

**MINISTRY OF HEALTH CARE OF UKRAINE**  
**ODESSA NATIONAL MEDICAL UNIVERSITY**

**CONFIRMED** by  
Acting vice-rector for scientific and pedagogical work  
Svitlana KOTLUZHYNska  
September 01, 2022



**The list of questions  
for pathomorphology exam passing  
for medical faculty students in 2022-2023 academic year.**

1. Pathological anatomy as a science, a field of practical medicine and an educational subject. Tasks of pathological anatomy.
2. Levels of study of the structural basis of diseases. Material (objects) and methods of pathomorphological studies.
3. The main stages of development of pathological anatomy. The contribution of domestic scientists to the development of world pathomorphology.
4. The concept of ultrastructural pathology of the cell. Damage to the cytoplasmic membrane, mitochondria, endoplasmic reticulum, Golgi apparatus, lysosomes. Reversible and irreversible damage to nuclei. Mitotic damage, causes, types.
5. Definition of "dystrophy", causes of dystrophy. Pathogenesis and mechanisms of dystrophy.
6. Classification of dystrophy. Morphogenesis of parenchymal (intracellular) protein dystrophies. Morphogenesis and morphology of parenchymal fatty dystrophies (lipidosis). Morphogenesis and morphology of parenchymal carbohydrate dystrophies.
7. Stromal-vascular (extracellular) protein dystrophies, types, morphology, mechanisms, causes, outcomes.
8. Stromal and vascular lipidoses and carbohydrate dystrophies, types, morphology.
9. Definition of mixed dystrophy, classification. Classification of haemoglobinogenic pigments. Types of disorders of their metabolism.
10. Disorders of lipidogenic pigments metabolism.
11. Disorders of nucleoprotein metabolism.
12. Calcium metabolism disorders, types of calcification, its causes and morphology.
13. Definition of necrosis, its causes, types, depending on the mechanism of action of the pathogenic factor. Morphological signs of necrosis. Early morphological and histochemical changes. Morphological signs of necrosis in the nuclei. Morphological signs of necrosis in the cytoplasm and intercellular substance.
14. Clinical and morphological forms of necrosis. Coagulation necrosis, causes of development, types, micro- and macroscopic changes in necrotic areas. Enzymatic and non-enzymatic fatty necrosis, localisation, causes.
15. Gangrene, definition, classification. Dry gangrene, localisation, macroscopic changes of necrotic tissue. Wet gangrene, localisation, causes of occurrence, morphological changes. Pressure ulcer, features of development, localisation.
16. Collagenous (wet) necrosis, location, macro- and microscopic changes. Outcomes of necrosis.
17. Apoptosis, definition, morphological manifestations of apoptosis. Influence of external

