

«Утверждаю»
Первый проректор-проректор по учебной деятельности
профессор _____ А.Б. Ходжаян
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«Согласовано»
декан факультета иностранных студентов
доцент _____ С.В. Знаменская

Перечень экзаменационных вопросов для студентов 3 курса факультета иностранных студентов по учебной дисциплине «Патологическая физиология».

1. Pathological physiology as a science and as a medical discipline: the main goals and objectives (problems) of study, its importance in the overall system of physician training. The relationship of pathological physiology with normal physiology, biochemistry, pathological anatomy, and clinical disciplines.
2. Methods for studying pathological physiology. Pathophysiological experiments, their essence, and specific features. Types of disease and pathological process modeling. Auxiliary methods for conducting pathophysiological experiments.
3. Definition of the concept of "general nosology" and the main issues studied in this section of pathological physiology. Definition of the concepts of "health" and "disease" from the perspective of modern science. Criteria of disease.
4. Definitions of the concepts "disease," "pathological process," and "pathological condition." Examples. Main stages of the disease. Their characteristics. Disease outcomes, mechanisms, types, and characteristics.
5. Clinical and biological death, signs, and mechanisms of their development. Principles of restoration of vital functions (resuscitation) during clinical death.
6. Definition of the concepts "general etiology," "cause," and "condition." The role of causes and conditions in the development of disease. Modern understanding of etiology.
7. Damaging pathogenic factors, their classification and role in the origin of diseases.
8. Physical environmental factors. The role of low ambient temperatures in the onset and progression of colds. Provide examples. The use of hypothermia in medicine: examples. The use of hypothermia in cardiac and brain surgery, and organ transplants.
9. Definition of the term "hypothermia". Causes, conditions, and mechanisms of hypothermia development (by stages).
10. Overheating: definition, causes, conditions, and mechanisms of overheating. Identify human diseases whose onset and progression are influenced by high ambient temperatures. Explain why high temperatures can be a contributing factor to the development of intestinal infections.
11. Sunstroke, definition, causes and mechanisms of its development, clinical manifestations.
12. Burn disease, causes, mechanisms. Periods of burn disease, their characteristics, consequences.
13. The effects of low atmospheric pressure on the body. Mountain sickness: causes and mechanisms of development of protective-adaptive reactions and damage phenomena.
14. The effects of high atmospheric pressure on the body. Damage to the body due to oxygen and nitrogen poisoning due to increased atmospheric pressure. Causes and mechanisms of decompression sickness.
15. The damaging effects of electric current on the body. Electrical injury, its causes, conditions, and mechanisms of development. Apparent death. Characteristics of the concept, principles of resuscitation.
16. Radiant energy, types. Radiation sickness: causes, mechanisms of development, forms. Bone marrow form of acute radiation sickness, name its periods, describe the clinical picture and blood changes in each period.
17. Infrared and ultraviolet radiation: mechanisms of their damaging effects, consequences for the body.
18. Factors affecting the human body in space flight conditions, explain the mechanisms of overloads, kinetosis and weightlessness.
19. The damaging effects of mechanical, chemical, biological, and social factors. Provide examples and explain their role in the development of disease.
20. Define the concepts of "general pathogenesis," "cause-and-effect relationships in pathogenesis," "initial link in pathogenesis," "main link," "vicious circles," "local and general," "specific and nonspecific." Explain with examples. Define the concept of "sanogenesis," its role in the pathogenesis and outcome of diseases.
21. Cell damage. Definition of the concept, causes of cell damage, principles of classification.
22. Specific and non-specific mechanisms of cell damage, characteristics, examples.
23. Metabolic, functional, and morphological manifestations of cell damage. Consequences.
24. Types of cell death. Mechanisms of necrosis and apoptosis.
25. The main intra- and extracellular protective and adaptive reactions in case of damage.
26. Definition of the concept of "reactivity of the organism", classification according to A.D. Ado. Quantitative and qualitative criteria of individual reactivity.
