1. A large cell with weakly basophilic cytoplasm and a bean-shaped nucleus was detected in a smear prepared from peripheral blood. The cell is the largest among the cells in the vision field. What cell is it?

A. Monocyte
B. Macrophage
C. Plasma cell
D. Medium size lymphocyte
E. Small lymphocyte

2. A histological specimen shows the parenchyma of an organ made of lobules in the shape of hexagonal prisms. The lobules consist of anastomosing plates, between which sinusoidal capillaries lie and radially converge towards the central vein. What anatomical organ has such a morphological structure?

A. Liver
B. Pancreas
C. Thymus
D. Spleen
E. Lymph node

3. A microspecimen was made from the puncture sample obtained from a patient's regional lymph node and stained according to the Romanowsky-Giemza technique. In this specimen, the doctor detected pale pink thin microorganisms with 12–14 uniform curls and sharp ends that were 10–13 mcm long. What infectious disease can be caused by the detected pathogen?

A. Syphilis
B. Trypanosomiasis
C. Leptospirosis
D. Relapsing fever
E. Leishmaniasis

4. A broad-spectrum antimicrobial agent needs to be prescribed for a 4-year-old child. What drug cannot be prescribed to children because of its harmful effect on the development of bone tissue?

A. Doxycycline
B. Amoxicillin
C. Ampicillin
D. Chloramphenicol (Levomycetin)
E. Co-trimoxazole (Biseptol)

5. A young person has excessive levels of somatotropic hormone and enlarged nose, lips, ears, lower jaw, hands and feet. What is the most likely diagnosis in this case?

A. Acromegaly
B. Pituitary dwarfism
C. Cushing disease
D. Addison disease
E. Adiposogenital dystrophy

6. Because of an injury to the posterior surface of the shoulder, a 35-year-old man has sustained damage to the radial nerve and the artery that passes next to it in the *canalis humeromuscularis*. What artery has been damaged in this case?

A. *A. profunda brachii*
B. *A. axillaris*
C. *A. radialis*
D. *A. ulnaris*
E. *A. brachialis*

7. An HIV-infected patient presents with suppressed activity of the immune system. The state of immunodeficiency in this patient is mainly caused by the damage to certain cells. Name these cells.

A. Helper T-cells
B. Suppressor T-cells
C. Macrophages
D. B-lymphocytes
E. Killer T-cells

8. A patient with chronic renal failure presents with the inulin clearance decreased to 60 mL/min. What kidney function is disturbed in this case, causing this phenomenon?

A. Glomerular filtration
B. Tubular secretion
C. Reabsorption in the proximal part of the nephron
D. Reabsorption in the distal part of the nephron
E. Reabsorption in the collecting tubules of the kidney

9. Examination of a patient, who came to the neurology department, detected smoothing-out of the frontal folds, inability to squint, lowered corner of the mouth, and the "sail"sign (the cheek passively puffs during breathing). What nerve is damaged in this case?

A. Facial
B. Oculomotor
C. Trigeminal
D. Vagus
E. Accessory

10. A 1.5-year-old boy constantly suffers from pyoderma and had three cases of pneumonia. In his blood, there are reduced levels of immunoglobulins G and A and no

plasma cells. What type of immunodeficiency developed in the child?

A. Bruton's hypogammaglobulinemia
B. Swiss-type immunodeficiency
C. Thymic hypoplasia
D. Wiskott-Aldrich syndrome
E. Louis-Bar syndrome

11. During childbirth, the woman was given a blood transfusion using the blood of a donor who arrived from South Africa. Two weeks later, the recipient developed a fever. She was provisionally diagnosed with malaria. What laboratory study must be conducted to confirm this diagnosis?

A. Study of a blood smear and thick blood drop to detect the erythrocytic stages of the pathogen
B. Study of the leukogram
C. Determining the causative agent by inoculating the patient's blood on a nutrient medium
D. Serological studies
E. Study of the puncture sample obtained from the patient's lymph nodes

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

A. Blood amylase activity
B. Acid phosphatase activity in blood
C. Alkaline phosphatase activity in blood
D. Blood aminotransferase activity
E. Blood creatinine levels

13. Certain vessels look like blunt-ended, flattened, endothelial tubes and have no basement membrane or pericytes. Their endothelium is affixed with anchoring filaments to the collagen fibers of the connective tissue. Name these vessels.