- factors on the regulation of apoptosis. Categories of autonomous apoptosis.
18. Signs of general death, mechanisms and timing of their development.
  19. General concept of edema, composition of tissue fluid, classification, localisation of fluid accumulation. Local edema, its regulation, mechanism of development, types. General edema, its types and mechanisms of occurrence.
  20. Dehydration, mechanisms of development, degrees of dehydration.
  21. Types of general arterial haemorrhage. Local arterial haemorrhage, types, causes, morphology. Pathomorphology, consequences of stasis.
  22. General venous edema, types, causes of development, changes in the lungs and liver in chronic venous edema.
  23. Blood thickening, causes, morphological changes in organs. Blood thinning, causes, significance.
  24. Bleeding, definition, causes of development, classification. Haemorrhage, types, morphology.
  25. Shock, definition, classification. Stages of shock development, morphological changes. Morphological changes of the kidneys, lungs, liver, myocardium, stomach and intestines in shock.
  26. Heart attack, definition, causes. Types of heart attacks. Mechanisms of development and morphological changes in the infarction zone. Myocardial infarction, localisation, morphology, outcome. The outcome of a heart attack.
  27. Disorders of lymphatic circulation, causes, classification. Acute and chronic local lymphedema. Morphology of acute and chronic general lymphedema.
  28. Thrombosis, definition, causes and mechanisms of thrombosis. Morphology and types of thrombi. Favourable and unfavourable outcomes of thrombosis.
  29. Definition of DIC syndrome, causes of occurrence. Stages of DIC syndrome, morphological signs.
  30. Definition of embolism, types of emboli. Ways of movement of emboli. Morphology of thromboembolism of the pulmonary artery and large vessels of the circulation.
  31. Definition of inflammation, etiology. Morphological signs of inflammation. Morphological changes in alteration, exudation and proliferation.
  32. Classification of inflammation by morphology, course, and body reactivity. Forms of exudative inflammation. Serous inflammation, etiology, localisation, morphology, outcome.
  33. Fibrinous inflammation: etiology, types, localisation, morphology, outcomes.
  34. Purulent inflammation: etiology, forms, localisation, morphology, outcomes.
  35. Non-independent forms of inflammation. Catarrhal inflammation; etiology, localisation, types, morphology, outcomes. Hemorrhagic and putrefactive inflammation: etiology, morphology, outcomes.
  36. General characteristics of productive inflammation, classification, outcomes. Intermediate (interstitial) inflammation, morphology, outcome. Granulomatous inflammation, definition of granuloma, etiology, stages of granuloma. Productive inflammation with the formation of polyps and condylomas; localisation, etiology, outcomes.
  37. Primary organs of immunogenesis, their role in the development of immune reactions. Secondary organs of immunogenesis, their role in the development of immune reactions. Types of lymphocytes, their localisation in the organs of immunogenesis, functional features. Types of immune reactions.
  38. Definition of immunopathological processes, classification. Immunogenesis disorders associated with thymus pathology and peripheral lymphoid tissue pathology.
  39. Mechanisms of development of immediate and delayed hypersensitivity reactions. Classification of hypersensitivity reactions. Morphological characteristics of delayed type hypersensitivity reaction (DTH) and immediate type hypersensitivity (ITH). Morphological characteristics of the transplant rejection reaction.
  40. Definition and classification of autoimmune diseases. Characteristics of organ-specific autoimmune diseases. Diseases with autoimmune disorders, mechanisms of autoantigens.

41. Amyloidosis, chemical composition and physical properties of amyloid. Classification of amyloidosis. Characteristics of primary, hereditary (genetic), secondary, localised and senile amyloidosis. Types of amyloidosis depending on the specificity of fibril protein. Methods of micro- and macroscopic detection of amyloid. Appearance of organs in amyloidosis, outcome.
42. Classification of immunodeficiency states. Classification of primary immunodeficiency syndromes. Combined immunodeficiency syndromes, types, state of immunogenesis organs, clinical manifestations. Syndromes of cellular immunity deficiency, state of immunogenesis organs, clinical manifestations. Syndromes of humoral immunity deficiency, state of immunogenesis organs, clinical manifestations.
43. Causes of secondary immunodeficiency states.
44. Definition of regeneration, classification. Regulation and phases of the regenerative process. Characteristics of physiological regeneration. Types of reparative regeneration. Characteristics of complete regeneration. Characteristics of incomplete regeneration. Pathological regeneration, conditions of occurrence, types.
45. Blood regeneration.
46. Regeneration of blood and lymphatic vessels.
47. Regeneration of connective and adipose tissue. Pathological regeneration of connective tissue. Regeneration of smooth and skeletal muscles.
48. Bone regeneration, conditions of regeneration, characteristics of uncomplicated bone fracture. Morphological characteristics of secondary bone fusion.
49. Regeneration of cartilage tissue. Regeneration of the epithelium. Regeneration of the brain and spinal cord. Regeneration of peripheral nerves. Types of wound healing. Wound healing by primary and secondary tension.
50. The concepts of compensation and adjustment. Stages of the compensatory process. Manifestations of adaptive processes. Hypertrophy and hyperplasia, definition, classification.
51. Working (compensatory) hypertrophy, causes of development. Characteristics of cardiac hypertrophy, causes, macro-, microscopic changes. Vicarious hypertrophy, conditions of development. Neurohumoral hypertrophy and hyperplasia. True and false hypertrophy, morphological changes in organs.
52. Atrophy, definition, classification. Types of general pathological atrophy, morphological changes in organs, appearance of patients. Types of local pathological atrophy, causes, morphology.
53. Definition of organisation, encapsulation, cirrhosis and sclerosis, morphology. Metaplasia and dysplasia, definition, morphological characteristics. Degrees of dysplasia.
54. Tumours, definition, modern theories of carcinogenesis. Mechanisms of blastomatous action of pathogenic agents. Tumour morphogenesis, morphogenetic variants of tumour occurrence. Structure of the tumour. Types of tumour growth.
55. Tumour atypism, definition, types. Morphological characteristics of tissue and cellular atypism. Pre-tumour (precancerous) states and changes, morphology. Metastasis: types, patterns, mechanisms. Relapse, definition.
56. Modern classification of tumours. Morphological features of benign tumours. Morphological features of malignant tumours.
57. General characteristics and nomenclature of tumours from mesenchymal tissues. Benign and malignant tumours of connective tissue, muscle tissue, blood and lymphatic vessels. Benign bone-forming and cartilage-forming tumours. Benign and malignant tumours of adipose tissue.
58. Classification and morphological features of central nervous system tumours. Benign neuroectodermal tumours. Low-grade and embryonal neuroectodermal tumours. Benign and malignant tumours of the meninges.
59. Mature and immature tumours of peripheral nerves. Benign and malignant tumours of the sympathetic ganglia.
60. Nomenclature of tumours that develop from melanin-forming tissue. Nevi - definition,

