, etiology, pathogenesis.

Laboratory work No. 33-34. Diseases of the female genital organs and breast. Diseases of pregnancy and the postpartum period.

Control questions:

1. Dyshormonal diseases of the female genital organs and breast. Glandular hyperplasia of the uterine mucosa. Endocervicosis. Adenomatosis of the cervix. Polyps of the cervix. Benign breast dysplasia. Characteristics, types, etiology, pathogenesis.
2. Inflammatory diseases of the female genital organs and breast. Endometritis. Mastitis. Characteristics, types, etiology, pathogenesis, complications.

3. Tumors of the female genital organs and breast. Cervical cancer. Cancer of the uterine body. Ovarian cancer. Breast cancer. Characteristics, types, etiology, pathogenesis, complications.

4. Diseases of pregnancy and the postpartum period. Gestosis. Eclampsia. Characteristics, types, etiology, pathogenesis, pathology, complications. Ectopic pregnancy. Spontaneous abortion and premature birth.

5. Gestational trophoblastic disease. Cystic fibrosis: characteristics, types, etiology, pathogenesis, pathology, complications.

6. Choriocarcinoma: characteristics, types, etiology, pathogenesis, pathology, complications.

7. Birth infection of the uterus: characteristics, types, etiology, pathogenesis, pathology, complications.

Laboratory work No. 35. Pathology of the afterbirth.

Control questions:

1. Placental insufficiency: characteristics, types, etiology, pathogenesis, pathology, complications.

2. Malformations of the placenta:

3. Pathology of the umbilical cord: characteristics, types, etiology, pathogenesis, pathology, complications.

4. Pathology of the membranes.

5. Afterbirth infections: characteristics, types, etiology, pathogenesis, pathology, complications.

6. Tumors of the afterbirth.

7. Trophoblastic disease.

Laboratory work No. 36. Perinatal pathology.

Control questions:

1. General characteristics of the perinatal period.

2. Fetal and newborn asphyxia: characteristics, types, etiology, pathogenesis, pathology, complications.

3. Hyaline membrane disease: characteristics, types, etiology, pathogenesis, pathology, complications.

4. Pneumonia of the perinatal period.

5. Bronchopulmonary dysplasia.

6. Hemolytic disease of newborns: characteristics, types, etiology, pathogenesis, pathology, complications.

7. Hemorrhagic disease of newborns.

8. Birth trauma: characteristics, types, etiology, pathogenesis, pathology, complications.

9. Hypoxic and ischemic brain damage.

10. Infectious diseases of the perinatal period: congenital toxoplasmosis, congenital rubella, congenital cytomegaly, congenital herpes infection, neonatal sepsis. Characteristics, types, etiology, pathogenesis, pathology, complications.

Laboratory work No. 37. Diseases of the male genital organs.

Control questions:

1. Dyshormonal diseases of the male genital organs. Benign prostatic hyperplasia. Characteristics, types, etiology, pathogenesis, complications.
2. Inflammatory diseases of the male genital organs. Prostatitis. Orchitis. Characteristics, types, etiology, pathogenesis, complications.
3. Tumors of the male genital organs. Prostate cancer. Testicular cancer. Characteristics, types, etiology, pathogenesis, complications.

Laboratory work No. 38. Diseases of the endocrine glands.

Control questions:

1. General characteristics of diseases of the endocrine glands.
2. Pituitary gland diseases: acromegaly, pituitary nanism, cerebral-pituitary cachexia, Itsenko-Cushing's disease, adiposogenital dystrophy, diabetes insipidus, tumors of the pituitary gland. Characteristics, types, etiology, pathogenesis, pathology, complications.
3. Diseases of the adrenal glands: Addison's disease. Characteristics, types, etiology, pathogenesis, pathology, complications.
4. Diseases of the thyroid gland: goiter, thyroiditis and tumors. Characteristics, types, etiology, pathogenesis, pathology, complications.
5. Diseases of the parathyroid gland: primary and secondary hyperplasia. Characteristics, types, etiology, pathogenesis, pathology, complications.
6. Diseases of the pancreas: diabetes mellitus. Characteristics, types, etiology, pathogenesis, pathology, complications.
7. Diseases of the reproductive glands.

Laboratory work No. 39. Vitamin deficiency.

Control questions: 1.

- Rickets. Characteristics, types, etiology, pathogenesis, pathology, complications.
2. Scurvy. Characteristics, types, etiology, pathogenesis, pathology, complications.
 3. Xerophthalmia. Characteristics, types, etiology, pathogenesis, pathology, complications.
 4. Pellagra. Characteristics, types, etiology, pathogenesis, pathology, complications.
 5. Vitamin B12 and folic acid deficiency. Characteristics, types, etiology, pathogenesis, pathology, complications.

