EXAM QUESTIONS

1. The subject and tasks of pathological physiology. Its place in the system of the higher medical education. Pathological physiology as a theoretical basis of modern clinical medicine.


3. The definition of the notion «disease». Evolution of the idea about the disease essence on different development stages of medicine. Development stages of the disease, outcomes of the disease.

4. The notion of a pathological process, pathological reaction, a pathological condition. Interrelation between «pathological process» and «disease».

5. Factors that determine specificity of pathological processes and selectivity of localization of basic structural-functional impairments.


7. The notion of etiology and pathogenesis. The significance of reasons and conditions of disease development. The essence of moncausenalism, conditionalism and constitutionalism.

8. The study about pathogenesis. The definition of «pathogenesis». Interrelation between etiology and pathogenesis. The notion of the main (initial) link in development of the disease. The role of vicious circles in the disease pathogenesis.


10. Relationship of soma and psyche in health and disease. The role of protective inhibition in pathology. Word as a pathogenic and therapeutic factor. The concept of iatrogenic.

11. Interrelation between the local and the general, the specific and the nonspecific in development of the disease.

12. The problem of the unity of structure and function; its current state. Structural and functional bases of compensation of disturbed functions.

13. The notion of a dual internally inconsistent nature of the disease. The driving force for its development.


16. The role of the genetic apparatus in developing compensatory reactions and adaptatory reactions; the «price» of adaptation and compensation.
17. The general characteristic of pathological and compensatory reactions of the organism, examples, pathogenic significance
18. The staging character of the disease. Dynamics and expressiveness of pathological and compensatory reactions of the organism in the process of the disease.
19. Definition of the notions «reactivity». Classification of reactivity, forms of reactivity (normergy, hypoergy, hyperergy, dysergy), basic parameters of reactivity, the role in pathology. Peculiarities of reactivity depending on sex and age.
23. Allergy, definition of this notion. Forms of allergic reactions (immediate and delayed-type), their characteristic. Anaphylactic shock
25. Diffuse diseases of connective tissue (collagenoses). Etiology, pathogenesis, basic forms.
26. Factors affecting injury severity for the organism exposed to electric current.
29. Kinds of electric current injuries (local and general, specific and nonspecific) and their characteristic. The pathogenesis of electric current injuries. The reasons of lethal electrocutions. Rules of giving the first-aid on electrocution.
32. Acute radiation sickness. Its forms, course, outcome.
33. The characteristic of the formation period of a typical marrowy form of acute radiation sickness, basic clinical syndromes, outcomes.
34. The characteristic of the formation period of a typical digestion form of acute radiation sickness, basic clinical syndromes, outcomes.
35. The characteristic of the formation period of a typical toxemic and cerebral form of acute radiation sickness, basic clinical syndromes, outcomes.
36. General characteristic of chronic radiation sickness; pathogenesis, basic clinical syndromes.
37. Distant consequences of exposure to ionizing radiation. The concept of the stochastic and non-stochastic effects of ionizing radiation.
39. Classification of diseases taking into account the specificity of heredity and environment in their development. The concept of penetrance and expressivity. The role in pathology.

40. Hereditary and congenital forms of pathology. Classification principles of hereditary forms of pathology.


46. Hereditary metabolic disturbances glycosaminoglycans. Mucopolysaccharidosis, their basic form (Hurler syndrome, Hunter syndrome).

47. The role of genetically determined disorders of collagen metabolism in the occurrence of connective tissue disease (osteogenesis imperfecta, etc.).

48. Cell injury. The etiology and the most common mechanisms of cell injury. Specific and nonspecific reactions at cells damage.

49. Types of cell death. Integrated mechanisms of cell injury and its death (apoptosis and necrosis).

50. The definition of the notion and general characteristic of components of inflammation. Inflammation as a typical pathological process. Local and systemic manifestations of inflammation.

51. Etiology of inflammation. Primary and secondary alteration in inflammation. The significance of inflammation mediators in the development of secondary alteration.

52. Basic mediators of inflammation, their origin, principles of classification. Endogenic pro- and anti-inflammatory factors.

53. Physical and chemical changes in the focus of inflammation, mechanisms of their development and significance.

54. Impairment stages of peripheral blood circulation in the focus of inflammation and mechanisms of their development.

55. The definition, mechanism and significance of exudation in inflammation. The reasons and mechanisms of increasing the permeability of a vascular wall in the focus of inflammation. Types of exudates, their distinctions from transsudate.

56. Stages, ways and mechanisms of leukocytes emigration in inflammation. Basic chemoattractants which cause migration of leukocytes.
57. The definition of the notion and biological significance of phagocytosis. Stages of phagocytosis and their mechanisms. The reasons and types of phagocytosis impairments. Hereditary defects of phagocytes.

