

Questions for the exam in pathophysiology

1. Basic concepts of general nosology: health, norm, disease. Classification of etiological factors. The concept of risk factors.
2. The general action of high temperature on the body. Protective compensatory reactions and the actual pathological changes in the body during hyperthermia.
3. Pathogenic effect of low temperature on the body. Protective compensatory reactions and the actual pathological changes in the body during hypothermia.
4. Types of ionizing radiation and their pathogenic effect. Forms and stages of acute radiation sickness. Pathogenesis of its main syndromes.
5. Pathogenic factors acting on the body under high atmospheric pressure. Decompression sickness, pathogenesis. Explosive decompression.
6. Mono- and polygenic hereditary diseases. Types of inheritance, examples.
7. Chromosomal diseases, their characteristics.
8. Primary immunodeficiencies: classification, causes and mechanisms of development.
9. Secondary immunodeficiencies: causes, mechanisms of development.
10. Acquired Immunodeficiency syndrome (AIDS): etiology, mechanisms of immunological insufficiency, consequences.
11. Allergy: definition, principles of classification. Classification of allergic reactions according to Coombs and Gell.
12. Etiology of allergies. The classification of allergens. Stages of allergic reactions, their essence.
13. Arterial hyperemia: characteristics, causes and mechanisms of development, consequences.
14. Venous hyperemia: causes, signs, local and general effects.
15. Ischemia: definition, signs, causes and mechanisms of development, consequences.
16. Thrombosis: definition, basic pathogenetic factors and phases of thrombus formation.
17. Embolism: definition, types of embolism.
18. Inflammation: definition, main features, stages. Primary and secondary alteration: causes and mechanisms.
19. Mediators of inflammation, their classification. The role of lysosomal factors in the pathogenesis of the inflammatory process.
20. Violation of local blood circulation during inflammation. Mechanisms of development of arterial and venous hyperemia in the focus of inflammation.

21. Mechanisms of exudation in the inflammation. Causes and mechanisms for increasing the permeability of blood vessels.
22. The sequence and mechanisms of leukocyte emigration in the focus of inflammation. Marginal standing of leukocytes, its mechanisms.
23. General manifestations of inflammation, their pathogenesis. Proteins of the acute phase of inflammation.
24. Fever: definition, etiology. Primary and secondary pyrogens, their origin and mechanisms of action.
25. Stages of fever. Mechanisms of thermoregulation disorders at different stages of fever. Types of temperature curves.
26. Tumors: the definition, the main differences between benign and malignant tumor growth. Methods of experimental study of tumors.
27. Etiology of tumors. The role of chemical factors in the occurrence of malignant tumors. Classification and characterization of the main groups of chemical carcinogens.
28. The role of viruses in the occurrence of tumors. Classification of oncogenic viruses, stages of viral carcinogenesis.
29. Starvation. Classification. Features of absolute and incomplete starvation.
30. Characteristics of periods of full starvation with water. Features of metabolism in different periods of starvation.
31. Protein-caloric insufficiency, its forms. Pathogenesis of the main clinical manifestations.
32. Hypoglycemia. The mechanisms of its development and clinical signs. Hypoglycemic coma.
33. Hyperglycemia. The mechanisms of its development with insulin deficiency.
34. Diabetes. Definition and classification. Comparative characteristics of diabetes type I and II.
35. Causes and mechanisms of development of diabetes type I.
36. Diabetes type II, its causes. Stages of pathogenesis of diabetes type II with obesity.
37. Clinical signs of diabetes due to hyperglycemia.
38. Types of comatose conditions in diabetes. The main complications of this disease.
39. Obesity, its types. Causes of primary and secondary obesity.
40. Hereditary disorders of amino acid metabolism. Characteristics of phenylketonuria, alcaptonuria, albinism.
41. Violation of the purine bases metabolism. Gout, its risk factors, pathogenesis.
42. Extracellular dehydration, its causes, the main protective compensatory reactions of the body. Anhydremia syndrome.
43. Extracellular hyperhydria. Its causes, protective compensatory reactions of the body.