Laboratory work No. 40. Diseases of the musculoskeletal system.

Control questions:

1. Diseases of the bone system. Parathyroid osteodystrophy. Characteristics, types, etiology, pathogenesis, pathology, complications.
2. Osteomyelitis. Characteristics, types, etiology, pathogenesis, pathology, complications.
3. Fibrotic dysplasia. Osteopetrosis. Characteristics, types, etiology, pathogenesis, pathology, complications.
4. Paget's disease. Characteristics, types, etiology, pathogenesis, pathology, complications.
5. Joint diseases. Osteoarthritis. Rheumatoid arthritis. Characteristics, types, etiology, pathogenesis, pathology, complications.

6. Diseases of skeletal muscles. Progressive muscular dystrophy. Myasthenia gravis. Characteristics, types, etiology, pathogenesis, pathology, complications.

Laboratory work No. 41. Diseases of the central nervous system.

Control questions:

1. General characteristics of CNS diseases. Classification.
2. Alzheimer's disease. Characteristics, types, etiology, pathogenesis, pathology, complications.
3. Amyotrophic lateral sclerosis (Charcot's disease). Characteristics, types, etiology, pathogenesis, pathology, complications.
4. Multiple sclerosis (multiple sclerosis). Characteristics, types, etiology, pathogenesis, pathology, complications.
5. Encephalitis. Tick-borne encephalitis. Characteristics, types, etiology, pathogenesis, pathology, complications.

Laboratory work No. 42-43. Infectious diseases.

Control questions:

1. General characteristics of infectious diseases. Clinical and morphological characteristics. Classification.
2. Viral diseases. Acute respiratory viral infections. Flu. Parainfluenza. Respiratory syncytial infection. Adenovirus infection. Characteristics, types, etiology, pathogenesis, pathology, complications.
3. Acquired immunodeficiency syndrome. Epidemiology. The source of infection. Transmission paths. Etiology, pathogenesis. The course of acquired immunodeficiency syndrome and its morphology. The clinical picture of acquired immunodeficiency syndrome.
4. Smallpox. Characteristics, types, etiology, pathogenesis, pathology, complications.
5. Rabies. Characteristics, types, etiology, pathogenesis, pathology, complications.
6. Rickettsiosis. Characteristics, types, etiology, pathogenesis, pathology, complications.
7. Endemic typhus. Sporadic typhus fever. Koo-fever. Characteristics, types, etiology, pathogenesis, pathology, complications.
8. Diseases caused by bacteria. Typhoid fever. Characteristics, types, etiology, pathogenesis, pathology, complications.
9. Salmonella. Dysentery. Characteristics, types, etiology, pathogenesis, pathology, complications.
10. Yersiniosis. Cholera. Characteristics, types, etiology, pathogenesis, pathology, complications.
11. The plague. Tularemia. Characteristics, types, etiology, pathogenesis, pathology, complications.
12. Brucellosis. Anthrax. Characteristics, types, etiology, pathogenesis, pathology, complications.
13. Recurrent typhus. Characteristics, types, etiology, pathogenesis, pathology, complications.
14. Tuberculosis. Characteristics, types, etiology, pathogenesis, pathology, complications.
15. Syphilis. Characteristics, types, etiology, pathogenesis, pathology, complications.
16. Sepsis. Septicemia. Chroniosepsis. Characteristics, types, etiology, pathogenesis, pathology, complications.
17. Fungal diseases (mycoses). Dermatormycosis. Visceral mycoses. Characteristics, types, etiology, pathogenesis, pathology, complications.

18. Diseases caused by protozoa and helminths. Malaria. Amoebiasis. Balantidiasis. Echinococcosis. Cysticercosis. Opisthorchiasis. Schistosomiasis. Characteristics, types, etiology, pathogenesis, pathology, complications.

Laboratory work No. 44. Occupational diseases.

Control questions:

1. General characteristics of occupational diseases.
2. Occupational diseases caused by exposure chemical production factors. Characteristics, types, etiology, pathogenesis, pathology, complications.
3. Occupational diseases caused by exposure to industrial dust (pneumoconiosis). Silicosis. Characteristics, types, etiology, pathogenesis, pathology, complications.
4. Silicatoses: asbestosis, talcosis, mica pneumoconiosis. Characteristics, types, etiology, pathogenesis, pathology, complications.
5. Metalloconioses: siderosis, aluminosis, berylliosis, titanosis, baritosis, staniosis. Characteristics, types, etiology, pathogenesis, pathology, complications.
6. Carboconioses: anthracosis and graphitosis. Characteristics, types, etiology, pathogenesis, pathology, complications.
7. Pneumoconiosis. Characteristics, types, etiology, pathogenesis, pathology, complications.
8. Occupational diseases caused by exposure to physical factors. Caisson (decompression) disease, diseases due to exposure to industrial noise (noise sickness), vibrations (vibration sickness), electromagnetic waves radio frequencies and ionizing radiation (radiation sickness). Characteristics, types, etiology, pathogenesis, pathology, complications.
9. Occupational diseases caused by overexertion. General characteristics.
10. Occupational diseases caused by exposure to biological factors.