A. Lymphatic capillaries
B. Hemocapillaries
C. Arterioles
D. Venules
E. Arterio-venous anastomoses

14. Microscopy of a kidney biopsy material revealed foci with granular eosinophilic masses in their center, surrounded by an infiltrate consisting of lymphocytes, epithelioid cells, and isolated Langhans cells. What pathological process is observed in this case?

A. Granulomatous inflammation
B. Coagulative necrosis
C. Caseous necrosis
D. Alterative inflammation
E. Proliferation and differentiation of macrophages

15. A 45-year-old patient after a right shoulder injury caused by a fall cannot abduct his right arm to hold it horizontally. What muscle is damaged in this case, causing this type of movement restriction?

A. Deltoid muscle
B. Brachialis muscle
C. Infraspinatus muscle
D. Biceps brachii
E. Teres major muscle

16. 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. Temporal bone
C. Ethmoid bone
D. Frontal bone
E. Occipital bone

17. A patient presents with a decreased excitation conduction velocity in the atrioventricular node. What ECG component will have an increased duration in this case?

A. PQ interval
B. R wave
C. RR interval
D. QRS complex
E. ST segment

18. A patient came to a doctor complaining of itching between his fingers and on the abdomen, which intensifies at night. Examination of the skin revealed thin gray stripes and a fine rash. What is the most likely causative agent of this disease?

A. *Sarcoptes scabiei*
B. *Ixodes ricinus*
C. *Ornithodorus papillipes*
D. *Dermacentor pictus*
E. *Ixodes persulcatus*

19. A 27-year-old patient presents with pathological changes in his liver and brain. The patient's blood plasma exhibits an acute decrease in copper levels, while urine copper levels are elevated. The patient has been diagnosed with Wilson disease. To confirm this diagnosis, the activity of a certain enzyme must be measured in the

patient's blood serum. What enzyme is it?

A. Ceruloplasmin
B. Carbonic anhydrase
C. Xanthine oxidase
D. Leucine aminopeptidase
E. Alcohol dehydrogenase

20. The majority of the participants of the Magellan's expedition to America died of vitamin deficiency that manifested as general weakness, subcutaneous hemorrhages, tooth loss, and bleeding gums. What is the name of this vitamin deficiency?

A. Scurvy
B. Pellagra
C. Rickets
D. Polyneuritis (Beriberi)
E. Biermer's anemia

21. A 30-year-old man complains of weakness, thirst, headache, and lumbar pain. One month ago, he had a case of bacterial tonsillitis. He has facial edemas. Pulse — 84/min., blood pressure — 175/100 mm Hg. General urinalysis: erythrocytes — 40–52 in sight, leukocytes — 1–2 in sight, protein — 4 g/L. The patient was diagnosed with acute diffuse glomerulonephritis. What is the main mechanism of kidney damage in this patient?

A. Immune-mediated damage to the glomeruli
B. Tubular damage
C. Impaired hemodynamics in the kidneys
D. Impaired urodynamics
E. Direct damage to the glomeruli, caused by microorganisms

22. A 32-year-old man has been suffering from chronic glomerulonephritis accompanied by nephrotic syndrome for the last four years. Edemas are observed on his face. Recently edemas appeared on his legs and trunk as well. What mechanism is most characteristic of the edema development in this man?

A. Reduced oncotic blood pressure
B. Increased hydrostatic blood pressure in the capillaries
C. Increased oncotic pressure of the interstitial fluid
D. Impaired lymphatic efflux
E. Increased permeability of capillaries

23. A patient presents with reduced elbow joint flexion, decreased muscle tone of the biceps brachii, and a loss of skin sensitivity on the anteriolateral surface of the forearm. What nerve is functionally impaired in this case?

A. *N. musculocutaneus*
B. *N. axillaris*
C. *N. medianus*
D. *N. ulnaris*
E. *N. radialis*

24. A 40-year-old woman came to a doctor complaining of pain in the small joints of her feet and hands. The joints are enlarged and look like thickened nodes. Increased levels of urates were detected in her blood serum. In this case, metabolism of certain substances is disturbed in the patient. Name these substances.

