

**Foundation  
evaluation tools  
by discipline «Pathological anatomy»**

Level of higher education

SPECIALITY

Field of study

31.05.01 - RF, 560001 - KR general medicine

Qualification  
*Medical doctor*

# 1. LIST OF COMPETENCES WITH INDICATION OF STAGES OF THEIR FORMATION IN THE PROCESS OF MASTERING A DISCIPLINE

Formed competencies	Planned results of training in the discipline that characterizes the stages of formation of competences	Types of assessment tools/ section code in this document
<p><b>OPK-9:</b> Able to assess morphofunctional, physiological conditions and pathological processes in the human body to solve professional problems</p>	<p><b><u>Knowledge of:</u></b></p> <ul style="list-style-type: none"> <li>- terms used in the course of pathological anatomy and basic methods of pathological anatomical study;</li> <li>- concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of disease, nosology, principles of classification of diseases;</li> <li>- essence and basic regularities of general pathological processes;</li> <li>- characteristic structural changes of internal organs in the most important human diseases;</li> </ul>	<p><b>Block A, D</b> - reproductive level tasks</p> <ul style="list-style-type: none"> <li>- oral questioning;</li> <li>- baseline test questions</li> </ul>
	<p><b><u>Skills:</u></b></p> <ul style="list-style-type: none"> <li>- substantiate the nature of the pathological process and its clinical manifestations; compare morphological and clinical manifestations of diseases at all stages of their development;</li> <li>- diagnose the causes, pathogenesis and morphogenesis of diseases, their manifestations, complications and outcomes, as well as pathomorphosis, and in the case of death, the cause of death and the mechanism of dying (thanatogenesis);</li> </ul>	<p><b>Block B, D</b> - reconstructive level tasks</p> <ul style="list-style-type: none"> <li>- solving situational tasks;</li> <li>- control questions of the final level.</li> </ul>
	<p><b><u>Expertise:</u></b></p> <ul style="list-style-type: none"> <li>- macroscopic diagnosis of pathological processes;</li> <li>- microscopic (histological) diagnosis of pathological processes;</li> <li>- skills of clinical and anatomical analysis;</li> <li>- basic technologies of information conversion: text,</li> </ul>	<p><b>Block C, D</b> - practice-oriented and/or research level tasks</p> <ul style="list-style-type: none"> <li>- microscopic - macroscopic diagnosis of pathological processes.</li> </ul>

Formed competencies	Planned results of training in the discipline that characterizes the stages of formation of competences	Types of assessment tools/ section code in this document
	table editors, Internet techniques for professional activity;	

## 2. FLOW CHART OF THE DISCIPLINE/PRACTICE

### Pathological anatomy planning sheet

Discipline of Pathological anatomy

Field of study/specialization 31.05.01. General medicine

Course/semester 3/5

Credit units (CU) 3

Title of module according to WPD	Type of control	Forms of control	Minimal credit points	Maximal credit points	Week of control
<b>Module 1</b>					
<b>Module 1. Damage, disorder of blood and lymph circulation</b>	Formative assessment	Activity, attendance, lecture notes, performance and presentation of lab works, individual work with tables, discussion of situational tasks	13	20	1-9
	Midterm examination	Oral examination	3	6	9
<b>Module 2</b>					
<b>Module 2. Inflammation. Adaptation. Compensatory-adaptive processes.</b>	Formative assessment	Activity, attendance, lecture notes, performance and presentation of lab works, individual work with tables, discussion of situational tasks, writing of reports	9	16	10-14
	Midterm examination	Oral examination	3	6	14
<b>Module 3</b>					

<b>Module 3. Tumors</b>	Formative assessment	Activity, attendance, lecture notes, performance and presentation of lab works, individual work with tables, discussion of situational tasks, reports	9	16	15-18
	Midterm examination	Oral examination	3	6	
Total			40	70	
Midpoint assessment			20	30	
Summative assessment			60	100	

### Pathological anatomy planning sheet

Discipline of Pathological anatomy

Field of study/specialization 31.05.01. General medicine

Course/semester 3/6

Credit units (CU) 4

Reporting: examination

Title of module according to WPD	Type of control	Forms of control	Minimal credit points	Maximal credit points	Week of control
<b>Module 1</b>					
<b>Module 4.</b> <b>SISTEMIC PATHOLOGY (Part I)</b>	Formative assessment	Activity, attendance, lecture notes, performance and presentation of lab works, individual work with tables, discussion of situational tasks	8	14	24-27
	Midterm examination	Oral examination	2	4	27
<b>Module 2</b>					
<b>Module 5.</b> <b>SISTEMIC PATHOLOGY (Part II)</b>	Formative assessment	Activity, attendance, lecture notes, performance and presentation of lab works, individual work with tables, discussion of situational tasks, writing of reports	8	14	28-31
	Midterm examination	Oral examination	2	4	31
<b>Module 3</b>					

<b>Module 6.</b> Infectious Diseases	Formative assessment	Activity, attendance, lecture notes, performance and presentation of lab works, individual work with tables, discussion of situational tasks, reports	8	13	32-38
	Midterm examination	Oral examination	2	4	38
Module 4					
<b>Module 7.</b> SYSTEMIC PATHOLOGY (Part IV)	Formative assessment	Activity, attendance, lecture notes, performance and presentation of lab works, individual work with tables, discussion of situational tasks reports	8	12	39-41
	<b>Midterm examination</b>	Oral examination	2	5	41
<b>Total</b>			40	70	
<b>Midpoint assessment (exam)</b>			20	30	
<b>Summative assessment</b>			60	100	

### 3. STANDARD CONTROL TASKS AND OTHER MATERIALS NECESSARY FOR ASSESSING THE PLANNED LEARNING OUTCOMES OF THE DISCIPLINE/PRACTICUM (ASSESSMENT TOOLS)