Laboratory work No. 45. Diseases of the orofacial region.

Control questions:

1. Diseases of the hard tissues of the tooth: caries, non-carious lesions. Characteristics, types, etiology, pathogenesis, pathology, complications.
2. Diseases of the pulp and periapical tissues of the tooth: reactive changes in the pulp, pulpitis, periodontitis. Characteristics, types, etiology, pathogenesis, pathology, complications.
3. Gum and periodontal diseases: gingivitis, dental deposits, periodontitis, periodontal disease, periodontal diseases. Characteristics, types, etiology, pathogenesis, pathology, complications.
4. Diseases of the jaw: inflammatory diseases, cysts of the jaw bones, tumor-like diseases, tumors, odontogenic tumors. Characteristics, types, etiology, pathogenesis, pathology, complications.
5. Diseases of the salivary glands: sialadenitis, salivary stone disease, glandular cysts, tumors of the salivary glands, tumor-like diseases. Characteristics, types, etiology, pathogenesis, pathology, complications.
6. Diseases of the lips, tongue, and soft tissues of the oral cavity: cheilitis, glossitis, stomatitis, precancerous diseases, and tumors. Characteristics, types, etiology, pathogenesis, pathology, complications.

Laboratory work No. 46-47. Childhood infections.

Control questions:

1. Chickenpox: characteristics, types, etiology, pathogenesis, pathology, complications.

2. Measles: characteristics, types, etiology, pathogenesis, pathology, complications.
3. Polymyelitis: characteristics, types, etiology, pathogenesis, pathology, complications.
4. Diphtheria: characteristics, types, etiology, pathogenesis, pathology, complications.
5. Scarlet fever: characteristics, types, etiology, pathogenesis, pathology, complications.
6. Meningococcal infection: characteristics, types, etiology, pathogenesis, pathology, complications.

Laboratory work No. 48. Tumors in children.

Control questions:

1. General characteristics of tumors in children.
2. Dysontogenetic tumors: hemangioma, angiosarcoma, lymphangioma, lymphangiosarcoma. Characteristics, types, etiology, pathogenesis, pathology, complications.
3. Tumors from embryonic cambial tissues: embryonic rhabdomyoma, embryonic rhabdomyosarcoma, neuroblastoma, hepatoblastoma, medulloblastoma, retinoblastoma, neuroblastoma. Pathology, prognosis. the teratoma,

Laboratory work No. 49. Organization of postmortem diagnostics in institutions and departments of the pathology profile.

Control questions:

1. Regulation of the organization of pathological autopsies in federal orders and regulatory documents.
 2. The procedure for sending the corpses of deceased patients for a pathoanatomical autopsy.
 3. The procedure for conducting pathoanatomic autopsies.
- Stages of pathoanatomical examination of a corpse (procedure for postmortem diagnosis).
- Stages of postmortem macroscopic diagnosis.
 - Incisions of the body integuments, autopsy and examination of the abdominal cavity.
 - Autopsy and examination of the chest cavity.
 - Extraction of organs of the neck, thoracic and abdominal cavities in the form of a single organ complex.
 - Examination of the organs of the extracted organocomplex.
 - Study of the cardiovascular system.
 - Examination of the neck and respiratory system.
 - Examination of the genitourinary system (and adrenal glands).
 - Examination of the digestive system (and spleen).
 - Autopsy and examination of the cranial cavity.
 - Examination of the cerebral hemispheres, arachnoid and soft meninges.
 - Examination of the base of the skull. Extraction of the pituitary gland.
 - Autopsy and examination of the tympanic cavity and paranasal sinuses.
 - Examination of the base of the extracted brain.
 - Autopsy of the brain.

Laboratory work No. 50. Features of pathoanatomic autopsy of corpses of persons who died after surgical interventions, intensive care and intensive care.

Control questions:

1. Features of pathoanatomic autopsy of corpses of persons who died after surgical interventions.
2. Features of pathoanatomic autopsy of corpses of persons who died after intensive care and intensive care.

Laboratory work No. 51. Features of the pathoanatomical examination of corpses of persons who died from infectious diseases and especially dangerous infections.