- classification, morphology. Melanoma, stages of development. Morphology of different types of melanomas.
61. Nomenclature of epithelial tumours. Morphological features of epithelial tumours without specific localisation. Benign and malignant tumours of the integumentary epithelium.
  62. Benign and malignant liver tumours. Benign tumours of the stomach and intestines from Kulchitsky's enterochromaffin cells.
  63. Organ-specific tumours of the thyroid gland, kidneys, skin: benign and malignant
  64. Benign and malignant tumours of the uterus, types, morphology
  65. Tumours of the salivary glands and oral cavity.
  66. Features of tumour growth in children compared to adults. Classification of childhood tumours. Dysontogenetic tumours in children. Theories of teratoma development, histological variants of teratomas. Morphological structure of mature and immature teratomas. Morphological features of hamartomas and hamartoblastomas.
  67. Tumours in children arising from embryonic cambial tissues in the CNS, sympathetic ganglia and adrenal glands.
  68. Hamartomas and hamartoblastomas of vascular origin. Hamartomas and hamartoblastomas of muscle tissue. Hamartoblastomas of internal organs: nephroblastoma (Wilms' tumour), hepatoblastoma. Definition of teratomas, typical location. Sacroiliac teratoma and teratoblastoma. Features of morphological structure. Teratomas of the ovaries and testes.
  69. Benign and malignant tumours in children that develop like tumours in adults.
  70. Organ-specific hormone-active adrenal tumours: classification, morphological features.
  71. Benign and malignant tumours of the breast.
  72. Definition, classification and morphological characteristics of anaemias. Definition, classification, morphological characteristics of thrombocytopenias and thrombocytopathies. Classification, morphological characteristics of coagulopathies.
  73. Definition, classification, general morphological characteristics of leukaemia.
  74. Types, stages of course, morphological characteristics of acute leukaemia. Types, stages of course, morphological characteristics of chronic leukaemia.
  75. Pathological types, morphological characteristics of Hodgkin's disease, causes of death. General characteristics, classification, morphological manifestations and prognosis of non-Hodgkin's lymphoma.
  76. Definition of atherosclerosis, risk factors, modern theories. Morphogenesis of macroscopic changes in atherosclerosis. Morphogenesis of microscopic changes in atherosclerosis. Clinical and morphological forms of atherosclerosis, organ damage in atherosclerosis.
  77. Definition, risk factors, correlation of coronary heart disease with atherosclerosis and hypertension. Morphology of acute, recurrent and repeated myocardial infarction. Consequences, complications, causes of death in myocardial infarction.
  78. Morphological characteristics, complications, causes of death in chronic coronary heart disease.
  79. Hypertension: definition, risk factors. Morphological changes in blood vessels, heart, changes in organs in hypertension.
  80. General characteristics of systemic connective tissue diseases: immune homeostasis disorders and systemic progressive disorganisation of connective tissue in rheumatic diseases.
  81. Classification, morphogenesis, morphological characteristics of rheumatism. Endocarditis, myocarditis, pericarditis and pancreatitis: classification, morphological characteristics, complications.
  82. Morphology of Bekhterev's disease. Morphogenesis, pathomorphology, complications and causes of death in systemic lupus erythematosus. Pathological anatomy, visceral manifestations, complications, causes of death in systemic scleroderma. Pathological anatomy of dermatomyositis. Complications, causes of death.
  83. Pathomorphology of systemic vasculitis: nonspecific aortoarteritis, nodular periarteritis, Wegener's granulomatosis, obliterative thrombangitis.