27. Factors of individual reactivity of the body: the role of heredity, constitution, age, gender, and life history in individual reactivity of the body. Examples.
28. Explain the mechanisms of individual reactivity of the body. Modern concepts.
29. Types of carbohydrate metabolism disorders. Causes, mechanisms of hypoglycemic states, manifestations, and consequences. Hypoglycemic coma and principles of recovery from coma.

30. Types of carbohydrate metabolism disorders. Causes, mechanisms of hyperglycemic states, manifestations, and consequences. Hyperglycemic coma and principles of recovery from coma.
31. Definition of the term "diabetes mellitus." Its types, causes, and mechanisms of development of types 1 and 2 diabetes.
32. Mechanisms of disturbance of fat and protein metabolism in diabetes mellitus.
33. Main complications of diabetes. Diabetic coma, types, and characteristics. Principles of recovery from coma. Late complications of diabetes.
34. Types of water-salt metabolism disorders (dyshydria). Hypohydration : types, causes, mechanisms of development, consequences for the body.
35. Types of water-salt metabolism disorders (dyshydria). Hyperhydration: types, causes, mechanisms of development, consequences for the body.
36. Definition of the term "edema." Types, classification of edema, causes, general mechanisms of edema development, consequences for the body.
37. Causes, mechanisms of development, consequences for the body of cardiac, renal and mechanical edema.
38. Definition of the term "arterial hyperemia." Causes and conditions, types of arterial hyperemia by development mechanism. Macro- and microscopic signs of arterial hyperemia, mechanisms of their development. The significance of arterial hyperemia for the human body.
39. Definition of the term "venous hyperemia." Causes and conditions contributing to its development. Types of venous hyperemia based on the mechanism of development. Macro- and microscopic signs of venous hyperemia. The significance of venous hyperemia.
40. Definition of the term "ischemia." Causes and conditions that contribute to its occurrence. Mechanisms of development, macro- and microscopic signs of ischemia. Significance for the body.
41. Definition of the term "thrombosis." Causes and conditions contributing to the occurrence and development of thrombosis, mechanisms of thrombus formation. Possible outcomes of thrombosis and its consequences.
42. Definition of the term "embolism." Principles of embolism classification. Consequences of embolism for the body.
43. Definition of the concepts "inflammatory reaction" (A.M. Chernukh) and "inflammation" as a typical pathological process. Causes and conditions contributing to the development of inflammation. Stages of inflammation pathogenesis.
44. Definition of the concept of "alteration", mechanisms of primary and secondary alteration. The significance of alteration for the site of inflammation.
45. Inflammatory mediators, their types and role in the development of inflammation.
46. Sequence and mechanisms of development of vascular reactions at the site of inflammation.
47. Definition of the concept of "exudation", mechanisms of its development and biological significance in inflammation.
48. Definition of the term "emigration," stages of leukocyte emigration, mechanisms, and significance for inflammation. The term "phagocytosis," stages, mechanisms of development, and significance.
49. Definition of the concept of "proliferation", types and mechanisms of development, significance in the development of inflammation.
50. Local and general clinical signs of acute inflammation, mechanisms of their development, and significance for practical medicine. Biological significance of acute inflammation.
51. Definition of the term "chronic inflammation," its types, causes, conditions, and mechanisms of development of primary and secondary chronic inflammation. Biological significance of chronic inflammation. Differences between acute inflammation and primary chronic inflammation.
52. Definition of the concept of "acute phase response", manifestations (symptoms), mediators and proteins of the acute phase response. Biological significance of the acute phase response.
53. Definition of the term "fever," etiology, and mechanisms of fever development by stages. The biological significance of fever for the body. Similarities and differences between fever and overheating.
54. Definition of the term "tumor process." Causes and conditions of tumor development. Carcinogens, their types, and characteristics.