A. Purines
B. Amino acids
C. Carbohydrates
D. Lipids
E. Pyrimidines

25. Laboratory examination detected glucose in urine of an 18-year-old patient, while glucose levels in the patient's blood plasma remain normal. What process is disturbed in this case, causing this phenomenon?

A. Tubular reabsorption
B. Glomerular filtration
C. Tubular secretion
D. Secretion of insulin
E. Secretion of glucocorticoids

26. Examination of the patient's facial expressions detected his inability to pucker his lips or whistle. His oral fissure stretches to the sides (transverse smile). What muscle is atrophied in this case, as indicated by these symptoms?

A. Orbicularis oris muscle
B. Zygomaticus major muscle
C. Buccinator muscle
D. Risorius muscle
E. Masseter muscle

27. After examination, a 57-year-old patient was diagnosed with B_{12}-deficiency anemia and prescribed a treatment. Three days later, a control blood test was performed. What is the most informative value for measuring an increase in erythropoiesis?

A. Increased reticulocyte count
B. Increased hemoglobin levels
C. Decreased color index
D. Increased platelet count
E. Increased leukocyte count

28. In a cell undergoing mitotic division, daughter chromatids move towards the poles of the cell. What stage of mitosis is observed in this cell?

A. Anaphase
B. Metaphase
C. Telophase
D. Prophase
E. Interphase

29. In parodontosis, protein and polysaccharide components of the connective tissue become destroyed. What protein is a component of the connective tissue?

A. Collagen
B. Albumin
C. Transferrin
D. Ceruloplasmin
E. Antitrypsin

30. Examination of the femoral bone detected chronic purulent inflammation of the compact substance and bone marrow, as well as formation of bone sequestra. What disease is associated with such changes?

A. Osteomyelitis
B. Reticulosarcoma
C. Multiple myeloma
D. Giant cell tumor of bone
E. Periostitis

31. Preventive examination of a patient detects thickened neck, exophthalmos, elevated body temperature, and the pulse of 110/min. What hormones should be measured in the patient's blood in this case?

A. Thyroxine
B. Sex hormones
C. Catecholamines
D. Insulin
E. Cortisol

32. A patient developed anaphylactic shock after a local anesthetic was administered. What mechanism of blood circulation disturbance is leading in this case?

A. Decreased vascular tone
B. Hypervolemia
C. Increased vascular tone
D. Activation of the sympathoadrenal system
E. Reduced contractile function of the heart

33. Histology of the skin biopsy material revealed granulomas consisting of macrophage nodules with lymphocytes and plasma cells. Large macrophages with fat vacuoles that contain spherically packed pathogens (Virchow cells) were detected as well. The granulation tissue is well vascularized. The described type of granuloma is characteristic of the following disease:

A. Leprosy
B. Tuberculosis
C. Syphilis
D. Rhinoscleroma
E. Brucellosis

34. Serological diagnostics of infectious diseases is based on the specific interaction between antibodies and antigens. Name the serological reaction, where highly dispersed antigens are adsorbed on erythrocytes.

A. Indirect (passive) hemagglutination reaction
B. Precipitation reaction
C. Complement fixation reaction
D. Hemadsorption reaction
E. Neutralization reaction

35. What cells of the renal endocrine complex are located under the endothelium in the walls of afferent and efferent arterioles and contain renin granules in their cytoplasm, which contributes to an increase in the blood pressure?

A. Juxtaglomerular cells
B. Juxtavascular cells
C. Macula densa cells
D. Mesangial cells
E. Interstitial cells

36. A child has been diagnosed with Tay-Sachs disease that is associated with a certain metabolic disorder. What type of metabolism is disturbed in this case, causing this disease?

A. Lipid metabolism
B. Mineral metabolism
C. Carbohydrate metabolism
D. Amino acid metabolism
E. Protein metabolism

37. A patient was prescribed a diuretic as a part of the complex treatment of essential hypertension. Several days later the patient's blood pressure decreased, but signs of hypokalemia appeared. What drug could have caused this complication?

A. Furosemide
B. Spironolactone
C. Clonidine
D. Metoprolol
E. Enalapril

38. After an industrial accident, a person was exposed to the toxic effect of potassium cyanide, which caused a blockade of cytochrome oxidase. What pathological process occurred as a result?

