1. What pathology can be caused by hereditary disorders of intestinal absorption and renal tubular reabsorption of tryptophan and other neutral acids?

a. Parkinson disease
b. Huntington disease
c. Hartnup disease
d. Von Gierke disease
e. Hers disease

2. Examination of a 70-year-old man detected impaired motor functions. The doctor associates this with age-related changes in the hyaline cartilage. What age-related changes caused the reduction of movements in the joints?

a. Increased number of isogenous groups
b. Increased number of cartilage cells
c. Deposition of calcium salts in the intercellular substance
d. Thickening of the perichondrium
e. Increased hydrophilicity of the basal substance

3. Mucosa and sputum of a patient, who for a long time was taking immunosuppressants, contain large Gram-positive oval budding cells that are arranged chaotically and elongated cells, arranged in chains. What causative agent was detected?

a. Actinomycetales
b. Candida
c. Streptococci
d. Yersinia
e. Streptobacteria

4. A person with carbon monoxide (CO) poisoning developed headache, shortness of breath, and dizziness. These signs are caused by a drop in blood levels of a certain compound. Name this compound:

a. Carbaminohemoglobin
b. Deoxyhemoglobin
c. Oxyhemoglobin
d. Carboxyhemoglobin
e. Methemoglobin

5. A bite of a venomous snake can provoke hemolytic jaundice in a person. What blood plasma value would be the first to increase in a bitten person?

a. Direct (conjugated) bilirubin
b. Indirect (unconjugated) bilirubin
c. Urea
d. Uric acid
e. Free amino acids

6. Medical examination detected angina pectoris in a patient. The doctor prescribed the patient metoprolol that reduces the strength and frequency of cardiac contractions and, as a result, reduces the myocardial oxygen demand. What is the mechanism of the therapeutic action of this drug?

a. Blockade of beta_1-adrenergic receptors
b. Blockade of beta_2-adrenergic receptors
c. Stimulation of beta_1-adrenergic receptors
d. Blockade of nicotinic acetylcholine receptors
e. Blockade of muscarinic acetylcholine receptors

7. A patient with type 2 diabetes mellitus has been prescribed a drug that, besides a hypoglycemic effect, has a hypocholesterolemic effect as well. This drug is a sulfonylurea derivative. What drug is it?

a. Insulin
b. Prednisolone
c. Novocainamide (Procainamide)

d. Glibenclamide
e. Acarbose

8. A woman was diagnosed with a cerebral tumor on the ventral surface of the pons. In what artery will a slowdown of blood flow be observed?
a. A) basilaris
b. A) cerebri media
c. A) cerebri anterior
d. A) carotis interna
e. A) communicans posterior

9. A 66-year-old man has been diagnosed with a malignant epithelial tumor originating from a medium-sized bronchus. What epithelium is the source of the tumor development?
a. Pseudostratified ciliated epithelium
b. Pseudostratified transitional epithelium
c. Unstratified prismatic epithelium
d. Stratified keratinized epithelium
e. Stratified non-keratinized epithelium

10. A patient diagnosed with polyneuropathy was prescribed vitamin B_1. Name the coenzyme form of this vitamin:
a. Tetrahydrofolate
b. Thiamine diphosphate
c. Nicotinamide adenine dinucleotide phosphate
d. Pyridoxal phosphate
e. Flavin adenine mononucleotide

11. Disturbed activity of trypsin and chymotrypsin leads to disturbed protein breakup in the small intestine. Activity of these enzymes depends on the presence of the following factor:
a. Enterokinase
b. Hydrochloric acid
c. Na^+ salts
d. Pepsin
e. Bile acids

12. In a 60-year-old patient, cerebral hemorrhage caused prolongation of the time spent sleeping. What structure is most likely to be damaged in this case, causing this condition?
a. Substantia nigra
b. Corpora quadrigemina
c. Hippocampus
d. Cerebral cortex
e. Reticular formation

13. A 6-year-old girl presents with acute onset of a disease. She developed sore throat and high temperature that were later accompanied by a punctate skin rash. Oral examination reveals acute pharyngeal hyperemia, raspberry tongue, and enlarged bright red tonsils with dull gray and yellow foci that spread to the peritonsillar tissues. The submandibular lymph nodes are enlarged. What disease are these changes characteristic of?
a. Pharyngeal diphtheria
b. Scarlet fever
c. Laryngeal diphtheria
d. Measles
e. Meningococcal nasopharyngitis

14. A 45-year-old man with acute pneumonia was prescribed a penicillin antibiotic. However, when tested for personal tolerance to this antibiotic, he developed an allergic response. What drug should be prescribed for treatment instead?
a. Ciprofloxacin
b. Bicillin-5

c. Benzylpenicillin
d. Phenoxymethylpenicillin
e. Erythromycin

15. A 54-year-old man was diagnosed with macrofocal myocardial infarction of the left ventricle anterior wall. In which artery is the blood flow impaired in this case?
a. Anterior interventricular branch of the right coronary artery
b. Atrial branches of the left coronary artery
c. Circumflex branch of the left coronary artery
d. Posterior interventricular branch of the right coronary artery
e. Right coronary artery

16. Histology of the cardiac auricle in a patient with mitral valve stenosis revealed Aschoff-Talalayev granulomas. What genesis of heart disease is in this case evident, according to this histological study?
a. Congenital
b. Septic
c. Syphilitic
d. Rheumatic
e. Atherosclerotic

17. Ultrasound of a pregnant woman shows normal functioning of the fetal cardiovascular system and ductus arteriosus. What vessels are connected by the ductus arteriosus?
a. Pulmonary trunk and inferior vena cava
b. Pulmonary trunk and superior vena cava
c. Umbilical vein and umbilical artery
d. Umbilical vein and aorta
e. Pulmonary trunk and aorta

18. A patient with severe poisoning was brought into the intensive care unit. In the course of complex treatment the subclavian vein needs to be catheterized for medicine administration. This vein is located in the following topographic structure:
a. Spatium interscalenum
b. Spatium antescalenum
c. Trigonum omotrapezoideum
d. Spatium retrosternocleidomastoideus
e. Spatium interaponeuroticum suprasternale

19. Histology of a lymph node revealed numerous enlarged lymphoid follicles with croupous proliferation centers that have a large number of mitotic figures. What is indicated by these changes?
a. Atrophy of lymphoid tissue
b. Lymphosarcoma
c. Lymphocytic leukemia
d. Lymphogranulomatosis
e. Antigen stimulation with follicular hyperplasia

20. A 49-year-old patient complains of persistently elevated blood pressure (155/120 mm Hg). The recommended hypotensive therapy, lasting for a month, was ineffective. Additional examination detected hypernatremia, hypochloremia, and adrenal hyperplasia. The diagnosis of primary hyperaldosteronism was made. Because surgical treatment was impossible in this case, the patient was recommended a pharmacological therapy with a mineralocorticoid receptor antagonist. What drug was recommended for the patient?
a. Amlodipine
b. Spironolactone
c. Losartan
d. Metoprolol
e. Captopril

21. X-ray shows a shadow in the right maxillary sinus, which indicates an accumulation of pus. Into what nasal meatus will this pathological fluid be discharged?

a. Right supreme nasal meatus
b. Right inferior nasal meatus
c. Right superior nasal meatus
d. Right common nasal meatus
e. Right middle nasal meatus

22. A patient diagnosed with AIDS has a tumor on his leg. The tumor slightly protrudes above the skin and looks like a painless spot. Histologically, the removed tumor can be characterized by incomplete angiogenesis, proliferation of spindle-shaped cells that form chaotically intertwined bundles, and growth of granulation tissue of varying maturity with infiltration by immunocompetent cells. Vascular proliferates are surrounded by edematous loose connective tissue. There are hemosiderin deposits. What is the most likely diagnosis in this case?
a. Angiofibrosarcoma
b. Fibrosarcoma
c. Hemangioendothelioma
d. Kaposi's sarcoma
e. Malignant pericytoma

23. In stress conditions an elderly person developed elevated blood pressure. It is caused by activation of:
a. Parasympathetic nucleus of the vagus nerve
b. Sympathoadrenal system
c. Pituitary functions
d. Adrenocortical functions
e. Thyroid functions

24. A patient is allergic to pollen. How should the specific hyposensitization of the body be carried out?
a. Administration of corticosteroid drugs
b. Administration of an antispasmodic drug
c. Repeated introduction of large doses of the allergen, with gradually reducing doses
d. Repeated introduction of small doses of the allergen, with gradually increasing doses
e. Administration of an anesthetic