#### Block A

##### A. 1. Survey questions

##### CONTROL QUESTIONS FOR SEMESTER 5:

##### UNIT 1: KNOW:

1. Pathological anatomy: definition, content, tasks, methods and
2. objects, levels of study of pathological anatomy.
3. Death: definition, classification (depending on the cause), stages of thanatogenesis.
4. Death: definition, signs of clinical and biological death. 5. Necrosis: definition, morphogenesis, morphology.
6. Necrosis: definition, classification by pathogenesis. Clinical and anatomical forms of necrosis. Outcomes of necrosis.
7. Necrosis: definition, clinical and morphological forms: coagulation and colliquation necrosis, morphology, outcome, functional significance.
8. Necrosis: definition, clinical and morphological forms: gangrene, sequestrum, morphology, outcome, functional significance.
9. Necrosis: definition. Clinical and morphological forms: infarction. Classification by form and appearance. Outcomes of infarcts, functional significance.
10. Dystrophies: definition, classification, morphogenesis.
11. Dystrophies: definition, parenchymatous protein dystrophies (hyaline drop, hydropic, horny), morphogenesis, morphology, functional significance, outcomes.

12. Dystrophies: definition, parenchymatous fatty dystrophies. Morphogenesis, morphology, functional significance, outcomes.
13. Dystrophies: definition, parenchymatous carbohydrate dystrophies. Morphogenesis, morphology, functional significance, outcomes.
14. Dystrophies: definition, stromal vascular protein dystrophies. Morphogenesis, morphology, functional significance, outcomes.
15. Dystrophies: definition, stromal vascular fatty dystrophies. Morphogenesis, morphology, functional significance, outcomes.
16. Dystrophies: definition, stromal vascular carbohydrate dystrophies. Morphogenesis, morphology, functional significance, outcomes.
17. Dystrophies: definition. Mixed dystrophies: classification of chromoproteins. Disorder of haemosiderin metabolism, morphology, functional significance.
18. Dystrophies: definition. Mixed dystrophies: classification of chromoproteins. Bilirubin metabolism disorder, morphogenesis, morphology, functional significance.
19. Dystrophies: definition. Mixed dystrophies: classification of chromoproteins. Disorder of proteinogenic pigments metabolism: classification, morphology, functional significance.
20. Dystrophies: definition. Mixed dystrophies: disorder of nucleoprotein metabolism: classification, morphogenesis, morphology, functional significance.
21. Dystrophies: definition. Mixed dystrophies: mineral dystrophies: disorder of calcium metabolism (calcification), pathogenesis. Stone formation: functional significance.
22. Circulatory disorders: classification. Arterial hemorrhage: general and local, physiological and pathological, morphology, functional significance.
23. Circulatory disorders: acute general venous haemorrhage. Etiology, morphology, functional significance.
24. Circulatory disorders: chronic common venous hypertension. Etiology, morphogenesis, morphology, outcomes, functional significance (liver, kidney, spleen, lung, skin).
25. Circulatory disorders: local venous hypertension, etiology, morphogenesis, morphology, outcomes, functional significance.
26. Circulatory disorders: haemorrhage. Definition, classification by source of bleeding and by cause. Morphogenesis, functional significance, outcomes.
27. Circulatory disorders: shock. Definition, etiology, patho-morphogenesis types, morphology. 'Shock' organs.
28. Circulatory disorders: stasis. Definition, etiology, pathogenesis, pathogenesis, morphology, outcomes.
29. Circulatory disorders: thrombosis. Definition, pathogenesis (local and common factors), thrombus morphology (differences from postmortem blood clot), functional significance, outcomes.
30. Circulatory disorders: thrombosis. Definition, classification of thrombus (in appearance, in relation to the vessel lumen), functional significance, outcomes.
31. Circulatory disorders: thrombosis. Definition. Syndromes in which thrombosis is a trigger factor (thromboembolic syndrome, DIC).

32. Circulatory disorders: embolism. Definition. Types of emboli depending on the direction of embolus movement. Distinguish embolus from thrombus and postmortem blood clot.
33. Circulatory disorders: embolism. Definition, types of emboli. Diagnosis of air embolism in the section.
34. Circulatory disorders: anaemia (ischaemia). Definition, classification, morphogenesis, morphology, functional significance, outcomes.
35. Lymph circulation disorders. Definition, classification, morphogenesis, morphology, functional significance, outcomes.
36. Violation of tissue fluid content. Definition, classification, morphogenesis, morphology, functional significance, outcomes.

## **Block D**

List of questions and tasks for the intermediate certification (examination):

*Questions to check the level of training KNOW:*

1. Pathological anatomy: definition, content, tasks, methods and objects, levels of pathological anatomy.
2. Death: definition, thanatogenesis, death signs, postmortem alterations
3. Necrosis: definition, morphogenesis, morphology, pathogenesis. Clinical - anatomical forms of necrosis. Outcomes of necrosis.
4. Necrosis: definition, clinical morphological forms: coagulatory and collicative necrosis, morphology, outcome, functional value.
5. Necrosis: definition, clinical morphological forms: gangrene, sequester, morphology, outcome, functional value.
6. Necrosis: a definition. Clinical morphological forms: heart attack. Classification by shape and appearance. Outcomes of heart attacks, functional value.
7. Circulatory disorders: classification. Arterial fullness: general and local, physiological and pathological, morphology, functional value.
8. Circulatory disorders: acute common venous fullness. Etiology, morphology, functional meaning.
9. Circulatory disorders: Chronic common venous fullness. Etiology, morphogenesis, morphology, outcomes, functional value (liver, kidneys, spleen, lungs, skin).
10. Circulatory disorders: local venous fullness, etiology, morphogenesis, morphology, outcomes, functional value.
11. Circulatory disorders: bleeding. Definition, classification by source of bleeding and cause. Morphogenesis, functional value, outcomes.