84. Pathological anatomy of acquired heart disease. Pathological anatomy of acquired (secondary) cardiomyopathies.
85. General characteristics, classification, background diseases and risk factors of cerebrovascular disease. Cerebral infarction (ischaemic stroke): morphological characteristics. Morphological characteristics, consequences of haemorrhagic stroke.
86. Morphological characteristics and complications of spontaneous intracranial haemorrhage. Morphological characteristics and complications of spontaneous subarachnoid haemorrhage.
87. Morphological characteristics and complications of Alzheimer's disease. Morphological characteristics and complications of multiple sclerosis. Morphological characteristics, complications of amyotrophic lateral sclerosis.
88. Morphological characteristics and complications of post-resuscitation encephalopathy. Morphological characteristics, complications of diseases of the peripheral nervous system.
89. Morphological characteristics of acute bronchitis. Modern classification of pneumonia. Morphological characteristics and complications of acute focal pneumonia.
90. Morphological characteristics and complications of lobar pneumonia.
91. Morphological characteristics and complications of acute interstitial pneumonia. Morphological characteristics of acute destructive processes of the lungs.
92. Definition and classification of chronic nonspecific respiratory diseases. Morphological characteristics and complications of chronic bronchitis.
93. Morphological characteristics of chronic obstructive emphysema. Morphological characteristics and complications of bronchiectasis.
94. Morphological characteristics and complications of bronchial asthma. Morphological characteristics of idiopathic pulmonary fibrosis. Morphological characteristics of lung cancer.
95. Diseases of the oesophagus: morphological characteristics. Morphological characteristics of chronic gastritis. Pathomorphology of peptic ulcer disease. Complications of peptic ulcer disease.
96. Gastric cancer. Macroscopic and histological forms. Features of metastasis.
97. Pathomorphology of ulcerative colitis. Pathomorphology of Crohn's disease. Tumours of the intestine. Clinical and morphological forms of appendicitis. Complications of appendicitis.
98. Morphological characteristics, prognosis of fatty hepatosis. Definition, morphological characteristics, prognosis of toxic liver dystrophy.
99. Morphogenesis, forms, morphological characteristics of acute hepatitis. Morphological characteristics of chronic hepatitis, degree of activity and chronicity.
100. Morphological characteristics of the most important types of cirrhosis. Liver cancer, morphological characteristics
101. Pathomorphology of biliary stone disease. Pathomorphology of acute and chronic cholecystitis
102. Morphological characteristics, complications of acute and chronic pancreatitis. Tumours of the pancreas, morphological characteristics.
103. Morphological characteristics, complications and causes of death in Itzenko-Cushing's disease.
104. Morphological characteristics and complications of acromegaly. Morphological characteristics of diabetes
105. Morphological characteristics of diabetes mellitus. Complications of diabetes mellitus: morphological characteristics of diabetic macro- and microangiopathy
106. Multinodular goiter. Morphological characteristics, complications, outcomes. Graves' disease (diffuse toxic goiter, Basedov's disease): morphological features of the thyroid gland, visceral manifestations
107. Hypothyroidism. Cretinism. Myxedema. Morphological characteristics. Definition, pathomorphology of Hashimoto's thyroiditis.
108. Primary chronic insufficiency of the adrenal cortex (Adison's disease): morphological manifestations. Waterhouse-Friederiksen syndrome: morphological

manifestations.