55. Tumor pathogenesis. Definition of the terms " proto-oncogenes ," "oncogenes," and their role in tumor development. Mechanisms of carcinogenesis by stage.
56. Types of tumors, their characteristics. Manifestations of cellular atypia of tumor cells.
57. Definition of the concept of "antineoplastic resistance", its types, mechanisms and impact on tumor growth.
58. Definition of the concept of "extreme conditions", types, development mechanisms.
59. Definition of the term "shock." Types. Etiology, pathogenesis (by stages) of traumatic shock, its consequences for the body.
60. Definition of the term "collapse," its types, causes, development mechanisms, and consequences for the body. Distinguishing collapse from shock.
61. Definition of the term "coma", types, causes, development mechanisms, stages. Consequences for the body.
62. Definition of the term "allergy." Causes of allergy development. Classification of allergens by origin and nature. Similarities and differences between allergic and immune reactions.
63. Classification of allergic reactions by type of allergen, by rate of development, by mechanism of development. Methods for identifying and studying allergic reactions.
64. Types of allergic reactions by type of tissue damage (Gell , Coombs). Causes, mechanisms of development, distinctive features of allergic reactions of types I and II from other types of allergic reactions.

65. Types of allergic reactions by type of tissue damage (Gell , Coombs). Causes, mechanisms of development, distinctive features of allergic reactions of types III and IV from other types of allergic reactions.
66. The concept of "immediate and delayed allergic reactions." Causes, development mechanisms by stage, outcomes, and examples.
67. Definition of the concepts: "desensitization", "specific desensitization" and "non-specific desensitization", examples, meaning, prevention and principles of therapy of allergic diseases.
68. Disorders of the immunobiological surveillance system, types of "immunopathological conditions", their characteristics.
69. Primary immunodeficiencies, types, causes and mechanism of development, examples.
70. Secondary immunodeficiencies, types, causes and mechanisms of development, examples.
71. Definition of the concept "hypoxia", types, classification by development mechanism.
72. Causes and mechanisms of development of exogenous and endogenous (respiratory) hypoxic hypoxia. Features of changes in blood gas composition.
73. Causes and mechanisms of development of hemic , cardiovascular, and tissue hypoxia. Features of changes in blood gas composition.
74. Definition of hypoxia. Metabolic and functional disorders in the body during hypoxia. Mechanisms of emergency and long-term adaptation to hypoxia.
75. Definition of the term "respiratory failure." Types of respiratory failure based on the location of damage to the external respiratory system.
76. Causes, mechanisms of development, criteria of obstructive and restrictive types of respiratory failure.
77. Causes, mechanisms of development, manifestations and criteria of the diffusion form of respiratory failure.
78. Causes, mechanisms of development, manifestations and criteria of perfusion and ventilation- perfusion forms of respiratory failure.
79. "Periodic breathing." Types, causes, mechanisms of development, consequences for the body.
80. "Terminal breathing." Types, causes, development mechanisms, consequences for the body.
81. Causes of impaired filtration and reabsorption function of the kidneys. Methods of determination: creatinine clearance, glomerular filtration rate.
82. Uremia, definition of the concept, causes, mechanisms of development, manifestations, consequences for the body.
83. Definition of the term "nephropathy." Types and renal impairments associated with nephropathy: changes in daily urine output, urine density, and changes in urine composition.
84. Definition of the term "nephropathy." Types, extrarenal disorders in kidney diseases (nephropathy): changes in circulating blood volume, blood pressure, and cardiac function.
85. Nephrotic syndrome, etiology, pathogenesis, clinical and laboratory manifestations.
86. Nephritic syndrome, etiology, pathogenesis. Clinical and laboratory manifestations.
87. Definition of the term "renal failure." Types, etiology, and pathogenesis of acute and chronic renal failure.
88. Definition of the term "anemia." Classification of anemias by color index, by type of hematopoiesis, bone marrow function, and pathogenesis (taking into account ethnological factors).
