

List of questions to prepare for the exam

Nosology and general pathological physiology.

1. The subject and objectives of pathophysiology, its relationship with other medical disciplines and its significance for modern clinical and preventive medicine. Methods of pathophysiology. Types of experiments, its possibilities and limiting factors.
2. Disease: term definition, the difference from health. Classifications of diseases. Stages of the disease. Possible outcomes of diseases.
3. Norm, health, illness, pre-illness, its differences and examples. Criteria of the disease. The role of social factors in the development of diseases.
4. Causes and conditions of diseases: term definition, classification. The role of conditions in the development of diseases.
5. Iatrogenic diseases: term definition, causes, possibility of prevention.
6. General principles of prevention and treatment of diseases. Types of therapy: etiotropic, pathogenetic, symptomatic and its examples.
7. Pathological reaction, pathological process, pathological condition. Typical pathological processes and its examples.
8. Adaptive reactions of the body, their role in pathology.
9. Pathogenesis: term definition, leading link, "vicious circle", its role in pathology and its examples.
10. Acquired, congenital and hereditary diseases and its examples.
11. Hereditary predisposition: term definition and its examples
12. Stress: stages and mechanisms.
13. Protective, adaptive and pathogenic significance of stress.
14. Arterial hyperemia.
15. Venous hyperemia.
16. Ischemia.
17. Thrombosis.
18. Embolism.
19. Lipid metabolism disorders: types, causes, mechanisms of development, manifestations, consequences. Obesity.
20. Atherosclerosis. Development of atherosclerotic vascular lesions. The role of cytokines and other biologically active substances in the formation of atherosclerotic lesions.
21. Disorders of protein metabolism.
22. Disorders of acid-base balance (on the examples of acidosis and alkalosis).
23. Dehydration and overhydration.
24. Edema. Main pathophysiological mechanisms of its development.
25. Edema: clinical manifestations and consequences.
26. Hypoglycemia as typical pathological processes. Hypoglycemic coma.
27. Hyperglycemia as typical pathological processes.
28. Hypoxia. Metabolic and functional disorders in the body during hypoxia. Resistance of various organs and tissues to hypoxia.
29. Classification of hypoxia. Etiology and pathogenesis of the main types of hypoxia.
30. Acute and long-term adaptive reactions in hypoxia. Principles of prevention and therapy of hypoxic conditions.
31. Inflammation: term definition, etiology, components of inflammation. Biological significance of inflammation.
32. Alteration: term definition, mechanisms of development, positive and negative consequences.
33. Vascular changes during inflammation. Physical and chemical changes during inflammation.

34. Inflammatory mediators: definition, classification, sources, mechanism of action, significance in the pathogenesis of local and general reactions during inflammation.
35. Exudation: definition, mechanisms of development, positive and negative sides of exudation. Diagnostic values of different exudates.
36. Role of leukocytes in pathogenesis of inflammation. Phagocytosis.
37. Proliferation: definition, mechanisms of development.
38. Local signs of inflammation: definition, mechanisms, significance.
39. Response of the "acute phase" of inflammation: definition, components, biological role.
40. Fever: definition, etiology, principles of classification.
41. Changes in functions and metabolism during fever. The biological role of fever. Principles of therapy.
42. Stages of fever. Mechanism of development.
43. Non-pyrogenic hyperthermia: etiology, types, differences from fever. Principles of therapy.
44. Immunological reactivity. Its significance in pathology.
45. Congenital (primary) immunodeficiency states: etiology, pathogenesis, classification, clinical manifestations.
46. Acquired (secondary) immunodeficiency: etiology, pathogenesis, classification, clinical manifestations.
47. HIV infection: etiology, pathogenesis. Principles of prevention.
48. Graft-versus-host disease: etiology, pathogenesis.
49. Hypersensitivity reactions. Classification. Etiology. Classification of allergens. Common stages of allergic reactions.
50. Allergic reactions of type I.
51. Allergic reactions of type II.
52. Allergic reactions of type III.
53. Allergic reactions of type IV.
54. Tumors. Benign and malignant tumors.
55. Etiology of the tumor. Physical, chemical and biological carcinogens.
56. Carcinogenesis. Induction, promotion and progression of the tumor.
57. Features of tumor cells (biological, metabolic, antigenic, functional).
58. Biological features of the tumor and its clinical manifestation (cachexia, pain, coagulopathy, intoxication, functional disturbances). Mechanisms of tumor metastasis.
59. Mechanisms of antitumor protection: the role of NK cells, lymphocytes, macrophages and other factors. Eluding of tumor cells from the mechanisms of cancer resistance.

Pathological physiology of organs and systems

1. Acute and chronic posthemorrhagic anemia.
2. Hereditary hemolytic anemia.
3. Acquired hemolytic anemia.
4. Iron deficiency anemia.
5. B12- deficient and folate-deficient anemia.
6. Hypoplastic and aplastic anemia.
7. Sideroblastic anemia.
8. Erythrocytosis.
9. Polycythemia vera.
10. Leukocytosis and leucopenia: terms definition, classifications, causes and mechanisms of development.
11. Leukemia: definition, principles of classification. Etiology of leukemia. Features of leukemic cells.
12. Acute leukemia.
13. Chronic leukemia.
14. Leukemoid reactions: term definition, types, causes and mechanisms of development.