109. Morphological manifestations of inflammatory diseases of the endometrium and myometrium. Morphological manifestations of precancerous processes and tumours of the endometrium and myometrium. Morphological characteristics, complications, consequences of inflammatory diseases mammary glands. Morphological characteristics of fibrocystic changes of the mammary glands.
110. Morphological characteristics, complications, and outcomes of benign nodular prostatic hyperplasia. Morphological characteristics of inflammatory diseases
111. Modern clinical and morphological classification of renal diseases. Post-infectious glomerulonephritis: morphological characteristics, consequences. Rapidly progressive: morphological characteristics, consequences.
112. Chronic glomerulonephritis: morphological characteristics, consequences. Classification, morphological manifestations of idiopathic nephrotic syndrome. Morphological manifestations of membranous nephropathy.
113. Morphological characteristics and prognosis of necrotising nephrosis. Morphological characteristics, prognosis of tubulointerstitial nephritis. Morphological characteristics, prognosis of acute and chronic pyelonephritis.
114. Morphogenesis and morphological characteristics of nephrolithiasis, consequences Chronic renal failure. Nephrosclerosis. Pathological anatomy.
115. Morphological changes of bones in hyperparathyroidism. Morphological characteristics and complications of Paget's disease. Morphological characteristics and complications of fibrous dysplasia.
116. Morphological characteristics, complications of osteomyelitis. Morphological characteristics, causes of death in Duchenne muscular dystrophy. Morphological characteristics, causes of death in myotonia.
117. Classification, morphological diagnosis, complications and consequences of ectopic pregnancy. Classification, morphological characteristics of ORN-gestosis.
118. Classification, morphological characteristics and prognosis of trophoblastic disease. Morphological manifestations, effects on the fetus and the woman's body, consequences of infectious processes in the placenta. Morphological manifestations of circulatory disorders in the placenta.
119. Morphological characteristics and prognosis of fetal growth retardation. Morphological characteristics of intrauterine fetal infections.
120. Birth trauma: classification and morphology. Morphological characteristics of haemolytic disease of infants. Morphological characteristics of haemorrhagic disease of infants.
121. Morphological characteristics, complications of pneumopathies. Morphological characteristics, consequences of asphyxia.
122. Morphological characteristics, consequences of non-infectious fetopathies: diabetic and alcoholic fetopathy. Classification and morphology of congenital malformations.
123. Morphological characteristics of malnutrition and malnutrition. Pathological anatomy, consequences, causes of death in injuries associated with the influence of physical environmental factors: industrial noise, electromagnetic waves of radio frequencies, ionising radiation, electric current, temperature effects.
124. Morphological characteristics, complications, consequences, causes of death in scarlet fever.
125. Morphological characteristics, complications, consequences, causes of death in bacterial dysentery. Morphological characteristics, complications, consequences, causes of death in typhoid fever, salmonellosis.
126. Morphological characteristics, complications, consequences, causes of death in respiratory viral infections, coronavirus disease.
127. Morphological characteristics, complications, consequences, causes of death in typhus. Morphological characteristics, complications of prion lesions of the central nervous

system.

128. Morphological characteristics, complications, causes of death in AIDS. Morphological characteristics, complications, consequences, causes of death in childhood viral infections: measles, infectious mononucleosis, mumps, poliomyelitis
129. Morphological characteristics, complications, consequences, causes of death in diphtheria. Morphological characteristics, complications, consequences, causes of death in pertussis.
130. Tissue reactions in tuberculosis. Pathological anatomy of the primary tuberculosis complex. Morphology of primary tuberculosis progression. Pathological anatomy of the chronic course of primary tuberculosis. Morphological characteristics, complications, consequences, causes of death in haematogenous tuberculosis with predominant lung involvement. Morphological characteristics, complications, consequences, causes of death in secondary tuberculosis. Modern pathomorphosis of tuberculosis.
131. Clinical and anatomical forms of sepsis: septicaemia, septicaemia, septic (infectious) endocarditis.
132. Plague: clinical and morphological forms, complications, causes of death. Tularemia: clinical and morphological forms, causes of death. Anthrax: clinical and morphological forms, causes of death.
133. Cholera: clinical and morphological forms, complications, causes of death.
134. Pathomorphology of congenital syphilis. Pathomorphology of acquired syphilis.
135. Morphological characteristics, complications, consequences, causes of death in diseases caused by protozoa: malaria, balantidiasis, amoebiasis. Morphological characteristics, complications, consequences, causes of death in diseases caused by helminths: trichinosis, echinococcosis, cysticercosis, opisthorchiasis, schistosomiasis.

**Temporary acting  
head of the Department**



**ass. prof. Neskromna N.V.**