Control questions:

1. General principles of pathoanatomical examination of corpses of persons who died from infectious diseases and especially dangerous infections.
2. Features of the pathoanatomical examination of corpses of persons who died from the plague.
3. Features of the pathoanatomical examination of corpses of persons who died of cholera.
4. Features of the pathoanatomical examination of corpses of persons who died from anthrax.
5. Transportation and burial of corpses.

Interview questions in the discipline "Pathological anatomy, clinical pathology anatomy"
Basic level

Introduction. The subject and methods of pathological anatomy. Damage and death cells and tissues (necrosis) Part 1

1. Introduction. The subject and methods of pathological anatomy.
2. Pathology of the cell nucleus. Pathology of mitosis..
3. Pathology of cytoplasm.
4. Cytoskeleton and cell pathology.
5. Pathology of cell junctions.
6. Cell pathology as an integrative concept.

Definition, classification, microscopic picture, mechanism of development Part 2

8. The concept of paranecrosis, necrobiosis, autolysis, apoptosis.
9. Clinical and morphological characteristics of various forms of necrosis. The essence of the concept. Damage and death of cells and tissues (necrosis)
10. Causes of death. Death: natural, violent, and death from disease.

11. Alterations. Dystrophy. Parenchymal dystrophies Part 1

12. Dystrophies as an expression of a violation of tissue (cellular) metabolism and a form of damage (alteration).
13. Dystrophies as the first reactive process in ontogenesis. General patterns of development. General patterns of development. Causes, pathogenesis characteristics and classification.

Alteration. Dystrophy. Parenchymal dystrophies Part 2

14. morphological Protein, fat, and carbohydrate parenchymal dystrophies. General patterns of development.
15. Causes, pathogenesis, morphological characteristics, classification. Protein, fat, and carbohydrates

Stromal vascular dystrophies Part 1

16. Dysproteinosis, mucoid swelling, fibrinoid swelling, amyloidosis, hyalinoses, fatty dystrophies, carbohydrate stromal vascular dystrophies

17. Stromal vascular dystrophies Part 2

18. Impaired metabolism of chromoproteins, proteinogenic pigments, lipidogenic pigments, impaired metabolism of nucleoproteins, impaired mineral metabolism. Formation of stones.

Circulatory disorders Part 1

19. Arterial and venous congestion, general venous congestion, local venous congestion, anemia, bleeding, stasis, edema, plasmorrhagia.

Circulatory disorders Part 2

20. Thrombosis: Stages of thrombosis, mechanism of development, morphology of thrombus, general and local factors of thrombosis, outcome. DIC syndrome. Stages, causes, mechanism development, outcome. Embolism: mechanism of development, types of embolisms, significance. Shock: classification, morphological picture, outcome. Violation of lymph circulation.

Increased level

1. Clinical and biological death.
2. Mechanisms of dying and signs of death.
3. Postmortem changes, their morphological characteristics.
4. Ethics of autopsy. The concept of thanatogenesis and resuscitation.
5. Death, signs of death, postmortem changes.
6. Autoimmunity. Morphology Hypersensitivity and human pathology. hypersensitivity reactions.
7. Primary and secondary immunodeficiency syndromes. HIV infection

8. Educational, Methodological, and Informational Support for the Discipline

8.1. List of Main and Additional Literature Required for Mastering the Discipline (Module)

8.1.1. List of Main Literature:

1. Paukov V.S. Pathological Anatomy: textbook. - Moscow: GEOTAR-Media, 2022. – 752 p.
2. Robbins, Cotran Pathologic Basis of Disease. 10th. – ELSEVIER, 2020. – 1500 p.

8.1.2. List of Additional Literature:

1. Harsh Mohan Textbook of Pathology, 8 ed. - JayPee Brothers India, 2018. – 1028 s.
2. Raik-Hiio Mikelsaar Study of disease. General pathology I. Introduction alteration. – Tartu, 2003.

8.2. List of Educational and Methodological Support for the Independent Work of Students in the Discipline (Module)

Bicheva, G.V. Methodological guidelines on the discipline "Pathological anatomy, clinical pathological anatomy" for students of specialty 31.05.01 General Medicine [Electronic version], Stavropol: NCFU (electronic version)

8.3. List of Resources of the Information and Telecommunications Network **Internet Required for Mastering the Discipline (Module)**

1. <http://rudocor.net/> - Medical Portal
2. <http://www.e-reading.club/> - Large Online Library
3. <http://www.pubmed.com/> - database of full-text articles on medicine
4. <http://www.spravocnikpolekarstvam.ru/> - free online reference guide
5. <https://dic.academic.ru/> - Dictionaries and encyclopedias
6. <https://www.rmj.ru/> - Russian Medical Journal
7. <https://www.studentlibrary.ru/> - EBS "Student Consultant"