25. A patient presents with tachycardia, increased basal metabolic rate and body temperature, weight loss, and increased exitability. These disorders are caused by the increased secretion of hormones in the:
a. Parathyroid glands
b. Gonads
c. Adrenal glands
d. Thyroid gland
e. Neurohypophysis

26. A 55-year-old patient underwent a kidney transplantation. What immunotropic agent should be prescribed in this case?
a. Prednisolone
b. Thymus extract
c. Sodium nucleinate
d. \gamma globulin
e. Levamisole

27. A 65-year-old patient has been hospitalized with complaints of a feeling of heaviness in the subcostal regions, enlarged lymph nodes, general weakness, and headache. Examination revealed the following: hepatosplenomegaly, erythrocytes - 2.3·10^12/L, leukocytes - 90·10^9/L, lymphocytes - 75%, ESR - 35 mm/hour, numerous Gumprecht shadows in the smear prepared from the peripheral blood. What disease can be characterized by such a clinical presentation?
a. Acute lymphocytic leukemia
b. Chronic lymphocytic leukemia

c. Acute myeloid leukemia
d. Iron deficiency anemia
e. Chronic myeloid leukemia

28. An extrasystole caused by excitation in one of the ventricles leads to:
a. Prolonged compensatory pause of the ventricle
b. Complete block of excitation conduction in the ventricles
c. Compensatory pause of the atria
d. Increased rate of excitation conduction in the ventricles
e. Decreased rate of excitation conduction in the atria

29. The surgeon noticed aggregated lymphoid nodules (Peyer's patches) on the intestinal mucosa. What portion of the intestine is it?
a. Rectum
b. Ileum
c. Cecum
d. Jejunum
e. Duodenum

30. A 24-year-old woman was hospitalized with complaints of headache, lumbar pain, face edema, and general weakness. One month ago she had a case of tonsillitis. On admission into the hospital her blood pressure is 180/110 mm Hg. In urine: marked proteinuria, microhematuria, leukocyturia. What type of hypertension is it?
a. Essential hypertension
b. Hypertensive disease
c. Primary hypertension
d. Renal hypertension
e. Endocrine hypertension

31. A 48-year-old man is unconscious. He has a history of several syncopal episodes with convulsions. ECG shows deformed QRS complexes unconnected with P waves, atrial contractions are approximately 70/min., ventricular contractions - 25-30/min. Name the type of arrhythmia in this case:
a. Complete atrioventricular block
b. Intraatrial block
c. Second-degree atrioventricular block
d. First-degree atrioventricular block
e. Intraventricular block

32. A 40-year-old man, a butcher, died of sepsis. On his right cheek there is a dense dark-red cone-shaped infiltration, 6 cm in size, with a black scab in its center. The right half of his face and neck are markedly swollen and dense. In the infiltration, microscopy detects a peracute sero-hemorrhagic inflammation. Epidermis and its underlying layers are necrotic in the center of the infiltration. What diagnosis was made by the pathologist?
a. Plague
b. Phlegmon of the neck
c. Tularemia
d. Furuncle
e. Anthrax

33. Patients diagnosed with diabetes mellitus often present with inflammatory processes, reduced regeneration, and slow healing of wounds. What is the cause of this phenomenon?
a. Intensified catabolism
b. Increased lipolysis
c. Decreased proteosynthesis
d. Accelerated gluconeogenesis
e. Decreased lipolysis

34. A woman gave birth to a stillborn child with maldevelopments. What protozoan disease could

have caused the intrauterine infection of the fetus?
a. Trichomoniasis
b. Toxoplasmosis
c. Trypanosomiasis
d. Leishmaniasis
e. Malaria

35. A patient with pollinosis after a travel to the countryside developed edemas of lips and eyelids, lacrimation, nasal discharge, and a burning sensation in the eyes. What is the main mechanism of edema development in this case?
a. Increased permeability of the capillaries
b. Disturbed lymph efflux
c. Increased capillary hydrostatic pressure
d. Increased interstitial oncotic pressure
e. Increased blood oncotic pressure

36. What substance indicates increased putrefaction processes in the intestines of a patient with intestinal obstruction, if its excretion with urine has increased?
a. Urobilin
b. Uric acid
c. Urea
d. Creatinine
e. Indican

37. When studying an isolated excitatory cell, it was determined that the cell's threshold stimulation force had significantly decreased. What could have caused it?
a. Activation of membrane sodium channels
b. Inactivation of membrane sodium channels
c. Activation of membrane potassium channels
d. Inactivation of membrane calcium channels
e. Blockade of energy production in the cell

38. Enzyme lecithin-cholesterol acyltransferase (LCAT) catalyzes the reaction of cholesterol ether synthesis. It occurs when fatty acid residue transfers from the C-2 position of choline phosphatide (lecithin) to cholesterol. With what fatty acid does cholesterol produce ethers?
a. Palmitic acid
b. Lauric acid
c. Stearic acid
d. Linoleic acid
e. Myristic acid

39. A 56-year-old patient with heart failure has edema of feet and shins. The skin in the edematous area is pale and cold. What is the leading link of edema pathogenesis in this patient?
a. Increased hydrostatic pressure in the venules
b. Disturbed lymph efflux
c. Positive fluid balance
d. Decreased oncotic pressure in the capillaries
e. Increased permeability of the capillaries

40. Wernicke-Korsakoff syndrome often develops in chronic alcoholics, who have a low-vitamin diet. Decreased transketolase activity can be observed in the course of this disease. What vitamin deficiency causes this development?
a. Retinol
b. Thiamine
c. Cobalamin
d. Niacin
e. Riboflavin

41. Autopsy of the body of a man who died of croupous pneumonia revealed an opaque liquid in the

pleural cavity and a grayish film on the visceral pleura. What type of inflammation is observed on the visceral pleura?

a. Hemorrhagic
b. Purulent
c. Fibrinous
d. Granulomatous
e. Catarrhal

42. Examination of a man detects skin calcification, Raynaud syndrome, an esophageal motility disorder, sclerodactyly, and telangiectasia. These changes are called CREST syndrome and are characteristic of the following disease:

a. Systemic scleroderma
b. Gouty arthritis
c. Systemic lupus erythematosus
d. Dermatomyositis
e. Rheumatoid arthritis

43. In a poorly ventilated and overcrowded room an elderly man has developed increased blood pressure. What is the mechanism of this reaction?

a. Depressor reflex from chemoreceptors
b. Depressor reflex from osmoreceptors
c. Pressor reflex from osmoreceptors
d. Pressor reflex from volume receptors
e. Pressor reflex from chemoreceptors

44. In a 50-year-old patient, the processes of protein degradation in the intestine intensified after a gastric resection. What urine value will increase in this case, indicating the patient's condition?

a. Animal indican
b. Stercobilinogen
c. Oxyproline
d. Uric acid
e. Creatinine

45. Cases of tonsillitis are observed among the children at a boarding school. Microscopy of smears from the tonsils, stained using the Neisser method, detects thin yellow bacilli with dark brown granules at their ends, arranged in the form of the Roman numeral five. What infection can be suspected in this case?

a. Diphtheria
b. Listeriosis
c. Scarlet fever
d. Tonsillitis
e. Infectious mononucleosis

46. A patient with peptic ulcer disease was prescribed famotidine. As a result his gastric juice acidity significantly decreased. What is the mechanism of action of this drug?

a. Muscarinic M1 receptor blockade
b. Blockade of histamine receptors in the sympathetic ganglia
c. Histamine H2 receptor blockade
d. Inhibition of H^+, K^+-ATPase activity
e. Histamine H1 receptor blockade

47. Lipoic acid was removed from the diet of test animals, which resulted in inhibition of pyruvate dehydrogenase complex in these animals. What is the function of lipoic acid in relation to this enzyme?

a. Substrate
b. Allosteric regulator
c. Product
d. Cofactor

e. Inhibitor

48. A patient, who has been undergoing treatment for neurosis with Sibazone (Diazepam), developed a toothache. A doctor prescribed the patient an analgesic in the dose that was lower than the average therapeutic dose. What phenomenon did the doctor take into account when reducing the dose of the drug?

a. Cumulation
b. Tolerance
c. Addiction
d. Potentiation
e. Summation

49. A patient diagnosed with rheumatoid arthritis had been taking glucocorticoid drugs for several weeks and then suddenly stopped taking them. What complication can develop in this case?