58. The proliferation stage, its basic signs and development mechanisms. Rinds and outcomes of inflammation. The basic theories pathogenesis of inflammation.


60. The definition of the notion «fever». Fever as a typical pathological process. Etiology of fevers. Pyrogenic substances.


63. I. Mechnikov’s study about phagocytosis as a protective reaction of the organism.

64. Arterial and venous hyperemias. The definition of the notion of arterial and venous hyperemias, classification, etiology, pathogenesis, manifestations and outcomes.


66. Thrombosis. The definition of the notion, etiology, pathogenesis of thrombosis, consequences and outcomes of thrombosis.

67. Embolism, the definition, classification, manifestations and consequences of embolism. Types of emboli.

68. Typical microcirculatory disorders: extravascular, intravascular, intramural. The definition of the notions sludge and «capillarotrophic insufficiency». Etiology, pathogenesis, and outcomes.

69. Hypoxia. Definition, classification, pathogenetic characteristics of different types of hypoxia.

70. Term and long-term mechanisms of compensatory and adaptive responses during hypoxia. Adaptation to hypoxia, the stage of development. Systemic structural trace adaptation to hypoxia. Principles of pathogenetic therapy of hypoxic conditions.

71. Functional impairments of organs and systems in hypoxia.


73. Compensation mechanisms of disturbance of acid-base status. Laboratory criteria of violations and compensation of acid-base status.

74. Etiology, pathogenesis and types of acidosis. Laboratory criteria of violations and compensation.

75. Etiology, pathogenesis and types of alkalosis. Laboratory criteria of violations and compensation.
78. Tumor. Definition of the concept. Feature blastogenous growth, its differences from other types of tissue growth and non-malignant tumors. Distribution characteristics of tumors in phylogensis and ontogenesis. The main reasons for the growth of cancer incidence.
80. Significance of heredity, age, sex, dietary habits, bad habits in the occurrence and development of tumors.
82. Types and basic displays atypism tumor cells.
83. The pathogenesis of tumors. Modern views on the molecular and genetic mechanisms of neoplastic transformation. The modern interpretation of the concept of oncogene. The role of mutations, viruses and epigenomic violations in the mechanism of transformation in proto oncogene.
84. Types and functions of cellular oncogenes, the role of oncoproteins in violation of the functions of the transformed cells. The concept of antionkogen.
85. The relationship of disorders of the nervous system with the emergence and growth of tumors.
86. Interrelation of the endocrine system with the emergence and growth of tumors. Hormone-dependent tumors.
87. The relationship of disorders of the immune system with the emergence and growth of tumors. Features of antitumor immunity. The main causes and manifestations of immunosuppression in cancer.
88. Systemic effects of the tumor on the body. Paraneoplastic syndrome, its pathogenesis, the main manifestations. The pathogenesis of cancer cachexia.
89. The concept of pre-cancerous conditions. Obligate and facultative precancer. Stage of development of malignant tumors (LM Shabad.) Basic principles of treatment and prevention of tumors.
90. Notions of the extremal states. Shock. Definition of notion, types, stages, common mechanisms of development.
93. Collapse, its types, pathogenesis, differences between shock and coma.
94. Coma, its types, common ways of comatose pathogenesis states.
95. Starvation, its types and periods of development.
100. Typical forms of pathology and reactive changes of the total blood volume. Normo-, hypo- and hypervolemias and their types depending on the relationship of corpuscular elements and blood plasma. The causes of their incidence, clinical manifestations.
102. The definition of the notions «anemia». Classification of anemia by etiopathogenesis and morphofunctional state. Impairments and compensatory-adaptive processes in the organism at anemia.
103. Quantitative and qualitative changes of erythron during anemia. Regenerative and Degenerative forms of erythrocytes.
104. Etiology, pathogenesis, general characteristic, blood slide at anemia due to blood loss.
105. Etiology, pathogenesis, general characteristic, blood slide at iron-deficiency and sideroachrestic anemias.
106. Etiology, pathogenesis, general characteristic, blood slide at B₁₂-(folic acid) deficiency and B₁₂-(folic acid)-achrestic anemias.
107. Etiology, pathogenesis, general characteristic, blood slide at hemolytic anemias.
108. Leucopenias and leucocytosys. The etiology, types and mechanisms of development.
110. Leukemia, the definition of the notion. Etiology and pathogenesis of leukemias. General characteristic and principles of classification. Leukemoid reactions.
111. Blood slide, clinical manifestations of acute and chronic leukemias.
114. Thrombocytoses and thrombocytopenias. Etiology, pathogenesis, laboratory and clinical manifestations.
115. Thrombocytopathies. Classification, etiology, pathogenesis, laboratory and clinical manifestations.
117. Blood circulation insufficiency. The definition of the notion, its types. Cardiac insufficiency. The definition of the notion. Classification of cardiac insufficiency by pathogenesis, localization, course, severity degree. The notion of primary and secondary cardiac insufficiency.
118. The notion of systolic and diastolic dysfunctions. Etiology, pathogenesis, hemodynamics impairments and clinical manifestations of systolic and diastolic dysfunctions.