12. Circulatory disorders: shock. Definition, etiology, patho-morphogenesis species, morphology. «shock» organs.
13. Circulatory disorders: Stas. Definition, etiology, pathogenesis, morphology, outcomes.
14. Circulatory disorders: thrombosis. Definition, pathogenesis (local and general factors), morphology of clot, functional value, outcomes.
15. Circulatory disorders: thrombosis. Definition, classification of clots (by appearance, relative to the lumen of the vessel), functional value, outcomes.
16. Circulatory disorders: thrombosis. Definition. Syndromes in which thrombosis is a starting factor (thromboembolic syndrome, DIC).
17. Circulatory disorders: Embolism. Definition. Types of embolism depending on the direction of the embolism movement. The difference between an embolus and a blood clot.
18. Circulatory disorders: embolism. Definition, types of embolus. Diagnosis of air embolus on the section.
19. Circulatory disorders: anaemia (ischemia). Definition, classification, morphogenesis, morphology, functional value, outcomes.
20. Dystrophies: definition, classification, morphogenesis.
21. Dystrophy: Definition, parenchymatic protein dystrophy (hyalin-drip, hydropic, horn), morphogenesis, morphology, functional value, outcomes.
22. Dystrophies: definition, parenchymatic fat dystrophies. Morphogenesis, morphology, functional value, outcomes.
23. Dystrophies: definition, parenchymatic carbohydrate dystrophies. Morphogenesis, morphology, functional value, outcomes.
24. Dystrophies: Definition, stromal-vascular protein dystrophies. Morphogenesis, morphology, functional value, outcomes.
25. Dystrophies: Definition, stromal-vascular fat dystrophies. Morphogenesis, morphology, functional value, outcomes.
26. Dystrophies: definition, stromal-vascular carbohydrate dystrophies. Morphogenesis, morphology, functional value, outcomes.
27. Dystrophies: Definition. Mixed dystrophies: classification of chromoproteins. Haemoiderine metabolism disorder, morphology, functional value.
28. Dystrophy: a definition. Mixed dystrophy: chromoprotein classification. Abnormality of bilirubin metabolism, morphogenesis, morphology, functional value.
29. Dystrophies: Definition. Mixed dystrophy: chromoprotein classification. Metabolic disorders of protein pigments: classification, morphology, functional value.

30. Dystrophies: Definition. Mixed dystrophy: nucleoprotein metabolism disorder: classification, morphogenesis, morphology, functional value.
31. Dystrophies: definition. Mixed dystrophies: mineral dystrophies: calcium metabolism disorder (calcification), pathogenesis. Formation of stones: functional value.
32. Inflammation: definition, etiology, classification, morphogenesis.
33. Exudative inflammation: definition, classification, etiology, morphogenesis, morphology, functional value.
34. Inflammation: Definition. Exudative inflammation: Serous, purulent and haemorrhagic inflammation: morphology, functional value, outcomes.
35. Inflammation: Definition. Exudative inflammation: Fibrinosis, rot, catarrhal and mixed inflammation: morphology, functional value, outcomes.
36. Inflammation: Definition. Proliferative (productive) inflammation: Intermittent (interstitial) inflammation, inflammation with the formation of polyps and terminal scrap: morphology, functional value, outcomes.
37. Inflammation: Definition. Proliferative (productive) inflammation: Granulomatous inflammation: morphology, functional value, outcomes.
38. Adjustment and compensation processes. Atrophy: physiological and pathological, general and local: morphology, functional value, outcomes.
39. Adjustment and compensation processes. Hypertrophy, hyperplasia: classification, morphology, functional value, outcomes.
40. Adjustment and compensation processes. Organization and restructuring of tissues, metaplasia and dysplasia: morphology, functional value, outcome.
41. Adjustment and compensation processes. Compensation phases. Compensatory hypertrophy: morphology, functional value.
42. Adjustment and compensation processes. Regeneration: definition, levels, shapes, morphogenesis, classification.
43. Adjustment and compensation processes: regenerative regeneration: types, functional value.
44. Adjustment and compensation processes. Types of wound healing.
45. Tumors: definition, development theories, morphogenesis. WHO classification of tumors
46. Tumors: definition, tumor property, structure, morphological atypism, tumor growth.
47. Tumors: determination, differentiation of benign tumors from malignant ones. Tumors with local destructive growth.
48. Tumors: definition, organonespecific benign epithelial tumors: morphology.
49. Tumors: definition, organonespecific malignant epithelial tumors: morphology.