a. Exacerbation of chronic infectious processes
b. Increased blood pressure
c. Withdrawal syndrome
d. Ulceration of gastric and duodenal mucosa
e. Hyperglycemia

50. The medicines that inhibit blood clotting (anticoagulants) are used for prevention and treatment of thrombosis. What anticoagulant can be neutralized by protamine sulfate as its antagonist, in case of overdosage?

a. Heparin
b. Neodicoumarin (Ethyl biscoumacetate)
c. Phenylin (Phenindione)
d. Syncumar (Acenocoumarol)
e. Sodium hydrocitrate

51. Ammonia is extremely toxic for human CNS. What is the main way of ammonia neutralization in the nervous tissue?

a. Formation of paired compounds
b. Transamination
c. Glutamine synthesis
d. Ammonium salts synthesis
e. Urea synthesis

52. A patient complaining of nausea and heartburn after meals, and steatorrhea came to the gastroenterologist. What is the likely cause of the patient's condition?

a. Increased lipase production
b. Bile acid deficiency
c. Disturbed phospholipase synthesis
d. Amylase deficiency
e. Disturbed pepsin synthesis

53. Tubocurarine chloride was used during dislocation reduction in a patient. Soon the patient developed overdose symptoms. What drug should be used to eliminate these symptoms?

a. Morphine
b. Furosemide
c. Omeprazole
d. Dithylin (Suxamethonium)
e. Prozerin (Neostigmine)

54. The synthesis of dioxyphenylalanine (DOPA) in the limbic system of the brain provokes a feeling of fear in a person. DOPA is synthesized from the following amino acid:

a. 5-Oxytryptophan
b. Lysine
c. Tyrosine
d. Glutamic acid

e. Tryptophan

55. During inflammation modelling in a frog's mesentery, leukocyte margination and emigration through the vessel wall were observed. What factor causes this process?

a. Decreased hydrostatic pressure in the vessels
b. Increased hydrostatic pressure in the vessels
c. Decreased oncotic pressure in the vessels
d. Increased oncotic pressure in the inflammation focus
e. Effect of chemotaxic substances

56. A 44-year-old man developed a sharp drop in blood pressure before his death. Autopsy of the body shows an aortic arch aneurysm up to 10 cm in diameter. The aortic intima in its ascending part and in the arch looks wrinkled and is exfoliated; between the intima and the aortic media there are blood clots. In the aortic media, microscopy detects large foci of infiltration with lymphoid, plasma, and epithelioid cells, destruction of elastic fibers, proliferation of connective tissue, and vasculitis vasa vasorum. What disease can be characterized by these changes?

a. Syphilitic mesaortitis
b. Rheumatic aortitis
c. Nodular polyarteritis
d. Atherosclerotic aortic aneurysm
e. Nonspecific aortoarteritis

57. It is known that not all sensory signals are consciously registered by a person. This way brain separates important information from less important information. What part of the brain plays the main role in this process?

a. Basal ganglia
b. Cerebellum
c. Cerebral cortex
d. Thalamus
e. Hypothalamus

58. In the intensive care unit of the infectious diseases department, a doctor notes periods of tachypnea, intermittent with long periods of apnea, in a patient with meningococcal meningitis. What is this type of pathological respiration?

a. Gasping respiration
b. Biot respiration
c. Apneustic respiration
d. Cheyne–Stokes respiration
e. Grocco respiration

59. Examination of a 32-year-old patient detects a disproportional structure of the skeleton and enlarged brow ridges, nose, lips, tongue, jawbones, and feet. What is the likely cause of the development of these disorders?

a. Increased levels of somatotropic hormone
b. Increase catecholamine levels
c. Increase glucagon levels
d. Increased thyroxine levels
e. Decreased insulin levels

60. A patient diagnosed with pulmonary tuberculosis underwent a treatment with isoniazid. Recently, the patient has developed signs of hypovitaminosis B_6. What is the cause of the pathological condition in this case?

a. Isoniazid is an antagonist of vitamin B_6
b. Vitamin biotransformation is accelerated
c. A strong bond forms between the vitamin and blood plasma proteins
d. Vitamin absorption is slowed down
e. Vitamin elimination is accelerated

61. During periodic medical examination, a person with no health complaints presents with

leukocytosis. This sign can be detected if blood sample for the analysis was obtained after:
a. Rest at a resort
b. Mental exertion
c. Alcohol drinking
d. Physical exertion
e. Drinking large amounts of water

62. A patient, who was in the area of radiation exposure, developed increased concentration of malondialdehyde and hydroperoxides in the blood. Name the likely cause of these changes:
a. Increased cholesterol levels
b. Increased lactic acid levels
c. Decreased levels of blood proteins
d. Increased number of ketone bodies
e. Increased number of oxygen radicals and activation of lipid peroxidation

63. A test animal receives electrical impulses that irritate the sympathetic nerve that innervates blood vessels of the skin. What reaction will it cause in the blood vessels?
a. Arterial and venous dilation
b. Arterial dilation
c. Venous dilation
d. Arterial and venous constriction
e. No reaction

64. A patient developed signs of mucosal inflammation in the anterior and middle ethmoidal cells. Through what structure of the nasal cavity was the infection able to spread in this case?
a. Choanae
b. Middle nasal meatus
c. Superior nasal meatus
d. Common nasal meatus
e. Inferior nasal meatus

65. On the second year of his life a boy started developing frequent respiratory diseases and ulcerative skin lesions. It was determined that immunoglobulins of all classes are practically absent in the child's blood. The described syndrome is based on decreased functional activity of a certain cell population. Name this cell population:
a. Neutrophils
b. T lymphocytes
c. B lymphocytes
d. Macrophages
e. NK cells

66. A patient with obliterating endarteritis has undergone a ganglionic sympathectomy. Positive therapeutic effect of this surgery is associated with development of arterial hyperemia of the lower limbs, which can be described as:
a. Neuroparalytic
b. Neurotonic
c. Reactive
d. Metabolic
e. Working

67. As a result of an abdominal trauma, one of the muscles that form the superior wall of the inguinal canal was damaged. Name this muscle:
a. M. rectus abdominis
b. M. pyramidalis
c. M. obliquus externus abdominis
d. M. quadratus abdominis
e. M. obliquus internus abdominis

68. After a maxillofacial injury, a 40-year-old man developed a disfunction of the sublingual and

submandibular glands on the left. Hyposalivation is observed in the affected glands. What nerve does not function properly in this case?

a. Cranial nerve VI
b. Cranial nerve XII
c. Cranial nerve X
d. Cranial nerve XI
e. Cranial nerve VII

69. A woman with I (O) Rh- blood group married a man with IV (AB) Rh+ blood group. What blood type and Rh factor can be expected in the children of this couple (excluding the Bombay phenotype)?

a. IV (AB) Rh-
b. IV (AB) Rh+
c. I (O) Rh+
d. I (O) Rh-
e. III (B) Rh+

70. Bioactive substances hormones are produced as a result of hydrolysis and modification of certain proteins. What protein in the pituitary gland is the source of lipotropin, corticotropin, melanotropin, and endorphin?

a. Neurostromin
b. Neuroglobulin
c. Proopiomelanocortin (POMC)
d. Neuroalbumin
e. Thyroglobulin

71. A histological specimen shows three neurons: pseudounipolar, bipolar, and multipolar. How many axons can be determined in the each one of the listed cell types?

a. None
b. Many
c. Two
d. One
e. Three

72. A brown neoplasm 0.5 cm in diameter was detected in the skin sample 1x2 cm in size that was sent for histological testing. Microscopy shows that the tumor consists of cells in the form of cords and nests located in the dermis, with a brown pigment in the cytoplasm, which produces negative results of Perls reaction. What pigment has been detected in this case?

a. Hemosiderin
b. Melanin
c. Hematoidin
d. Hemomelanin
e. Bilirubin

73. Various substances can be used as anticoagulants, including natural polysaccharides. Select a natural polysaccharide among the substances listed below.

a. Hyaluronic acid
b. Heparin
c. Vitamin K
d. Dextran
e. Enoxaparin

74. Oxygen supply of an isolated mammalian nerve cell was completely stopped. How will the resting potential change in this case?

a. Decrease significantly
b. Increase insignificantly
c. Increase significantly
d. Disappear
e. Remain unchanged

75. Increased levels of ammonium salts in the patient's urine can be associated with the development of a pathological condition. What pathological condition is likely in such cases?

a. Retention azotemia
b. Hypercholesterolemia
c. Steatosis
d. Hyperuricemia
e. Metabolic acidosis