89. Methods for studying anemia. Pathological forms of erythrocytes are the fundamental basis for the diagnosis and study of anemia. Degenerative and regenerative forms of red blood.
90. Acute posthemorrhagic anemia. Etiology, damage phenomena ("breakdown") during acute blood loss. Stages of compensation during acute blood loss and approximate timeframes for their development in severe blood loss.
91. Stages of compensation in acute blood loss, blood picture (degenerative, regenerative forms of red blood) in acute posthemorrhagic anemia on days 9-11. Principles of therapy.
92. Etiology, pathogenesis, and blood picture of chronic posthemorrhagic anemia. Principles of therapy.
93. Acquired hemolytic anemias. Etiology, mechanism of development, clinical and laboratory characteristics of acquired hemolytic anemias (with intravascular hemolysis). Principles of therapy.
94. Hereditary hemolytic anemias. Types, causes, mechanisms of development, clinical and laboratory characteristics of hereditary hemolytic anemias (mainly with extravascular hemolysis). Principles of therapy.
95. Folic acid deficiency anemia. Types, causes, and mechanisms of development. Principles of therapy.
96. Vitamin B12 deficiency anemia. Types, causes, initial mechanisms of development, clinical and laboratory manifestations. Principles of therapy.
97. Aplastic anemia. Etiology, pathogenesis, clinical and laboratory characteristics, principles of therapy.
98. Definition of the term "leukocytosis." Main types of leukocytosis by etiology, development mechanisms, and morphological features.
99. Neutrophilic leukocytosis. Diseases characterized by absolute neutrophilic leukocytosis. "Nuclear shifts" of neutrophilic leukocytes, their types and significance.
100. Describe the main diseases and conditions of the human body in which absolute eosinophilia, basophilia, monocytosis and lymphocytosis occur.
101. The concept of "leukopenia", types of leukopenia, the main mechanisms of their development, the significance for the body.
102. Definition of the term "leukemia." Classification of leukemias by morphogenetic characteristics (by the type of affected hematopoietic cell), course, and the number of leukocytes in human peripheral blood.
103. Features of clinical and laboratory manifestations in acute and chronic leukemia.
104. Modern concepts of the etiology, pathogenesis and principles of therapy of leukemia.

105. The concept of "leukemoid reaction." Causes, mechanisms of development, and differences between the leukemoid reaction of the myeloid series and chronic myeloid leukemia.
106. Definition of the term "heart failure." Types, etiology, development mechanisms, main manifestations.
107. Overload form of heart failure. Types, causes, pathogenesis.
108. Primary myocardial heart failure. Types, causes, pathogenesis.
109. Myocardial hypertrophy. Types and mechanisms of development. Features of myocardial hypertrophy in healthy individuals and in patients with developing heart failure.
110. Features of the etiology and pathogenesis of acute and chronic heart failure.
111. Cardiac arrhythmias. Definitions. Classification of arrhythmias based on pathogenesis.
112. Main types of cardiac automatism disorders. Causes and mechanisms of sinus bradycardia and sinus tachycardia. Electrocardiographic signs and consequences for the body.
113. Main types of cardiac excitability disorders. Causes and mechanisms of extrasystole development. Electrocardiographic signs and consequences for the body.
114. The main types of cardiac conduction disorders. Causes and mechanisms of development, electrocardiographic signs, and consequences for the body.
- entry of the excitation wave . Electrocardiographic signs.
116. Arterial hypertension: definition, types. Primary arterial hypertension. Current concepts of the etiology and pathogenesis of hypertension. Consequences for the body.
117. Secondary arterial hypertension. Etiology. Pathogenesis, consequences for the body.
118. Arterial hypotension. Types. Primary and secondary hypotensions. "Hypotonic disease": definition, causes, mechanisms of development.
119. Disorders of the secretory and motor functions of the stomach. Main forms and consequences.
120. Impaired cavity digestion. Causes, mechanisms, and consequences of impaired bile and pancreatic secretion flow into the intestine.