50. Tumors: definition. Benign mesenchymal tumors: morphology.
51. Tumors: a definition. Malignant mesenchymal tumors: morphology.
52. Tumors: definition. Tumors of melanin-forming tissue: morphology.
53. Diseases of the cardiovascular system. Atherosclerosis: definition, etiology, pathogenesis, morphogenesis.
54. Diseases of the cardiovascular system. Atherosclerosis: definition, etiology, pathogenesis, clinical anatomical forms.
55. Diseases of the cardiovascular system. Ischemic heart disease: definition, etiology, classification. Acute IBS.
56. Diseases of the cardiovascular system. Ischemic heart disease: definition, etiology, classification. Chronic IBS.
57. Diseases of the cardiovascular system. Hypertensive disease: definition, etiology, pathoanatomy of acute and chronic forms.
58. Diseases of the cardiovascular system. Hypertensive disease: definition, etiology
59. Diseases of the cardiovascular system. Hypertensive disease: definition, etiology, clinical morphological forms.
60. Cerebrovascular diseases: definition, etiology and pathogenesis, morphogenesis.
61. Crude pneumonia, definition of concept, etiology, pathogenesis, morphogenesis, Zinzerling, morphology, complications, outcomes, cause of death.
62. Focal pneumonia. Definition of concept, clinical anatomical essence, classification, etiology, pathogenesis. Differential diagnosis of staphylococcal, streptococcal pneumonia. Complications, outcomes, causes of death of patients.
63. Gastrointestinal diseases. Acute and chronic gastritis: definition, etiology, pathogenesis, classification, morphology.
64. Gastrointestinal diseases. Gastric ulcerative disease: definition, etiology, pathogenesis, pathoanatomy.
65. Gastrointestinal diseases. Appendicitis: definition, etiology, pathogenetic theories, pathoanatomy of acute and chronic forms, complications.
66. Liver diseases. Hepatitis: definition, etiology, pathogenesis, pathoanatomy of acute and chronic forms, outcomes.
67. Liver disease. Hepatosis: Definition. Toxic liver dystrophy.
68. Liver disease. Hepatosis: Definition. Fat hepatosis.
69. Liver diseases. Cirrhosis: definition, etiology, classification, morphogenesis, morphology. Signs of portal hypertension. Complications and causes of death.

70. Liver diseases. Cirrhosis: definition, morphogenic types of cirrhosis, signs of hepatocellular insufficiency. Complications and causes of death.
71. Kidney diseases. Glomerulopathy: glomerulonephritis. Definition, etiology, pathogenesis, classification by topography and morphology.
72. Kidney diseases. Glomerulopathy: glomerulonephritis. Definition, etiology, pathogenesis, classification depending on the nature of the current.
73. Kidney disease. Tubulopathy: acute renal failure. Definition, etiology, pathogenesis, pathoanatomy. Complications, outcomes.
74. Kidney diseases. Chronic kidney failure: definition, etiology, morphology, functional value.
75. Kidney diseases. Interstitial kidney diseases: pyelonephritis. Definition, etiology, pathogenesis, acute and chronic pathology, complications, outcomes.
76. Infectious diseases: classification, clinical morphological differences from non-communicable diseases.
77. Tuberculosis. Primary tuberculosis complex: localization, morphology, function value, outcome.
78. Tuberculosis. Primary tuberculosis: variants of the flow of the primary tuberculosis complex, functional value of the hearths of Gon.
79. Tuberculosis. Hematogenic pulmonary tuberculosis: current, morphology.
80. Chronic disseminated pulmonary tuberculosis: morphology.
81. Hematogenic tuberculosis with extrapulmonary (organ) lesions: options, complications, outcomes.
82. Secondary pulmonary tuberculosis: form-phase, fibrosis-cavernous tuberculosis: localization, morphology. Causes of death.
83. Infectious diseases. Sepsis: determination, clinical-morphological distinctive signs of sepsis from other infectious diseases.
84. Infectious diseases. Sepsis: septic bacterial endocarditis. Definition, etiology, pathogenesis, morphology, outcomes, causes of death.
85. Infectious diseases. Sepsis: septicemia. Definition, pathogenesis, morphology, outcomes, causes of death.
86. Infectious diseases. Sepsis: septicemia. Determination, pathogenesis, morphology, outcomes, causes of death.
87. Infectious diseases. Syphilis: definition, etiology, pathogenesis, classification.
88. Infectious diseases. Syphilis: primary period, pathogenesis, morphology, outcomes, functional significance (epidemiology).
89. Infectious diseases. Syphilis: secondary period, pathogenesis, morphology, outcomes, functional significance (epidemiology).

90. Infectious diseases. Syphilis: tertiary period, pathogenesis, morphology, outcomes, functional significance (epidemiology).
91. Childhood bacterial infections. Diphtheria: definition, etiology, pathogenesis, clinical morphological forms, outcomes, complications, causes of death.
92. Childhood bacterial infections. Scarletina: definition, etiology, pathogenesis, periods of disease, morphology, complications, causes of death.
93. Childhood bacterial infections. Meningococcal infection: definition, etiology, pathogenesis, clinical morphological forms, morphology, complications, causes of death.
94. Highly dangerous infections. Definition of concept. Plague: etiology, pathogenesis, clinical morphological forms, morphology, causes of death
95. Highly dangerous infections. Natural smallpox: etiology, pathogenesis, clinical morphological forms, morphology, causes of death.
96. Particularly dangerous infections. Anthrax: etiology, pathogenesis, clinical morphological forms, morphology, causes of death
97. Highly dangerous infections. Cholera: etiology, pathogenesis, clinical morphological forms, pathology, complications, causes of death
98. Intestinal infections. Salmonellosis: etiology, pathogenesis, clinical morphological forms, morphology, complications, causes of death
99. Intestinal infections. Dysentery: etiology, pathogenesis, clinical morphological forms, morphology, complications, causes of death
100. Intestinal infections. Typhoid fever: etiology, pathogenesis, clinical morphological forms, morphology, complications, causes of death.
101. Rheumatic diseases. General characteristic, classification.
102. Rheumatic diseases. Rheumatism: etiology, pathogenesis, clinical anatomical forms. Complications, causes of death.
103. Rheumatic diseases. Rheumatic endocarditis: clinical anatomical forms, morphology, complications, outcomes.
104. Rheumatic diseases. Rheumatism: rheumatic myocarditis, clinical morphological forms, morphology, complications, outcomes, causes of death.
105. Rheumatic diseases. Rheumatism: rheumatic pericarditis, clinical anatomical forms, morphology, complications, outcomes, causes of death.
106. Viral infections. Features. Influenza: etiology, pathogenesis, clinical morphological forms along the course, complications, outcomes, causes of death.
107. Viral infections. Parainfluenza, RS infection, adenovirus infection: etiology, pathogenesis, complications, causes of death.