76. This screening method is the first stage of diagnosing diseases caused by metabolic disorders, after which more accurate methods of studying enzymes and amino acids are used. Name the described method.

a. Immunological method
b. Biochemical method
c. Cytogenetic method
d. Somatic cell hybridization
e. Population statistics

77. A patient has been provisionally diagnosed with toxoplasmosis. What biological material was used to diagnose this disease?

a. Feces
b. Blood
c. Urine
d. Duodenal contents
e. Sputum

78. A patient has been diagnosed with atrophy of masticatory muscles. This group of muscles is innervated by branches of the following cranial nerve:

a. Motor branches of the VII cranial nerve
b. Hypoglossal nerve
c. First branch of the trigeminal nerve
d. Second branch of the trigeminal nerve
e. Third branch of the trigeminal nerve

79. Histological slide of the biopsy material obtained from epidermis of a healthy adult shows dividing cells in the basement layer. What process occurs due to these cells?

a. Physiological regeneration
b. Reparative regeneration
c. Adaptation
d. Apoptosis
e. Differentiation

80. A patient presents with a pinpoint pupil that does not dilate, when the lighting changes. Where was the central nervous system damaged?

a. Lateral geniculate body in the diencephalon
b. Superior colliculi in the midbrain tectum
c. Lateral horn of the spinal cord's gray matter at the level of C8-Th1
d. Pes pedunculi at the level of the inferior colliculi in the midbrain tectum
e. Cerebral peduncles at the level of the superior colliculi in the midbrain tectum

81. Cushing disease (hyperfunction of the adrenal cortex with increased production of corticosteroids) leads to the development of hyperglycemia. What process is stimulated in this case?

a. Krebs cycle
b. Gluconeogenesis
c. Glycolysis
d. Glycogen phosphorolysis
e. Pentose phosphate pathway of glucose oxidation

82. A 3-year-old child has been brought by ambulance to the intensive care unit of the infectious diseases hospital. On examination the child is in severe condition, skin and mucosa are dry, tissue

turgor is reduced. The patient's history states that profuse diarrhea and recurrent vomiting were observed throughout the previous day after the child had eaten food products of poor quality. What type of salt and water imbalance is likely to have developed in the patient?

a. Isoosmolar hyperhydration
b. Hypoosmolar hyperhydration
c. Hypoosmolar dehydration
d. Isoosmolar dehydration
e. Hyperosmolar hyperhydration

83. A patient with chronic glomerulonephritis has edema, blood pressure of 210/100 mm Hg, heart rate of 85/min., and expanded border of the heart. What is the main mechanism of arterial hypertension development?

a. Increased activity of sympathetic nervous system
b. Hyperfunction of the heart
c. Increased vasopressin production
d. Increased volume of circulating blood
e. Activation of renin-angiotensin- aldosterone system

84. After a baby is born, the vascular system of the newborn undergoes changes associated with the transition from the placental circulation to the pulmonary circulation. What blood vessel transforms into the round ligament of the liver as a result of this process?

a. V. umbilicalis
b. Ductus arteriosus
c. A) umbilicalis dextra
d. A) umbilicalis sinistra
e. Ductus venosus

85. A 4-year-old child has hepatomegaly and hypoglycemia. Biochemistry detects a deficiency of glucose-6-phosphatase. What disease is likely in this case?

a. Phenylketonuria
b. Pompe disease
c. Alkaptonuria
d. Tay-Sachs disease
e. Von Gierke disease

86. During practical classes the students were studying a stained smear of mouse blood, where the process of heterophagy occurred. What organelles play the key role in this process?

a. Mitochondria
b. Lysosomes
c. Golgi apparatus
d. Ribosomes
e. Granular endoplasmic reticulum

87. Based on the clinical data, the patient was provisionally diagnosed with acute pancreatitis. What biochemical test can confirm this diagnosis?

a. Alkaline phosphatase activity in blood
b. Acid phosphatase activity in blood
c. Blood aminotransferase activity
d. Blood creatinine levels
e. Blood amylase activity

88. A doctor measures the external dimensions of the pelvis and determines the distance between the greater femoral trochanters. What dimension is being measured by the doctor?

a. Diameter oblique
b. Conjugata externa
c. Distantia intertrochanterica
d. Distantia intercristalis
e. Distantia interspinosa

89. A 22-year-old woman came to a dermatologist with complaints of a purulent rash on her face and back. Her medical record indicates a H. pylori infection. Taking into account this concomitant pathology, the doctor prescribed her an antibacterial drug that will be effective both against the pathogens of soft tissue infections and against H. pylori. What antibacterial drug did the doctor prescribe?

a. Rifampicin
b. Isoniazid
c. Fluconazole
d. Clarithromycin
e. Oseltamivir

90. A 3-year-old child with elevated body temperature has taken aspirin and developed increased hemolysis of erythrocytes. In this case hemolytic anemia can be caused by congenital deficiency of the following enzyme:

a. Glycogen phosphorylase
b. Gamma-glutamyl transferase
c. Glucose 6-phosphate dehydrogenase
d. Glycerol-phosphate dehydrogenase
e. Glucose 6-phosphatase

91. A middle-aged man left for another country for a job position promised to him, but for a long time was unable to find a job instead. What endocrine glands in his body would be most exhausted in this situation?

a. Thyroid gland
b. Parathyroid glands
c. Adrenal glands
d. Thymus
e. Testicles

92. A 10-year-old child underwent a Mantoux test (with tuberculin). After 48 hours, a papule up to 8 mm in diameter appeared at the site of tuberculin injection. What type of hypersensitivity reaction developed after administration of tuberculin?

a. Serum sickness
b. Atopic reaction
c. Arthus reaction
d. Type II hypersensitivity reaction
e. Type IV hypersensitivity reaction

93. A certain natural antioxidan is used in treatment of parodontosis. Which of the listed natural compounds is used as an antioxidant?

a. Choline
b. Thiamine
c. Tocopherol
d. Pyridoxine
e. Gluconate

94. In fatty infiltration of the liver, the synthesis of phospholipids is disrupted. In this case, the patients are advised to eat more cottage cheese, because it contains a certain substance that can enhance the methylation process in the synthesis of phospholipids. Name this substance:

a. Ethanolamine
b. Calcium
c. Glycerin
d. Methionine
e. Cysteine

95. In the practice of emergency therapy and resuscitation, medical conditions accompanied by edema of brain cells are often encountered. To combat this condition, patients need to be administered substances with a certain effect. What effect do these substances have?

a. They lower the central venous pressure
b. They change the acid-alkaline balance of the blood
c. They lower the systemic arterial pressure
d. They increase the colloid osmotic blood pressure
e. They reduce the volume of the circulating blood

96. What component of a human diet cannot be digested in the gastrointestinal tract, but nevertheless is a necessary part of nutrition?
a. Protein
b. Starch
c. Sucrose
d. Cellulose
e. Lipids

97. Analysis of the primary structure of a globin molecule revealed that glutamic acid had been replaced with valine. What hereditary pathology is it characteristic of?
a. Minkowski-Chauffard disease
b. Thalassemia
c. Hemoglobinosis
d. Favism
e. Sickle cell anemia

98. On examination a woman presents with a swelling, distended veins, and node formation on the medial surface of her thigh. It is a pathology of the following vein:
a. V. saphena parva
b. V. saphena magna
c. V. poplitea
d. V. femoralis
e. V. iliaca externa

99. Allergologist examined a patient and diagnosed him with pollinosis. What technique can be used for allergen-specific desensitization?
a. Fractional introduction of allergen
b. -
c. Introduction of physiological saline
d. Glucocorticoids
e. Antihistamines

100. The patient has lost tactile and thermal sensitivity because of a head injury. What gyrus was damaged in the brain in this case?
a. Postcentral gyrus
b. Cingulate gyrus
c. Precentral gyrus
d. Angular gyrus
e. Supramarginal gyrus

101. A patient has developed status epilepticus. What medicine should be used in this case to stop the seizures?
a. Valerian extract
b. Diprazine (Promethazine)
c. Sodium bromide
d. Cyclodol (Trihexyphenidyl)
e. Diazepam

102. Intracellular examination of biopotentials in an isolated tissue culture shows that the action potentials that develop in the cells can be characterized by a plateau for up to 300 milliseconds in the repolarization phase. What tissue is being studied?
a. Atypical cardiac muscle cells
b. Smooth muscle

c. Contractile myocardium
d. Nerve fiber
e. Skeletal muscle

103. Alveoli of the lungs have special cells, through which gas exchange occurs. These cells are a part of the blood-air barrier. Name these cells.
a. Alveolar macrophages
b. Alveolar type II cells
c. Clara cells
d. Alveolar type I cells
e. Microvillous epithelial cells