121. Disruption of parietal (membrane) digestion. Causes, mechanisms, consequences. Pathogenesis of celiac disease, lactose intolerance. Causes and consequences of intestinal dysbiosis.
122. Impaired intestinal excretory function. Types, causes, mechanisms, consequences. Intestinal obstruction. Forms, pathogenesis. Intestinal autointoxication.
123. Gastric and duodenal ulcers. Ulcerogenesis theories . Modern concept of ulcer pathogenesis. Principles of pathogenetic therapy.
124. Consequences of removal of various sections of the gastrointestinal tract. Dumping syndrome: mechanism of development, clinical manifestations.
125. Liver failure. Main types, causes, and characteristics of metabolic and functional disorders in the body. Hepatic encephalopathy and hepatic coma. Etiology, pathogenesis, and manifestations. Consequences for the body.
126. Definition of jaundice. Types of jaundice . Suprahepatic (hemolytic) jaundice. Causes, mechanisms of development, main symptoms. Dysfunction of the body with suprahepatic jaundice.
127. Hepatic (parenchymatous) jaundice. Causes, mechanisms of development. Main symptoms. Dysfunctions of the body in parenchymatous jaundice.
128. Subhepatic (mechanical) jaundice. Causes, mechanisms of development. Main symptoms. Dysfunctions of the body in subhepatic jaundice.
129. Definition of the concept of "stress", stages, mechanisms of development and manifestation, main morphological features of general stress. Significance for the body.
130. The role of the endocrine system in disease. Causes and characteristics of endocrine system damage. The role of feedback mechanism disturbances in the development of endocrine diseases.
131. Causes, mechanisms of development, manifestations, consequences for the body of hypofunctional and hyperfunctional diseases of the adrenal cortex.
132. Causes, mechanisms of development, manifestations, consequences of hyperfunctional and hypofunctional diseases of the pituitary gland.
133. Causes, mechanisms of development, manifestations, consequences of hypofunctional and hyperfunctional diseases of the thyroid gland.
134. The role of the nervous system in disease. Causes and characteristics of damage to the nervous system (the role of the blood-brain barrier, trace reactions, and the second signaling system).
135. The main typical pathological processes of the nervous system: nervous dystrophies, denervation , deafferentation syndromes and deficiency (insufficiency) of nervous processes
136. Causes, mechanisms of development, and significance of pain syndrome for the body. The concepts of " nociceptive " and " antinociceptive " systems.
137. Pain. Nociceptive stimuli and mechanisms of their perception. Pain receptors. Mediators of pain sensitivity. Theories of pain.
138. Pathogenesis of primary and secondary hyperalgesia .
139. The antinociceptive system and its activation pathways. Principles of pain syndrome therapy.
140. Stages of fibrin clot formation. Intrinsic and extrinsic pathways of blood coagulation.
141. Classification of hemostasis disorders taking into account the etiological and pathogenetic principle.

142. Thrombocytopenic purpura: etiology, pathogenesis of thrombocytopenia, hemorrhagic syndrome, laboratory and clinical (types of bleeding) diagnostic data, principles of therapy.
143. Von Willebrand disease: etiology, pathogenesis of hemorrhagic syndrome, data from laboratory and clinical (types of bleeding) studies, principles of therapy.
144. Thrombasthenia Glanzman : etiology and pathogenesis of hemorrhagic syndrome, laboratory diagnostics, type of bleeding.
145. Hemophilia: etiology and pathogenesis of hemorrhagic syndrome, laboratory and clinical diagnostics, principles of therapy.
146. Hemorrhagic vasculitis: etiology, pathogenesis, laboratory and clinical diagnostic data, principles of therapy.
147. Disseminated intravascular coagulation (DIC) syndrome. Causes and conditions of occurrence. Pathogenesis. Laboratory and clinical diagnostic data. Principles of therapy.

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