108. Endocrine diseases. Diabetes mellitus: definition, pathomorphogenesis. Macro-microangiopathy, complications, outcomes.

#### **TASKS TO CHECK THE LEVEL OF LEARNING TO BE ABLE AND MASTER:**

From a given list of preparations, describe the pattern of a microscopic preparation according to the following points:

1. Recognise pathomorphological changes of organs in the most important human diseases.
2. describe the morphological changes of the studied micro preparations
3. Formulate a conclusion about the pathological process based on the totality of pathomorphological changes.
4. Give a comparative assessment of morphological changes in different forms of pathological process.
5. Tell about the mechanism of development of morphological changes occurring in organs and tissues in the pathological process, its significance for the organism.
6. Skills of microscopy of pathohistological preparations.
7. Skills of sketching pathohistological preparations

#### **SCHEME FOR MICROSCOPIC DESCRIPTION OF THE PREPARATION**

1. Name the tissue or organ in the micro specimen
- 2 Identify the criteria for a process at the cellular level;
3. Relate and consistently summarise the changes detected in a histological diagnosis;
3. Explain the mechanism of the process and evaluate its functional significance.

The students' algorithm of actions should be as follows:

- Viewing the micro preparation at low magnification of the microscope has the purpose of: a) Examining the entire area of the slice by moving it along the steps; b) Determining the method of staining the preparation;
- c) Determination of normal structures of an organ, tissue;
- d) Identification of localisation and nature of the main structural changes of the organ and tissue;
- e) Preliminary diagnosis of the process on the basis of summarising the obtained data
- Viewing the preparation at high magnification of the microscope is aimed at: a) Detailed viewing of all components of the organ with structural changes;
- b) Final diagnosis of the pathological process.

#### **LIST OF MICRODRUGS GENERAL PATHANATOMY**

Necrosis

1. tuberculous leptomeningitis
2. Necrosis of the renal tubule epithelium
3. necrosis of the epithelium of the renal convoluted tubules
4. myocardial infarction.

## Dystrophies

1. thyroid struma basedovae of the thyroid gland
2. brown induration of the lungs
3. Hyalinosis of the cortical substance of the adrenal gland
4. Fatty dystrophy of the liver
5. Gouty bump
6. Hydropic dystrophy of the renal epithelium
7. Gouty bump
8. Gout

## Circulatory disorders

1. Diapedesis haemorrhages of the brain
2. Cyanotic induration of the spleen.
3. brown induration of the lungs
4. Haemorrhagic infiltration of the uterine mucosa
5. embolic brain abscess.
6. Haemorrhagic infarction
7. Haemorrhagic infarction of the lung
8. Brain haemorrhage
9. Brown induration of the lung

## Inflammation

1. Syphilitic gumma of the aorta
2. Gigantocellular hepatitis
3. pulmonary tuberculosis
4. chronic cholecystitis with exacerbation
5. Phlegmonous appendicitis
6. Tuberculous meningitis
7. Tuberculous lymphadenitis
8. Encephalitis
9. Tuberculous pneumonia microbial oedema with transition to oedema
10. Pneumonia obliterans grey oedema
11. Gigantocellular hepatitis
12. Purulent omphalitis

## Compensatory and adaptive processes

1. Cardiosclerosis

## Tumours

2. Dermoid cyst
3. Spindle cell sarcoma
4. uterine adenocarcinoma
5. Cancer metastasis to the lung
6. Cystic tumour of the ovary
7. Melanoma.
8. Schwannoma (neurilemmoma)
9. Squamous cell neorhoving cancer
10. Squamous cell lung cancer
11. poorly differentiated adenocarcinoma

12. Renal cell carcinoma
13. Metastasis of adenocarcinoma to the liver
14. Hibernoma.
15. Squamous cell keratinising cancer
16. Angiofibroma
17. Basalioma
18. Melanoma
19. chondrosarcoma
20. Adenocarcinoma
21. Adenofibroma
22. Haemangioma of mixed type
23. Papilloma of the skin

### **System pathology**

#### Atherosclerosis

1. atherosclerotic plaque

#### Ischaemic heart disease

1. Cardiosclerosis
2. myocardial infarction

#### Diseases of the Cardiovascular System

1. Cardiosclerosis
2. myocardial infarction

#### Cerebrovascular diseases

1. Haemorrhagic infarction

#### Rheumatism

1. Rheumatic myocarditis

#### Liver

1. Botkin's disease. Pericholangic form
2. Gigantocellular hepatitis
3. Gigantocellular hepatitis.

#### Kidneys

1. Hydropic dystrophy of renal epithelium
2. Necrosis of the epithelium of twisted tubules of the kidney

#### Gastrointestinal diseases

1. chronic gastric ulcer
2. Phlegmonous appendicitis

#### Tuberculosis

1. Miliary tuberculosis of the lung
2. tuberculous leptomeningitis
3. tuberculosis of the spleen
4. tuberculosis of the liver
5. Tuberculous meningitis
6. Tuberculous lymphadenitis
7. Tuberculoma in the lung

#### Sepsis

1. embolic abscess of the brain

Influenza

1. Abscessive pneumonia in influenza 1.

Diseases of endocrine glands

Thyroid 1. Basedema struma of the thyroid gland Diseases of the haematopoietic system 2. Lymph node in myeloid leukaemia