119. Etiology, pathogenesis and manifestations of acute left- and right-side ventricular cardiac insufficiency.

120. Compensation mechanisms of cardiac insufficiency. Their types, manifestations and pathogenetic characteristic. Pathogenetic therapeutic principles of cardiac insufficiency.

121. Remodeling of the myocardium. Outcomes of the myocardium remodeling depending on the type of hemodynamic overstrain and in the myocardium damage. Myocardium hypertrophy, causes and mechanisms of its development. Functional and metabolic peculiarities of a hypertrophied myocardium.

122. Characteristic of the cardiac compensatory hyperfunction (CCH) in acute experimental overstrain of the left ventricle with resistance. Development stages of the cardiac compensatory hyperfunction. Development mechanisms of decompensation in pathological myocardium hypertrophy.


124. Pathogenesis of ischemic and reperfusion syndromes at coronary insufficiency, their manifestations.

125. Cardiac arrhythmias. Their classification. Cardiac automatism impairment, types, causes, ECG-manifestations.

126. Impairments of cardiac excitability: types, causes and ECG-manifestations of extrasystole, paroxysmal tachycardia, atrial and ventricular flutter and fibrillation. Hemodynamic impairments.

127. Cardiac conduction impairments, types and ECG-manifestations of AV and ventricular blockades.


129. Etiology and basic pathogenesis theories of hypertonic disease.

130. The role of hyperactivation of renine-angiotensine-aldosterone system in dysfunction of target organs and stabilization of arterial hypertension. Clinical manifestations of the impairment of target organs at arterial hypertension.


133. Syndromes of «robbing the brain», «Robin Hood», excessive cerebral perfusions; their characteristic, pathogenetic characteristic.


135. Atherosclerosis, its etiology and pathogenesis. The role of LPLD-impairments of receptor interaction at atherogenesis. The main experimental models of atherosclerosis.

137. Impairments of pulmonary ventilation: obstructive, restrictive and mixed, principal causes and manifestations. Changes of alveolar air gas content and arterial blood at the impairment of ventilation.


139. Principal causes of the impairment of pulmonary perfusion. Forms and causes of pulmonary hypertension. Chronic pulmonary-cardiac insufficiency: pulmonary heart, etiology, pathogenesis, clinical manifestations.

140. Breathlessness, periodic and terminal respiration. Their forms, pathogenetic characteristic, development mechanisms.

141. Asphyxia. Etiology, pathogenesis, stages of development.


143. Basic manifestations of gastric dyspepsia: the impairment of appetite, nausea, eructation, vomiting, pain syndrome. Causes of their development.


145. Gastric ulcer and duodenal ulcer. Theories of ulcer development. Modern conceptions of etiology and pathogenesis of gastric ulcer. The role of H. pylori in pathogenesis of the disease.


147. . Intestinal autointoxication. Etiology, pathogenesis, manifestations.


149. Basic syndromes in pathology of the liver and bile ducts. The definition of the notion, etiology and pathogenesis of mechanical, parenchymatous and hemolytic forms of jaundice.


152. Ascites. Pathogenesis of ascites at portal hypertension.

153. Renal and extrarenal factors of filtration and reabsorption impairments.

156. Acute renal insufficiency. Its forms, etiology, pathogenesis, stages, clinical manifestations, outcomes. Changes of the volume and content of blood and urine.
159. Total (Simmonds disease) and partial hypofunction of adenohypophysis (Hypophyseal nannism, infantilism), clinical manifestations.
161. The pathology of a posterior lobe of the hypophysis: signs of hypo- and hypersecretions of vasopressin.
162. The thyroid gland pathology, its forms, pathogenesis, clinical manifestations.
163. The parathyroid glands pathology, its forms, pathogenesis, clinical manifestations.
166. Diabetes of the I\textsuperscript{st} and II\textsuperscript{nd} type, their etiology, pathogenesis, clinical manifestations. Mechanisms of hyperglycemia and glycosuria.
169. Convulsive conditions, types of spasms and their pathogenesis.
170. Functional impairments of the vegetative nervous system, their types and mechanisms.
175. The main treatment principles in medicine: revulsive, allopathic, homoeopathic, etiological, pathogenetic, symptomatic. Short characteristic.