104. X-ray detects a shadow in the area of the patient's dural sinus that runs from the crista galli of the ethmoid bone of the skull to the internal occipital protuberance. In this case, pathological changes can be detected in the area of the following sinus:
a. Sinus transversus
b. Sinus rectus
c. Sinus sagittalis superior
d. Sinus sigmoideus
e. Sinus sagittalis inferior

105. Autopsy of a 49-year-old woman who died of chronic kidney failure shows small dense striated kidneys with areas of hemorrhages. Microscopically nuclei of epithelial channels contain hematoxylin bodies; glomerular capillaries resemble wire loops, have thickened basement membranes, and in places contain hyaline thrombi and foci of fibrinoid necrosis. What is the most likely diagnosis?
a. Amyloidosis
b. Rheumatism
c. Arteriolosclerotic nephrosclerosis
d. Systemic lupus erythematosus
e. Atherosclerotic nephrosclerosis

106. With the development of medical genetics, it became possible to recover with the help of diet therapy from some hereditary diseases that were previously considered incurable. Currently, it mostly concerns the following medical condition:
a. Tay-Sachs disease
b. Phenylketonuria
c. Hemophilia
d. Achondroplasia
e. Color blindness

107. Ingestion of 100 mL of 25% magnesium sulfate solution (saturated) results in profuse liquid stool. Why does it occur?
a. Stimulation of gastric juice secretion
b. Stimulation of hormone secretion in the duodenum
c. Inhibition of intestinal motility
d. Increase of intestinal osmotic pressure
e. Decrease of osmotic pressure

108. A culture of tumor cells was treated with colchicine that blocks the formation of tubulin proteins that form the division spindle. What stages of the cell cycle will become disturbed as a result?
a. Postsynthetic phase
b. Synthetic phase
c. Mitosis
d. Presynthetic phase
e. G0 phase

109. A patient with scurvy presents with impaired hydroxylation of collagen proline and lysine. What biochemical process is inhibited in this case, being the reason for this disorder?
a. Peroxidase oxidation of fats

b. Lipid peroxidation
c. Microsomal oxidation
d. Oxidative phosphorylation
e. Tissue respiration

110. A 48-year-old man with signs of bilateral spontaneous pneumothorax died. Autopsy of the body detects in his both lungs subpleural blisters 1-3 cm in diameter, filled with air. Outside the blisters, the lungs exhibit increased airiness, the tissue crunches when being cut. What pulmonary pathology is observed in the deceased?
a. Interstitial pulmonary emphysema
b. Bullous pulmonary emphysema
c. Senile pulmonary emphysema
d. Idiopathic pulmonary emphysema
e. Diffuse obstructive pulmonary emphysema

111. In hepatitis and myocardial infarction, the activity of alanine and aspartate aminotransferases sharply increases in the patients' blood plasma. Why does this increase in the activity of these enzymes in the blood occur?
a. Hormone-induced increase in enzyme activity
b. Pyridoxine deficiency
c. Amino acid synthesis acceleration in tissues
d. Amino acid breakdown acceleration in tissues
e. Damage to cell membranes and release of enzymes into the blood

112. A patient with a chronic pulmonary disease developed restrictive respiratory failure. What is the most likely cause of this development?
a. Airway compression due to a tumor
b. Inflammatory processes in the lungs
c. Laryngospasm
d. Foreign body in the bronchial lumen
e. Disturbed mucociliary transport and accumulation of mucus

113. In a patient, the duration of the PQ interval in the ECG exceeds the norm, while the duration of the P wave remains normal. This phenomenon is caused by a decreased speed of excitation conduction in a certain structure. Name this structure.
a. Atrioventricular node
b. His' bundle branches
c. Purkinje fibers
d. Sinoatrial node
e. His' bundle

114. During haymaking time, one of the workers developed high body temperature, chills, and runny nose and eyes. He says that it happens to him every year during this season. What type of allergic response is it according to Gell and Coombs?
a. Type II
b. Type I
c. Type III
d. Type V
e. Type IV

115. A patient died of secondary bacterial pneumonia. Autopsy revealed pale yellow muscles with numerous foci of calcinosis. In the muscles, microscopy shows dystrophic changes, absence of striations, and reduced glycogen levels. Edema and inflammation were detected in the stroma. The cellular infiltrate is represented by lymphocytes, macrophages, and plasma cells. Sclerotic changes were detected in the heart, lungs, and liver. These pathological changes are characteristic of the following disease:
a. Myopathy
b. Systemic scleroderma

c. Zenker's degeneration of muscles in typhoid fever
d. Dermatomyositis (Wagner-Unverricht-Hepp disease)
e. Myositis

116. A man presents with convergent strabismus. What muscle of the eyeball is damaged in this case?
a. Musculus rectus oculi lateralis
b. Musculus obliqus oculi superior
c. Musculus rectus oculi medialis
d. Musculus rectus oculi inferior
e. Musculus rectus oculi superior

117. A 50-year-old patient was prescribed ceftriaxone for the treatment of typhoid fever. However, the next day the patient's condition deteriorated, the temperature increased to 39.6^0C. What has likely caused the deterioration of the patient's condition?
a. Allergic reaction
b. Effect of the pathogen's endotoxins
c. Addition of a secondary infection
d. Reinfection
e. Pathogen's resistance to ceftriaxone

118. A 55-year-old worker at an animal farm has been hospitalized with complaints of fever, chills, headache, and muscle pain. Believing that he had a case of flu, he was self-treating at home for 9 days after the onset of symptoms. Based on the clinical presentation and patient's history, a doctor provisionally diagnosed him with leptospirosis. What material must be obtained for testing to isolate the pathogen and make laboratory confirmation of the diagnosis?
a. Saliva
b. Urine
c. Blood
d. Wound contents
e. Cerebrospinal fluid

119. Problems with the processes of lipid breakdown in small intestine are caused by disturbed lipase activity. What factor activates lipase?
a. Na^+ salts
b. Enterokinase
c. Hydrochloric acid
d. Bile acids
e. Pepsin

120. Increased hyaluronidase activity was detected in the patient's blood serum. What biochemical value should be measured in the blood serum to confirm the provisional diagnosis of a connective tissue pathology?
a. Uric acid
b. Glucose
c. Bilirubin
d. Galactose
e. Sialic acid

121. A microbial culture has been grown from a pus sample obtained from a furuncle. It contains spherical microbes, clustered together like a bunch of grapes. What microbes were detected in the culture?
a. Micrococci
b. Streptococci
c. Diplococci
d. Tetracocci
e. Staphylococci

122. The course of hemorrhagic shock was complicated by the development of acute renal failure in

the patient. What is the initiating link in the mechanism of development of this complication?
a. Development of DIC syndrome
b. Increased permeability of the capillary wall
c. Activation of the sympathoadrenal system
d. Release of vasopressin into the blood
e. Centralization of blood circulation with development of renal ischemia

123. A lymphocyte was infected with HIV (AIDS) retrovirus. What is the direction of information transmission in the cell in this case?
a. DNA > mRNA > polypeptide > DNA
b. mRNA > polypeptide > DNA
c. DNA > polypeptide > mRNA
d. Polypeptide > RNA > DNA > mRNA
e. RNA > DNA > mRNA > polypeptide

124. When examining a patient, the neurologist determined the absence of the knee-jerk reflex that normally occurs, when patellar tendon is being struck with a reflex hammer. What nerve is likely to be damaged in this case?
a. Femoral nerve
b. Obturator nerve
c. Common fibular nerve
d. Gluteal nerve
e. Tibial nerve

125. A patient with a suspected systemic disease underwent a biopsy of an area of increased density and immobility in the skin. In the dermis, the study detected all types of connective tissue disorganization with a weak cellular reaction, gross sclerosis, and hyalinosis. What disease can be characterized by these pathological changes?
a. Systemic lupus erythematosus
b. Scleroderma
c. Polyarteritis nodosa
d. Dermatofibroma
e. Psoriasis

126. Investigation of an outbreak of a hospital-acquired infection is being conducted. Pure cultures of Staphylococcus aureus were obtained from patients, heathcare workers, and some objects on the premises. It is necessary to determine whether these staphylococci are identical to each other and to find the source of the hospital-acquired infection. What test must be conducted for this purpose?
a. Phage typing
b. Determination of pathogenicity
c. Serotyping
d. Biovar determination
e. Animal inoculation