3 Leukaemic infiltration of the liver in myeloid leukaemia Diseases of the lungs

1. Tuberculous pneumonia - microbial oedema with transition to oedema

2. Severe pneumonia - grey oedema

Perinatal pathology

1. amniotic fluid aspiration

2. Neonatal SDR, hyaline membranes

#### **4. METHODOLOGICAL MATERIALS DEFINING THE PROCEDURES OF ASSESSMENT OF KNOWLEDGE, SKILLS, COMPETENCES AND (OR) EXPERIENCE OF ACTIVITY CHARACTERISING THE STAGES OF COMPETENCES FORMATION**

#### **DESCRIPTION OF INDICATORS AND CRITERIA OF COMPETENCES ASSESSMENT, DESCRIPTION OF ASSESSMENT SCALES**

#### **EVALUATION SCALES OF CURRENT CONTROL**

##### **Frontal interview (current control)**

<b>№</b>	<b>Indicator Name</b>	<b>Mark (in %)</b>
1.	Active participation	0 - 10
2.	Understanding of the basic morpho-functional mechanisms of development of pathological processes	0 - 40
3.	Justified interpretation of the mechanisms, their influence on the structure of the organ, their functional significance on the organism	0 - 30
4.	Key words (competent use of terms, their understanding and meaning)	0 - 10
5.	Logicality and consistency of the answer on the given topic	0 - 10
<b>Activity assessment (current control)</b>		<b>Sum of points</b>

##### **Outline (current control)**

<b>№</b>	<b>Indicator Name</b>	<b>Mark (in %)</b>
<b>OUTLINE QUALITY</b>		
1	The content of the outline should correspond to the indicated boxes	0 - 30

2	Completeness and quality of disclosure of the topic in the specified columns	0 - 50
3	Independent performance of work, use of recommended and reference literature	0 - 20
<b>Assessment for the completion of the outline (current control)</b>		<b>Sum of points</b>

### **Work with microslides (current control– «Skills and Expertise»)**

<b>№</b>	<b>Indicator Name</b>	<b>Mark (in %)</b>
1.	Name the tissue or organ in the microrepair, name the method of coloring	<b>0 - 20</b>
2.	Locate pathological process	<b>0 - 30</b>
3.	Sketch and denote the characteristic morphology of this pathological process	<b>0 - 20</b>
4.	List criteria for microscopic diagnosis of this pathological process	<b>0 – 20</b>
5.	Outcomes and Functional value	<b>0 – 10</b>
<b>Assessment for work with microslides (current control)</b>		<b>Sum of points</b>

### **Test grading scale (current control)**

1. One test task contains 10 closed questions.
2. Ready-made answers are given for the tasks to choose from.
3. Each correct answer is worth – 10 points
4. The overall score is determined as the sum of the points scored.
5. Mark (in %).

### **RATING SCALE FOR REPORT WITH PRESENTATION**

**(current control, classes conducted in the form of interactive)**

<b>№</b>	<b>Indicator Name</b>	<b>Mark (in %)</b>
<b>FORMAT</b>		<b>10</b>
1	Dividing the text into introduction, main part and conclusion	<b>0-5</b>
2	Logical and clear transition from one part to another, as well as within parts	<b>0-5</b>
<b>CONTENT</b>		<b>50</b>
1	Matching theme	<b>0-10</b>
2	The presence of the main topic (thesis) in the introductory part and the introductory part being addressed to the reader	<b>0-10</b>
3	Development of the topic (thesis) in the main part (disclosure of the main provisions through a system of arguments supported by facts, examples, etc.)	<b>0-15</b>
4	The presence of conclusions corresponding to the topic and content of the main part	<b>0-15</b>
<b>PRESENTATION</b>		<b>25</b>
1	Title page with heading	<b>0-2</b>

2	Slide design and use of additional effects (slide changing, sound, graphics)	<b>0-5</b>
3	The text of the presentation is written briefly, well and the ideas formed are clearly presented and structured	<b>0-10</b>
4	Slides are presented in a logical sequence	<b>0-5</b>
5	Slides printed in note format	<b>0-3</b>
<b>REPORT</b>		<b>15</b>
1	Correctness and accuracy of speech during defense	<b>0-5</b>
2	Breadth of horizons (answers to questions)	<b>0-5</b>
3	Implementation of regulations	<b>0-5</b>
<b>Total points</b>		<b>Sum of points</b>

### **ABSTRACT GRADING SCALE**

<b>№</b>	<b>Indicator Name</b>	<b>Mark (in %)</b>
<b>FORMAT</b>		<b>10</b>
1	Dividing the text into introduction, main part and conclusion	<b>0-5</b>
2	Logical and clear transition from one part to another, as well as within parts	<b>0-5</b>
<b>CONTENT</b>		<b>50</b>
1	Relevance of the research topic;	<b>0-10</b>
2	Compliance of the content with the topic;	<b>0-10</b>
3	Depth of material development	<b>0-15</b>
4	The presence of conclusions corresponding to the topic and content of the main part	<b>0-15</b>
<b>PAPERWORK</b>		<b>25</b>
1	Title page with heading	<b>0-5</b>
3	The text of the abstract is written according to the methodological instructions	<b>0-10</b>
4	Correctness and completeness of use of literature	<b>0-10</b>
<b>ABSTRACT DEFENSE</b>		<b>15</b>
1	Literacy of presentation and terminology of the material	<b>0-5</b>
2	The quality of the message and answers to questions when defending an abstract	<b>0-5</b>
3	Implementation of regulations	<b>0-5</b>
<b>Total points</b>		<b>Sum of points</b>

### **Situational task scale (terminal control)**

<b>№</b>	<b>Indicator Name</b>	<b>Mark (in %)</b>
1.	Make a pathological diagnosis	0 - 10
2.	Name the clinical and anatomical form of the process	0 - 10
3.	Indicate the flow of the process	0 - 10
4.	Assess the functional significance of this process for the organism as a whole	0 - 10

5.	List complications and causes of death	0 - 10
<b>Total points</b>		<b>Sum of points</b>

**Note: the midterm control contains a ticket with two situational tasks, each worth 50%**

### **RATING SCALE FOR INTERMEDIATE CONTROL (EXAMINATION)**

1. Structure of the exam paper
2. Definition of the concept, etiology, pathogenesis, clinical and anatomical forms, morphogenesis and morphology, generally typical processes (know)
3. Definition of the concept, etiology, pathogenesis, clinical and anatomical forms, morphogenesis and morphology, of a specific nosological disease (know)
4. Definition of the concept, etiology, pathogenesis, clinical and anatomical forms, morphogenesis and morphology of a specific infectious disease (know)
5. Diagnose microscopically the pathological process, the mechanism of development and the functional significance of the pathology (be able to, master).