44. Edema, their classification. Mechanisms of edema development, examples of each of them.
45. Hypocalcemia. Causes, protective compensatory reactions, pathogenetic significance.
46. Rickets, its pathogenetic variants. Causes and mechanisms of the main manifestations of calciphenic and phosphopenic rickets.
47. Hypercalcemia. Causes, protective compensatory reactions, pathogenetic significance.
48. Respiratory acidosis. Causes, compensatory reactions and pathological changes in the body, indicators of acid-base balance, principles of correction.
49. Non-respiratory acidosis. Classification, causes, compensatory reactions and pathological changes in the body, indicators of acid-base balance, principles of correction.
50. Respiratory alkalosis. Causes, compensatory reactions and pathological changes in the body, indicators of acid-base balance, principles of correction.
51. Non-respiratory alkalosis. Classification, causes, compensatory reactions and pathological changes in the body, indicators of acid-base balance, principles of correction.
52. Etiology and pathogenesis of blood loss. Protective compensatory reactions of the body.
53. Qualitative changes of red blood cells: regenerative forms, degenerative changes, cells of pathological regeneration.
54. Anemia: definition, principles of classification. Hematologic and general clinical signs.
55. Posthemorrhagic anemia: types, causes, pathogenesis, blood picture.
56. Hemolytic anemia. Classification. Causes and mechanisms of erythrocyte hemolysis.
57. Hypoplastic anemia: etiology, pathogenesis, blood picture, mechanisms of the main clinical manifestations.
58. Iron deficiency anemia: etiology, pathogenesis, blood picture, mechanisms of the main clinical manifestations.
59. Megaloblastic anemia: etiology, pathogenesis, blood picture, mechanisms of the main clinical manifestations.
60. Leukocytosis: types, causes and mechanisms of development.
61. Leukopenia: types, causes and mechanisms of development. Agranulocytosis.
62. Leukemia: definition, classification. Blood picture in various types of leukemia.
63. The etiology of leukemia: the role of chemical, physical and biological factors. Evidence of viral origin of leukemia.
64. Hemorrhagic diathesis. Classification. Vasopathy: etiology and pathogenesis.
65. Thrombocytopenia and thrombocytopathy. Etiology and pathogenesis.
66. Violation of coagulation hemostasis. Causes and mechanisms of violation of individual phases of blood coagulation.

67. Disseminated intravascular coagulation syndrome. Causes and mechanisms of development.
68. Circulatory failure, principles of classification. Types of heart failure. Types of heart overload.
69. Mechanisms for immediate compensation of the heart when it is overloaded. Their essence.
70. Heart arrhythmias, their classification. Arrhythmias associated with automatism disorders. Causes and mechanisms.
71. Arrhythmias associated with impaired excitability. Causes and mechanisms. Types of extrasystoles, their characteristics.
72. Arrhythmias associated with impaired cardiac conduction. Types of heart block, their characteristics.
73. Arrhythmias resulting from the simultaneous disturbance of excitability and conduction. Causes and characteristics of atrial fibrillation.
74. Insufficiency of coronary circulation, its causes. Mechanisms of myocardial ischemia.
75. Ischemic heart disease. Myocardial infarction: etiology, pathogenesis.
76. Mechanisms of the main clinical manifestations of myocardial infarction. Cardiogenic shock.
77. Atherosclerosis, definition. Etiology, experimental models.
78. Arterial hypertension, its hemodynamic variants. Experimental models of arterial hypertension.
79. Etiology of primary arterial hypertension. The role of nerve factors, endocrine system disorders and kidneys in its development.
80. Insufficiency of external respiration. Classification. Pathogenesis of the main clinical manifestations. Mechanisms of shortness of breath.
81. Violation of alveolar ventilation. Extrapulmonary and pulmonary causes of development. Pathogenetic variants of ventilation respiratory failure.
82. Dysregulatory mechanisms of alveolar ventilation disorders. Types of violations of the frequency, depth and rhythm of breathing. Periodic and terminal respiration, their etiology and pathogenesis.
83. Restrictive respiratory failure. The causes. Pneumothorax, atelectasis.
84. Obstructive respiratory failure. The causes. The mechanism of ventilation disorders in emphysema and bronchial asthma.
85. Hypoxia. Classification. Mechanisms of development.
86. Hemic hypoxia. Causes, characteristic. Histotoxic hypoxia.
87. Protective compensatory reactions of the body during oxygen starvation, their direction.
88. Caries. Etiology and pathogenesis.