127. A 45-year-old man has been hospitalized with complaints of fever, pain during breathing, suffocation, and cough. Laboratory tests and X-ray allowed diagnosing him with pleurisy. A pleural puncture is prescribed to evacuate the exudate. Where in the pleural cavity can you find the largest amount of exudate?
a. Costodiaphragmatic recess
b. Under the pleural dome
c. Under the root of the lungs
d. Costomediastinal recess
e. Phrenicomediastinal recess

128. An isolated heart was used to study excitation conduction velocity in different areas of the heart. What area had the lowest velocity of excitation conduction?
a. Atrial myocardium
b. Ventricular myocardium

c. Atrioventricular node
d. Purkinje fibers
e. His bundle

129. After a stroke that occurred one week ago, a 64-year-old woman has lost the mobility of her left arm and leg. The affected limbs have pathological reflexes and increased muscle tone and reflex responses. What type of paralysis is it?
a. Monoplegia
b. Diplegia
c. Hemiplegia
d. Tetraplegia
e. Paraplegia

130. Because of the violation of the safety rulew while working with organophosphorus insecticide, a worker has developed bronchospasm. Which of the listed broncholytics is indicated in this case?
a. Adrenalin
b. Euphyllin (Aminophylline)
c. Ephedrine
d. Atropine
e. Berotec (Fenoterol)

131. The Wasserman reaction is markedly positive (++++) in a 30-year-old man. What infectious disease is diagnosed using the Wasserman reaction?
a. Brucellosis
b. Influenza
c. Tuberculosis
d. Poliomyelitis
e. Syphilis

132. A patient was hospitalized with the provisional diagnosis of typhoid fever. The disease onset was three days ago. The temperature is 39^oC. What method of laboratory diagnostics must be used to confirm this diagnosis?
a. Obtaining a blood culture
b. Obtaining a biliculture
c. Obtaining a urinoculture
d. Obtaining a coproculture
e. Serology

133. Microtraumas of oral mucosa occur daily during eating. However, bleeding in such cases quickly stops because of:
a. Heparin
b. Thromboplastin
c. Heparin anti-factor
d. Mucin
e. Lysozyme

134. In ECG analysis, it is necessary to determine the pacemaker of the heart. It can be done by determining:
a. The direction of the R wave
b. The direction of the Q wave
c. The amplitude of the R wave
d. The amplitude of the P wave
e. The direction of the P wave

135. For infectious disease prevention, a person preparing to travel to Africa was prescribed chingamin (chloroquine). This drug belongs to the following pharmacological group:
a. Antimalarial
b. Antihelmintic
c. Antisyphilitic

d. Antimycotic
e. Antituberculosis

136. A 55-year-old man with a many-year history of mitral insufficiency developed acute heart failure. What pathophysiological type of heart failure can be observed in this case?
a. Hypoxic cardiac damage
b. Cardiac pressure overload
c. Coronarogenic cardiac damage
d. Acute cardiac tamponade
e. Cardiac volume overload

137. Histology of an eyeball wall microslide shows a structure consisting of a chain of three neurons. The bodies of these neurons form an outer layer, an inner nuclear layer, and a ganglion layer. What structure of the eye has such a morphology?
a. Vascular membrane
b. Retina
c. Sclera
d. Iris
e. Ciliary body

138. If a dog for a long time is being conditioned in a very precise differentiation, as a result the inhibition processes can be exhausted and a persistent long-term excitation will develop instead. What nervous system pathology can develop in this case?
a. Paresis
b. Neurosis
c. Athetosis
d. Hypokinesia
e. Fibrillation

139. A 35-year-old man has been hospitalized with complaints of a runny nose and headache that last for 5 days already. After examination, he was diagnosed with maxillary sinusitis (inflammation of the maxillary sinus). Through what nasal passage did the infection reach this sinus?
a. Nasopharyngeal meatus
b. Middle nasal meatus
c. Common nasal meatus
d. Superior nasal meatus
e. Inferior nasal meatus

140. A man, who recently returned from an African country, came to the urologist complaining of painful urination. A urine sample, obtained for analysis during the daytime, contains eggs with a characteristic spike. Make the diagnosis.
a. Opisthorchiasis
b. Intestinal schistosomiasis
c. Japanese schistosomiasis
d. Dicroceliasis
e. Urogenital schistosomiasis

141. A man has a hip joint injury. X-ray clearly detects an intra-articular hemorrhage. What ligament has been ruptured in this case?
a. Lig. ischiofemorale
b. Lig. iliofemorale
c. Lig. capitis femoris
d. Lig. transversum acetabuli
e. Zona orbicularis

142. X-ray detected a basilar skull fracture. The fracture line passes through the foramen spinosum and foramen rotundum. What bone was damaged as a result of the injury?
a. Sphenoid bone
b. Occipital bone

c. Frontal bone
d. Ethmoid bone
e. Temporal bone

143. Blood of a man, who 3 days ago had an acute blood loss, was studied and its leukocyte composition was determined to be as follows: leukocytes - 12·10^9/L, basophils - 0 %, eosinophils - 3 %, monocytes - 0 %, juvenile - 3 %, band neutrophils - 12 %, segmented neutrophils - 62%, lymphocytes - 16%, myelocytes - 4%. What change in the blood leukocyte composition takes place in this case?

a. Neutrophilia with a degenerative left shift
b. Absolute monocytopenia
c. Absolute lymphocytopenia
d. Neutrophilia with a regenerative left shift
e. Neutrophilia with a right shift

144. A 5-year-old child was brought to an admission room. The doctor determined the following signs: severe motor excitation, delirium, and hoarse voice, dilated pupils unresponsive to the light, hot and dry hyperemic skin, tachycardia, and tachypnea. These signs developed after the child had eaten belladonna berries. What pharmacological group of drugs should be prescribed in this case?

a. Anticholinesterase drugs
b. Cholinesterase reactivators
c. Nicotinic agonists
d. Muscarinic agonists
e. Nicotinic antagonists

145. A victim has received a deep incised stab wound to the upper posterior surface of the shoulder. Extension of elbow, hand, and digits is impaired; skin sensitivity of the posterior surface of the shoulder and forearm is lost. What nerve is damaged in this case?

a. N. radialis
b. N. ulnaris
c. N. musculocutaneus
d. N. medianus
e. N. cutaneus brachii medialis

146. Sigmoidoscopy of a 10-year-old child shows the rectal and sigmoid mucosa to be swollen, reddish, and covered in a thick layer of mucus. These changes correspond with the following pathology:

a. Bruise
b. Hemorrhagic inflammation
c. Purulent inflammation
d. Catarrhal inflammation
e. Venous plethora

147. A man has asked a cosmetologist to remove a tattoo from his shoulder. What substance, contained in the connective tissue, limits the spread of the dye?

a. Elastin
b. Collagen
c. Fibronectin
d. Hyaluronic acid
e. Hyaluronidase

148. In an experiment a dog was administered a certain hormone, which resulted in increased glomerular filtration due to dilatation of the afferent glomerular arteriole and decreased reabsorption of sodium ions and water in the nephron tubules. What hormone was administered?

a. Atrial natriuretic hormone
b. Adrenaline
c. Aldosterone
d. Vasopressin

e. Thyroxine

149. A dental student was hospitalized on day 3 after the onset of the disease. He was provisionally diagnosed with typhoid fever. What method of laboratory diagnostics allows making a microbiological diagnosis?

a. Allergy testing
b. Biological
c. Microscopy
d. Serological
e. Bacteriological

150. After hyperventilation an athlete developed a brief respiratory arrest. It occurred due to the following changes in the blood:

a. Increase of CO_2 and O_2 pressure
b. Decrease of O_2 pressure
c. Decrease of pH
d. Increase of CO_2 pressure
e. Decrease of CO_2 pressure

151. The Gerontology Institute recommends older people to take vitamin complexes that contain vitamin E) What is the main function of this vitamin?

a. Antineuritic
b. Antioxidant
c. Antidermatitic
d. Antihemorrhagic
e. Antiscorbutic

152. A patient with an eye trauma was prescribed a substance that induces a long-term (up to 10 days) relaxation of the accommodation muscles. Name this substance:

a. Pilocarpine hydrochloride
b. Pirenzepine
c. Methacin
d. Scopolamine hydrobromide
e. Atropine sulfate