<b>№</b>	<b>Indicator name</b>	<b>Mark in points</b>
1	1st question	0-20
2	2nd question	
3	3rd question	
4	Microslide	0 – 10
<b>Assessment for implementation (current control)</b>		<b>Sum of points</b>

Criteria for assessing students' knowledge in the discipline (intermediate control).

In the exam, a student can receive a maximum number of points - 30.

The student may receive the following grades based on demonstrated knowledge:

- 26-30 points – uses terms from the pathological anatomy course and knows the basic methods of pathological examination; excellent knowledge of etiology, pathogenesis, morphogenesis, pathomorphosis of diseases, nosology, principles of classification of diseases, deeply understands the essence and basic patterns of general pathological processes; understands the characteristic changes in internal organs. Excellently substantiates the nature of the pathological process and its clinical manifestations and compares the morphological and clinical manifestations of diseases. Possesses the skills of microscopic diagnosis of pathological processes, as well as the skills of clinical and anatomical analysis.

- 21-25 points – uses terms from the pathological anatomy course and knows the basic methods of pathological examination; insufficiently deep knowledge about the etiology, pathogenesis, morphogenesis, pathomorphosis of diseases, nosology, principles of classification of diseases; is well versed in the essence and basic patterns of general pathological processes; well versed in the characteristic changes of internal organs. It does not substantiate the nature of the pathological process and

its clinical manifestations; it does not sufficiently compare the morphological and clinical manifestations of diseases. Does not have sufficiently deep knowledge of the skills of microscopic diagnosis of pathological processes, as well as the skills of clinical and anatomical analysis.

- 16-20 points – does not use terms from the pathological anatomy course well enough and does not know the basic methods of pathological examination; poor knowledge of the etiology, pathogenesis, morphogenesis, pathomorphosis of diseases, nosology, principles of classification of diseases; not very well versed in the essence and basic patterns of general pathological processes. Does not substantiate the nature of the pathological process and its clinical manifestations and does not compare the morphological and clinical manifestations of diseases. Does not have sufficient skills in microscopic diagnosis of pathological processes, as well as clinical and anatomical analysis skills.

- 10-15 points - poorly uses terms from the pathological anatomy course and does not know the basic methods of pathological examination; poorly understands the essence and basic patterns of general pathological processes; poorly understands the characteristic changes in internal organs. Does not substantiate the nature of the pathological process and its clinical manifestations and does not compare the morphological and clinical manifestations of diseases. He has poor skills in microscopic diagnosis of pathological processes, and does not have the skills of clinical and anatomical analysis.

- 0 points - the student did not answer any questions from the ticket. After the proposed second (additional) ticket and appropriate preparation for the answer, he also did not demonstrate knowledge of this ticket. A student who does not appear for the exam receives “0” points.

## **5. METHODOLOGICAL INSTRUCTIONS FOR STUDENTS ON MASTERING DISCIPLINE/PRACTICE AND COMPLETING CONTROL TASKS**

**MODULAR DISCIPLINE CONTROL INCLUDES:**

1. Current control: mastering educational material in classroom classes (lectures, practical sessions, including attendance and activity) and completing mandatory tasks for independent work
2. Midterm control: checking the completeness of knowledge and skills on the material of the module as a whole. Completion of modular control tasks is carried out in writing and is a mandatory component of modular control.
3. Intermediate control - completed documented part of the academic discipline (6th semester - exam)

**BASIC REQUIREMENTS FOR CURRENT CONTROL.**

To understand the material and assimilate it well, the following sequence of actions is recommended:

1. After listening to the lecture and finishing the classes, in preparation for the next day's classes, you must first review and think about the text of the lecture.
2. During the week, choose a time to work with the recommended literature.

3. In preparation for the next day's practical classes, you must first read the basic concepts and approaches to the homework topic. When completing a task, you must first understand what is required, what theoretical material needs to be used, and outline a solution plan.

4. Control over students' assimilation of the discipline's curriculum material is carried out systematically by the department's teacher and is reflected in the teacher's journal in points. A student who receives an unsatisfactory grade on the current material is required to prepare this section and respond to the teacher on it during an individual interview. In case of a frontal survey, an unsatisfactory assessment must be processed within a month from the date of its receipt.

5. Making up for missed classes Making up for lectures: - each lecture missed by a student is compulsory - the student must provide a lecture note and an abstract of 6-10 pages of handwritten text on the topic of the missed lecture - answer additional questions on the missed topic Working out practical classes: - each lesson missed by a student is compulsory. Workouts are carried out according to the department's schedule, agreed with the dean's office. - missed classes must be made up within 10 days from the date of absence; no more than one lesson per day is made up. - a student who has not completed his pass within the established time frame is allowed to attend regular classes only with permission from the dean or his deputy in writing. It is not permitted to exclude students who are poorly prepared for these classes from the next practical lesson. - for students who missed practical classes due to a long-term illness, work should be carried out after permission from the dean's office according to an individual schedule agreed with the department. - In exceptional cases (participation in interuniversity conferences, competitions, olympiads, duty, etc.), the dean and his deputy, in agreement with the department, may exempt students from making up some missed classes.