89. Gastric hypersecretion, its meaning. Experimental modeling.
90. Pathogenetic variants of gastric ulcers. Their characteristic, experimental modeling.
91. Peptic ulcer. Its etiology and pathogenesis. The role of Helicobacter pylori infection.
92. Acute pancreatitis. Etiology. Pathogenetic variants, their characteristics.
93. Pancreatic shock. Mechanisms. Major syndromes.
94. Intestinal obstruction: classification, mechanisms of the main syndromes.
95. Violation of cavitary and parietal digestion in the intestine. Syndromes of maldigestion and malabsorption. Their essence and mechanisms of development.
96. Liver failure. Principles of classification. Experimental modeling.
97. Causes and mechanisms of metabolic functions disturbances in the liver: disorders of carbohydrate, lipid, protein metabolism, metabolism of vitamins and hormones.
98. Causes and mechanisms of impaired antitoxic function of the liver. Hepatocerebral insufficiency syndrome. Hepatic coma, its variants, pathogenesis.
99. Causes and mechanisms of the excretory function disorders in the liver. Jaundice, its types. Cholemia and acholia syndromes.
100. Obstructive jaundice. Causes and mechanisms of development. Characteristics of pigment metabolism disorders.
101. Parenchymal jaundice, classification. Causes and mechanisms of development. Characteristics of pigment metabolism disorders.
102. Hemolytic jaundice. Causes and mechanisms of development. Characteristics of pigment metabolism disorders.
103. Causes and mechanisms of glomerular filtration disorders.
104. Causes and mechanisms of tubular reabsorption and secretion disorders.
105. Causes and mechanisms of quantitative changes in urine. Oliguria, anuria, polyuria.
106. Impaired renal excretory function. Causes and mechanisms of hypostenuria and isostenuria. Proteinuria, hematuria, cylindruria, leukocyturia.
107. Acute renal failure. Etiology and pathogenesis. Stages of development, their characteristics.
108. Chronic renal failure. Stages of development. Uremic syndrome and uremic coma, their pathogenesis.
109. Mechanisms of the general manifestations of kidney failure: edema, acid-base imbalance, osteodystrophy.
110. Mechanisms of the general manifestations of renal insufficiency: arterial hypertension, anemia, impaired hemostasis.

111. Dysfunction of the adenohipophysis. Pathogenesis of the main manifestations of hyper- and hypopituitarism.
112. Impairment of the neurohypophysis functions . Pathogenesis of the main manifestations.
113. Acute and chronic insufficiency of the adrenal cortex. Etiology. Pathogenesis of the main manifestations.
114. Hyperfunction of the adrenal cortex: etiology and pathogenesis of primary and secondary hyperaldosteronism.
115. Hyperfunction of the adrenal cortex: etiology and pathogenesis of Cushing's syndrome. Dysfunction of adrenal cortex: adrenogenital syndrome.
116. Hypothyroidism. The causes. Mechanisms of the main manifestations.
117. Hyperthyroidism. The causes. Mechanisms of the main manifestations.
118. Hypofunction and hyperfunction of the parathyroid glands. Etiology, pathogenesis, major manifestations.
119. Pain. Features pain sensitivity. The classification of pain. Comparative characteristics of fast (early) and slow (late) pain.
120. Violation of the motor function of the nervous system. Peripheral and central paralysis and paresis.