153. A man complains that at a mention of past tragic events in his life he develops tachycardia, shortness of breath, and a sharp increase in blood pressure. What structures of the central nervous system enable such cardiorespiratory responses?

a. Corpora quadrigemina in the midbrain
b. Lateral nuclei of the hypothalamus
c. Specific nuclei of the thalamus
d. Cerebral cortex
e. Cerebellum

154. Stool analysis detected ascaris eggs in the patient's feces. What medicine should be prescribed for this patient's treatment?

a. Tetracycline
b. Furazolidone
c. Mebendazole
d. Levomycetin (Chloramphenicol)
e. Nystatin

155. During an examination of the patient, the surgeon detected an injury in the upper third of the kidney. What organ should be checked for its intactness in this case, given the syntopy of the left kidney?

a. Transverse colon
b. Descending colon
c. Small intestine
d. Liver

e. Stomach

156. The bacteriological laboratory has received for analysis a sample of dried fish from a focus of food poisoning outbreak. The bacteriologist inoculated the sample into a Kitt-Tarozzi medium, where growth of tennis racquet-shaped microorganisms could be observed. These microorganisms are likely to be the causative agents of:

a. Typhoid fever
b. Dysentery
c. Staphylococcal toxicoinfection
d. Salmonellosis
e. Botulism

157. After eating homemade canned meat, a student developed signs of food poisoning caused by Clostridium botulinum: diplopia, speech disturbance, and respiratory paralysis. What causes these signs in botulism?

a. Neurotoxin action
b. Adenylate cyclase activation
c. Cl. botulinum invasion of intestinal epithelium
d. Enterotoxin secretion
e. Endotoxic shock

158. In a 42-year-old woman, minor skin damage due to domestic trauma has caused activation of vascular-platelet hemostasis that stopped the bleeding within five minutes. What factors is the crucial one at the stage of platelet adhesion during the formation of a platelet thrombus?

a. Stuart-Prower factor
b. Von Willebrand factor
c. Hageman factor
d. Fletcher factor (prekallikrein)
e. Labile factor (proaccelerin)

159. In the structure of prokaryotic DNA operons there is a fragment, to which RNA polymerase attaches at the stage of transcription initiation. Name this fragment:

a. Operator gene
b. Promoter
c. Primary transcript
d. Structural gene
e. Regulator gene

160. A 57-year-old woman died of acute cardiopulmonary failure. On autopsy the pathologist suspects fat embolism of the pulmonary artery. What stain should be applied to microslides to confirm this diagnosis?

a. Sudan III
b. Methylene blue
c. Picrofuchsin
d. Hematoxylin and eosin
e. Congo red

161. A 2-year-old child on examination presents with hepatosplenomegaly, cataract, and delayed mental development. Blood galactose levels are high. What hereditary pathology is likely in this child?

a. Galactosemia
b. Hypovitaminosis D
c. Phenylketonuria
d. Disaccharide intolerance
e. Porphyria

162. A patient was prescribed atropine sulfate for relief of intestinal colic. What condition can be a contraindication for the prescription of this drug?

a. Sinus bradycardia
b. Bronchial asthma

c. Vertigo
d. Glaucoma
e. Hypotension

163. A stillborn child was born with underdeveloped auricles and thickened, inelastic skin that resembled a turtle shell. Histology detects excessive skin keratinization and atrophy of the stratum granulosum in the epidermis. There are no inflammatory changes. What disease can be suspected in this case?

a. Dermatomyositis
b. Ichthyosis
c. Xeroderma
d. Leukoplakia
e. Erythroplakia

164. A 70-year-old man died of general emaciation. Autopsy shows yellow-brown shrunken heart and liver. Microscopy detects small brown pigment granules in the cytoplasm of cardiomyocytes and hepatocytes near the nuclei. Their iron test is negative. What pigment is it?

a. Hemozoin (malarial pigment)
b. Bilirubin
c. Lipofuscin
d. Hematoidin
e. Hemosiderin

165. Urinalysis of a patient with acute cystitis shows leukocytes and a large number of gram-negative bacilli. Inoculation has resulted in the growth of mucous colonies that produce a green soluble pigment. What microorganism is the most likely cause of the patient's disorder?

a. Escherihia coli
b. Salmonella enteritidis
c. Pseudomonas aeruginosa
d. Proteus mirabilis
e. Klebsiella pneumoniae

166. A patient was prescribed a synthetic antiprotozoal agent that is an imidazole derivative for the treatment of giardiasis (lambliasis). Before making the prescription, the doctor warned the patient that alcoholic beverages were strictly forbidden during the treatment. What drug was prescribed in this case?

a. Metronidazole
b. Chingamine (Chloroquine)
c. Tetracycline
d. Methacycline
e. Furazolidone

167. In an experiment, an extracellular potassium concentration was increased until it became equal to the intracellular potassium concentration, which resulted in the loss of cellular excitability. What electrophysiological process occurred in this case?

a. Potassium efflux from the cell increases and hyperpolarization develops
b. Potassium efflux from the cell stops and resting potential disappears
c. Sodium efflux from the cell increases and depolarization develops
d. Potassium influx to the cell increases and local response develops
e. Potassium efflux from the cell decreases and hyperpolarization develops

168. A 55-year-old man was prescribed an antituberculosis agent as a part of his complex therapy for pulmonary tuberculosis. Which of the listed drugs has antibacterial activity only towards Mycobacterium tuberculosis?

a. Cycloserine
b. Streptomycin sulfate
c. Kanamycin sulfate
d. Gatifloxacin

e. Isoniazid

169. A woman with enteritis accompanied by severe diarrhea presents with the loss of water in the extracellular space, increased water content in the cells, and decreasing blood osmolarity. Name this type of water-electrolyte imbalance:

a. Hyperosmolar hyperhydration
b. Hyperosmolar hypohydration
c. Hypoosmolar hypohydration
d. Hypoosmolar hyperhydration
e. Isoosmolar hypohydration

170. Blood samples of a patient with typhoid fever have been sent to a laboratory to be tested for antibodies. What serological reaction should be used for this purpose?

a. Complement fixation reaction
b. Hemagglutination inhibition reaction
c. Hemagglutination reaction
d. Precipitation reaction
e. Agglutination reaction

171. A patient is diagnosed with severe B_{12-deficiency anemia resulting in disturbed hematopoiesis and appearance of atypical erythrocytes in the blood. The patient has a history of total gastric resection. This diagnosis can be confirmed if the following cells are present in the peripheral blood:

a. Elliptocytes
b. Normocytes
c. Microcytes
d. Anulocytes
e. Megalocytes

172. In diabetes, ketone bodies are synthesized in the liver from acetyl-CoA. Acetyl-CoA forms in the process of breakdown of a certain compound. Name this compound.

a. Lactate
b. Fatty acids
c. Glycogenic amino acids
d. Glucose
e. Glycerin

173. Autopsy of the body of a 60-year-old man, who had been suffering from fibrocavitary pulmonary tuberculosis for a long time, revealed enlarged kidneys that weigh 180 g each. Renal tissue is dense, white-gray, with a "fatty" sheen. Histology detected homogeneous oxyphilic masses in the renal glomeruli and in the walls of some of the small arteries. When stained with Congo red, these masses colored red-orange. What morphological changes are observed in the kidneys?

a. Senile amyloidosis
b. Secondary amyloidosis
c. Local tumor-like amyloidosis
d. Idiopathic amyloidosis
e. Diffuse hyalinosis

174. A 60-year-old woman has congestive heart failure with increased cardiac preload. What bioactive substance will be secreted by the heart in this case?

a. Aldosterone
b. Atrial natriuretic peptide
c. Vasopressin
d. Gastric inhibitory peptide
e. Angiotensin II

175. 14 days after the recovery from tonsillitis, a 15-year-old teenager developed face edema in the morning, high blood pressure, and urine resembling ''meat slops''. Immunohistochemistry of renal biopsy material revealed immune complex deposits on the capillary basement membrane and in the glomerular mesangium. What disease is it?

a. Acute glomerulonephritis
b. Acute pyelonephritis
c. Acute interstitial nephritis
d. Necrotic nephrosis
e. Lipoid nephrosis

176. A patient for a long time was on an imbalanced diet low in proteins, which resulted in hepatic fatty infiltration. This condition is likely to develop if a certain substance is absent in a person's diet. Name this substance:
a. Acetic acid
b. Biotin
c. Cholesterol
d. Alanine
e. Methionine