#### EXAMPLE OF SOLUTION TO A SITUATIONAL PROBLEM:

At the autopsy of a patient who died of chronic renal failure, changes in the heart were discovered: the leaves of the cardiac membrane are dull, the epicardium has gray overlays in the form of easily removable films. The epicardium is congested, with an abundance of pinpoint hemorrhages.

- 1) Diagnose the pathological process in the serosa of the heart
- 2) Give a figurative name for the heart.
- 3) Specify the type of inflammation
- 4) What auscultatory sign is characteristic of this lesion?
- 5) Indicate options for a favorable outcome of the process.

Answer:

1. Fibrinous pericarditis
2. "Hairy Heart"
3. Exudative inflammation
4. Pericardial friction rub

METHODOLOGICAL RECOMMENDATIONS FOR INDEPENDENT EXTRACURRICULAR WORK OF STUDENTS IN STUDYING THE

## THEORETICAL FOUNDATIONS OF THE DISCIPLINE PATHOLOGICAL ANATOMY

The study of the theoretical part of the disciplines is intended not only to deepen and consolidate the knowledge acquired in classroom classes, but also to contribute to the development of students' creative skills, initiative and organize their time. Independent work when studying disciplines includes: - students reading recommended literature and mastering the theoretical material of the discipline; - familiarity with Internet sources; - preparation for various forms of control (tests, situational tasks); - preparation and writing of reports; - preparing answers to questions on discipline topics in the sequence in which they are presented. It is best for students to plan the time needed to study disciplines throughout the semester, while providing for regular repetition of the material. The material outlined in lectures must be regularly reviewed and supplemented with information from other sources of literature, presented not only in the discipline program, but also in periodicals. When studying a discipline, it is necessary to read the recommended literature for each topic and draw up a brief summary of the main provisions, terms, information that requires memorization and is fundamental in this topic for mastering subsequent topics of the course. To expand knowledge in the discipline, it is recommended to use Internet resources; conduct searches in various systems and use materials from sites recommended by the teacher. When preparing for tests and solving situational problems, you must read the relevant pages of the main textbook. It is also advisable to read additional literature. When performing independent work on writing a report, the student must: read theoretical material in recommended literature, periodicals, and on Internet sites; creatively process the studied material and present it for reporting in the form of a report, illustrating it with diagrams, diagrams, photographs and drawings. The texts of the report must be presented in a clear, simple and clear language.

**METHODOLOGICAL RECOMMENDATIONS FOR CREATING PRESENTATIONS:** - this is a type of independent work by students to create visual information aids made using the multimedia computer program PowerPoint. This type of work requires coordination of the student's skills in collecting, systematizing, processing information, and formatting it in the form of a collection of materials that briefly reflect the main issues of the topic being studied, in electronic form. That is, the creation of presentation materials expands the methods and means of processing and presenting educational information, and develops students' computer skills. Presentations are prepared by the student in the form of slides using Microsoft PowerPoint. The role of the student: • study the materials of the topic, highlighting the main and secondary; • establish a logical connection between the elements of the topic; • present the characteristics of the elements in a brief form; • select reference signals to emphasize the main information and display them in the structure of the work; • complete the work and submit it by the deadline. Evaluation criteria: • relevance of the content to the topic; • correct structure of information; • the presence of a logical connection of the information presented; • aesthetic design, its compliance with the requirements; • work is submitted on time.

**METHODOLOGICAL RECOMMENDATIONS FOR COMPLETING ABSTRACTS:** The abstract provides for an in-depth study of the discipline and promotes the development of skills for independent work with literary sources. An abstract is a brief written summary of the content of a scientific work on a given topic. This is an independent research work where the student reveals the essence of the problem under study with elements of analysis on the topic of the essay. Presents various points of view, as well as his own views on the problems of the topic of the essay. The content of the abstract should be logical, the presentation of the material should be of a problem-thematic nature.

**REQUIREMENTS FOR THE ABSTRACT:** The volume of the abstract can vary between 15-20 printed pages. Main sections: table of contents (outline), introduction, main content, conclusion, bibliography. The text of the abstract must contain the following sections: - title page indicating: the name of the university, department, topic of the abstract, full name of the author and full name of the teacher. - introduction, relevance of the topic. - main section. - conclusion (analysis of literature search results); conclusions. - the list of literary sources must have at least 10 bibliographic titles, including network resources. The text part of the abstract is drawn up on a sheet of the following format: - indentation at the top - 2 cm; left indent - 3 cm; indentation on the right - 1.5 cm; bottom indent - 2.5 cm; - text font: Times New Roman, font height - 14, space - 1.5; - page numbering is at the bottom of the sheet. There is no number on the first page. The abstract must be completed competently in compliance with the culture of presentation. There must be references to the literature used, including periodical literature for the last 5 years.

**CRITERIA FOR EVALUATING THE ABSTRACT:** - relevance of the research topic; - correspondence of the content to the topic; - depth of material elaboration; - correctness and completeness of development of the questions posed; - the significance of the findings for further practical activities; - correctness and completeness of the use of literature; - compliance of the abstract design with the standard; - the quality of the message and answers to questions when defending the abstract. **BASIC REQUIREMENTS FOR FOREIGN CONTROL:**

The boundary control contains a task in the form of two situational tasks. Methodological recommendations for solving situational problems:

1. Read the problem statement carefully
2. Pay attention to the detected pathology - descriptive signs of specific changes in organs
3. Carefully read the questions for this task
4. Think about, decide and write an answer to all questions