15. Pathology of vascular-platelet hemostasis: classification, causes and mechanisms of development, clinical manifestations.
16. Hemophilia: term definition, types, causes and mechanisms of development, clinical manifestations.
17. Disseminated intravascular coagulation: term definition, etiology, mechanisms of development.
18. Arterial hypertension.
19. Symptomatic arterial hypertension.
20. Arterial hypotension. Collapse.
21. Shock: term definition, classification, pathogenesis, organ failure due shock.
22. Coronary insufficiency: concept, etiology, pathogenesis.
23. Mechanisms of development of angina pectoris and myocardial infarction.
24. Arrhythmias: term definition, types, causes, mechanisms of development, manifestations.
25. Heart failure: term definition, classification and causes, pathogenesis.
26. Compensation mechanisms of heart failure. Features of hypertrophic myocardium.
27. Insufficiency of external breathing: term definition, classification, etiology and pathogenesis.
28. Obstructive and restrictive disorders: term definition, classification, etiology and pathogenesis.
29. Respiratory insufficiency: etiology and pathogenesis.
30. Shortness of breath: types, pathogenesis. Periodic breathing: types, mechanisms of development.
31. Digestive disorders in the oral cavity.
32. Disorders of the motor, evacuation and secretory functions of the stomach.
33. Peptic ulcer of the stomach and duodenum: etiology, mechanisms of ulceration. Complications of peptic ulcer disease.
34. Symptomatic (secondary) ulcers of the gastroduodenal zone: term definition, types, mechanisms of development.
35. Gastritis: term definition, classification, etiology, pathogenesis, clinical manifestations and complications.
36. Pancreatitis: term definition, classification, etiology, pathogenesis, clinical manifestations and complications.
37. Constipation: term definition, classification, etiology, pathogenesis, clinical manifestations and complications.
38. Diarrhea: term definition, classification, etiology, pathogenesis, clinical manifestations and complications.
39. Liver failure: term definition, etiology, types, mechanism of major metabolic and functional disorders in the body. Hepatic encephalopathy, coma.
40. Prehepatic, intrahepatic, posthepatic jaundice: etiology, pathogenesis.
41. Cholemia, acholia: term definition, causes, pathogenesis. Cholelithiasis.
42. Qualitative and quantitative changes in urine analysis: classification, mechanisms of development.
43. Acute renal failure: term definition, classification, causes, types, mechanisms of development.
44. Chronic kidney disease: term definition, causes, mechanisms of development. Uremia.
45. Glomerulonephritis: etiology and pathogenesis.
46. Causes and general mechanisms of endocrine disorders. Disorders of hypothalamic-pituitary regulation of the endocrine glands.
47. Hypo- and hyperfunction of the anterior pituitary: causes and mechanisms of disorders, clinical manifestations.
48. Insufficiency of the neurohypophysis. Diabetes insipidus.

49. Hypofunction of the adrenal cortex: causes and mechanisms, clinical manifestations. Addison's disease.
50. Hyperfunction of the adrenal cortex: causes and mechanisms, clinical manifestations. Conn's syndrome.
51. Thyroid disorders: causes and mechanisms, clinical manifestations.
52. Diabetes mellitus: types, causes, pathogenesis.
53. Main manifestations of diabetes mellitus, the mechanisms of their development.
54. The mechanism of diseases caused by alcohol intake, tobacco use, narcotic use (to present an examples).
55. Pain: definition, classification, causes.
56. Pain mediators. The damaging, protective and adaptive value of pain.
57. Mechanisms of pain.
58. Antinociceptive system. Principles of pain therapy.
59. Coma: term definition, etiology and pathogenesis of the main types of coma (diabetic, hypoglycemic, renal, hepatic).

List of examination clinical blood test

1. Acute posthemorrhagic anemia.
2. Chronic posthemorrhagic anemia.
3. Iron deficiency anemia.
4. Sideroblastic anemia.
5. B-12 (folium)-deficiency anemia.
6. Aplastic anemia.
7. Hereditary hemolytic microspherocytic anemia.
8. Thalassemia.
9. Hereditary hemolytic sickle cell anemia.
10. Hereditary hemolytic anemia due disorders of red blood cell enzymes.
11. Acquired hemolytic anemia (malaria, autoimmune).
12. Polycythemia vera.
13. Acute myeloblastic leukemia.
14. Chronic myeloid leukemia.
15. Acute lymphoblastic leukemia.
16. Chronic lymphocytic leukemia.
17. Myeloma.
18. Acute undifferentiated leukemia.
19. Leukemoid reactions.
20. Leukopenia, neutropenia.
21. Leukocytosis (neutrophilic, eosinophilic, lymphocytic).
22. Agranulocytosis.

List of examination clinical urine test

1. Quantitative and qualitative changes in the urine analysis.
2. Nephrotic syndrome.
3. Nephritic syndrome.
4. Proteinuria.
5. Diabetes mellitus.
6. Diabetes insipidus.
7. Acute renal failure: prerenal, infrarenal.
8. Chronic renal failure: uremia.
9. Hepatitis.
10. Toxic damage of tubules by mercury.