177. A sample of pus discharged from the patient's urethra was inoculated onto a special nutrient medium, which resulted in growth of pale-blue colonies. Microscopy of these preparations detected Gram-negative bean-shaped diplococci. It is the causative agent of:
a. Tularemia
b. Melioidosis
c. Syphilis
d. Clamidiosis
e. Gonorrhea

178. Adrenocorticotropic hormone (ACTH) production is one of the mechanisms of mobilizing the body in response to stressful situations. This hormone regulates the synthesis and secretion of adrenocortical hormones. What hormone induces the secretion of ACTH in the anterior lobe of the pituitary gland?
a. Somatotropic hormone
b. Corticotropin-releasing hormone
c. Epidermal growth factor
d. Thyrotropic hormone
e. Growth hormone

179. A person has a wound in the abdomen in the right. What part of the colon is most likely to be damaged?
a. Rectum
b. Ascending colon
c. Transverse colon
d. Sigmoid colon
e. Descending colon

180. After a prolonged attack of severe headache the patient lost mobility in his left arm and leg. Muscle tone is decreased in the affected limbs, the muscles are spasmed, spinal tendon reflexes are acutely intensified, reflex zones are increased. What nervous system disorder can be observed in this patient?
a. Extrapyramidal paralysis
b. Central paralysis
c. Reflex paralysis
d. Flaccid paralysis
e. Peripheral paralysis

181. A child is idiosyncratic to a certain medicinal substance, which is caused by:
a. Depletion of a substrate, with which this medicinal substance interacts
b. Concomitant disease of a target organ
c. Hereditary enzymopathy
d. Inhibition of hepatic microsomal enzymes
e. Accumulation of the medicinal substance in the body

182. A 2-year-old child presents with marked delay in psychomotor development, vision and hearing deterioration, marked enlargement of the liver and spleen. The child is diagnosed with hereditary Niemann-Pick disease. What genetic defect is the cause of this disease?

a. Glucose 6-phosphatase deficiency
b. Sphingomyelinase deficiency
c. Acid lipase deficiency
d. Xanthine oxidase deficiency
e. Amylo-1,6-glucosidase deficiency

183. While playing football, a boy has injured his muscles. When he came to a doctor, he complained about his inability to extend his lower leg. What muscle is damaged in this case?

a. Semitendinosus muscle
b. Piriformis muscle
c. Biceps femoris muscle
d. Quadratus lumborum muscle
e. Quadriceps femoris muscle

184. During a brain surgery, it was noted that stimulation of certain areas of the cortex of the large hemispheres caused the patient to experience both tactile and thermal sensations. What area of the cortex was stimulated in this case?

a. Postcentral gyrus
b. Precentral gyrus
c. Cingulate gyrus
d. Parahippocampal gyrus
e. Superior lateral gyrus

185. A 38-year-old man with schizophrenia was treated with psychoactive drugs for a long time. He complains of uncoordinated movements, hand tremor, and sleepiness. What group of drugs can have such an effect?

a. Psychomotor stimulants
b. Adaptogens
c. Tranquilizers
d. Neuroleptics
e. Antidepressants

186. Excessive formation of free radicals leads to cell damage. Name the non-enzymatic factor of the cellular antioxidant defense system.

a. Vitamin E
b. Cyanocobalamin
c. Glucuronidase
d. Superoxide dismutase
e. Glutathione reductase

187. A patient with diabetes mellitus after an insulin injection lost his consciousness and developed convulsions. What will be the result of a biochemical test for blood glucose level in this case?

a. 3.3 mmol/L
b. 10 mmol/L
c. 2.5 mmol/L
d. 8.0 mmol/L
e. 5.5 mmol/L

188. Long-term taking of medicines can affect cells of the liver. Particularly, it can cause marked hypertrophy of agranular endoplasmic reticulum due to the following function of this organelle:

a. Formation of maturation spindle
b. Detoxication of harmful substances
c. Nucleic acid synthesis
d. Intracellular digestion
e. Protein synthesis

189. A 44-year-old woman complains of general weakness, pain in the area of her heart, and a significant increase in body weight. Objectively, the following is observed: a moon-shaped face, hirsutism, blood pressure - 165/100 mm Hg, height - 164 cm, weight - 103 kg, accumulation of fat predominantly on the neck, upper shoulder girdle, and abdomen. What is the main pathogenetic mechanism of obesity in this woman?

a. Increased insulin production
b. Decreased glucagon production
c. Decreased production of thyroid hormones
d. Increased production of glucocorticoids
e. Increased production of mineralocorticoids

190. A patient diagnosed with glaucoma was prescribed a drug that lowers the intraocular pressure. What drug is it?

a. Phenazepam
b. Analgin (Metamizole sodium)
c. Noradrenaline hydrotartrate
d. Prozerin (Neostigmine)
e. Anaprilin (Propranolol)

191. A 30-year-old woman was using a fluorescent lipstick for a long time. She developed limited erythema and slight peeling on the border of her lips. Later her lips developed small transversal grooves and fissures. Specialized microscopy technique detected sensitized lymphocytes and macrophages and signs of cytolysis in the connective tissue of the affected area. What type of immunological hypersensitivity developed in the patient's lips?

a. Type IV (cell-mediated cytotoxicity)
b. Type I (reagine type)
c. Type III (immune complex-mediated cytotoxicity)
d. Type II (antibody-mediated cytotoxicity)
e. Granulomatosis

192. A surgeon performs primary surgical treatment of a deep incised wound on the lateral surface of the knee joint. What ligament needs to be sutured in this case?

a. Lig. collaterale tibiale
b. Lig. collaterale fibulare
c. Lig. popliteum obliquum
d. Lig. patellae
e. Lig. popliteum arcuatum

193. A 35-year-old woman came for a follow-up visit two weeks after a case of COVID-19. ECG detects a decrease in the voltage of the waves, the P wave is unchanged and connected to the QRS complex, the duration of the PQ interval is 0.32 seconds. What type of arrhythmia did the patient develop?

a. Sinoatrial block
b. Third-degree atrioventricular block
c. Second-degree atrioventricular block
d. First-degree atrioventricular block
e. Wolff-Parkinson-White syndrome

194. Domestic accident has resulted in a significant blood loss in the patient, which was accompanied by a drop in blood pressure. What hormones ensure quick restoration of the blood pressure caused by a blood loss?

a. Aldosterone
b. Cortisol
c. Oxytocin
d. Reproductive hormones
e. Adrenaline, vasopressin

195. A 30-year-old woman developed facial edemas. Examination detected proteinuria (5.87 g/L), hypoproteinemia, dysproteinemia, and hyperlipidemia. Such combination of signs is characteristic of:

a. Acute kidney failure
b. Chronic pyelonephritis
c. Nephritic syndrome
d. Chronic kidney failure
e. Nephrotic syndrome

196. A woman was hospitalized into the pulmonology department with the diagnosis of exudative pleurisy. In what pleural sinus will the largest amount of inflammatory exudate accumulate?
a. Costodiaphragmatic recess
b. Mediastinodiaphragmatic recess
c. -
d. Costomediastinal recess
e. Transverse pericardial sinus

197. An infectionist has detected an acute enterocolitis syndrome with impaired processes of digestion and absorption of breakdown products in the patient. What cells of the intestinal epithelium are damaged, resulting in such disorders?
a. Columnar cells without a border
b. Columnar cells with a border
c. Goblet cells
d. Apically granular cells
e. Endocrine cells

198. A 21-year-old patient underwent removal of a tumor in the right frontal lobe of the brain. The tumor was 5 cm in diameter, with a blurry margin between it and the surrounding tissues. It looks uniform on section. Histologically, it consists of stellate cells, the numerous processes of which form dense plexuses. What tumor is it?
a. Oligodendroglioma
b. Ependymoma
c. Ganglioneuroma
d. Astrocytoma
e. Choroid papilloma

199. Thromboxanes belong to lipid bioregulators of cellular functions. What is the source, from which these compounds are synthesized?
a. Arachidonic acid
b. Palmitic acid
c. Stearic acid
d. Palmitoleic acid
e. Phosphatidic acid

200. A person was hospitalized with morphine poisoning. In cases of acute morphine poisoning, a specific antagonist - naloxone - is used. What is the main factor in the development of antagonistic action in such cases?
a. Reflex excitation of the respiratory center
b. Sharp acceleration of morphine metabolism
c. Decreased sensitivity of the body to morphine
d. Competition for binding to opioid receptors
e. Direct stimulation of the respiratory center