A. Tissue hypoxia
B. Hemic hypoxia
C. Circulatory hypoxia
D. Hypoxic hypoxia
E. Respiratory hypoxia

39. 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. Adrenal glands
B. Parathyroid glands
C. Testicles
D. Thymus
E. Thyroid gland

40. A tuning fork was used to assess the patient's perception of sounds. When it was placed near the outer ear, the patient was unable to hear the sound of the tuning fork in the right ear. However, when the foot piece of the tuning fork was placed on the mastoid process, the patient was able to perceive its sound. What part of the auditory sensory system is damaged in this case?

A. Middle ear
B. Inferior colliculi
C. Inner ear
D. Auditory (cochlear) nerve
E. Medial geniculate body

41. A patient has been hospitalized into the intensive care unit with suspected carbon monoxide poisoning. What hemoglobin derivative will be detected using spectral analysis in this case?

A. Carboxyhemoglobin
B. Carbhemoglobin
C. Methemoglobin
D. Oxyhemoglobin
E. Deoxyhemoglobin

42. A patient has hyperkalemia and hyponatremia. Such changes can be caused by decreased secretion of a certain hormone. Name this hormone.

A. Aldosterone
B. Vasopressin
C. Cortisol
D. Parathyroid hormone
E. Natriuretic hormone

43. When measuring the patient's basal metabolic rate, it was detemined to be 7% lower than it should have been. What is the intensity of energy metabolism processes in the patient?

A. Normal
B. Moderately increased
C. Moderately reduced
D. Significantly reduced
E. Significantly increased

44. A patient complains of pain in the are of the liver. Duodenal probing detected oval yellowish eggs, narrowed towards the pole, where an operculum is located. The size of these eggs is the smallest among all helminth eggs. What type of helminthiasis is observed in the patient?

A. Opisthorchiasis
B. Taeniasis
C. Taeniarhynchiasis
D. Enterobiasis
E. Diphyllobothriasis

45. A 40-year-old woman, who was systematically taking acetylsalicylic acid, developed hemorrhages. Disturbed functional activity of platelets was detected. This phenomenon is associated with inhibition of a certain enzyme. Name this enzyme.

A. Cyclooxygenase
B. Cholinesterase
C. Cytochrome oxidase
D. Glucose-6-phosphate dehydrogenase
E. Na^+, K^+- ATPase

46. A woman has been hospitalized into the gynecological department with a suspected intraperitoneal hemorrhage (ectopic pregnancy). What anatomical structure must be punctured for the urgent diagnostics of the hemorrhage in this case?

A. Posterior vaginal fornix
B. Anterior vaginal fornix
C. Cervix
D. Internal os
E. Anterior vaginal wall

47. The act of chewing is disturbed in a patient, because a pathological process has affected the structures that form the afferent pathway of the relevant reflex arc. What nerve is damaged in this patient?

A. *N. trigeminus*
B. *N. vagus*
C. *N. glossopharyngeus*
D. *N. hypoglossus*
E. *N. glossopharyngeus* and *n. vagus*

48. A 28-year-old woman has been diagnosed with an ectopic pregnancy, complicated by a fallopian tube rupture. In this case, blood can contaminate the following peritoneal space:

A. Rectouterine pouch
B. Vesicouterine pouch
C. Right mesenteric sinus
D. Left mesenteric sinus
E. Intersigmoid recess

49. As a result of a punctate hemorrhage into the retina of the eye, the patient lost the ability to see objects in the center of the vision field. Where in the retina did the hemorrhage occur in this case?

A. Macula lutea
B. Ciliary part of the retina
C. Iris part of the retina
D. Punctum caecum
E. Uvea

50. Microscopy of a skin biopsy material revealed granulomas consisting of epithelioid cells that were surrounded mainly by T-lymphocytes. Isolated giant multinucleated Langhans cells are located among the epithelioid cells. Some of the granulomas have areas of caseous necrosis in their center. There are no blood vessels. What disease are the described granulomas characteristic of?

A. Tuberculosis
B. Syphilis
C. Leprosy
D. Rhinoscleroma
E. Glanders

51. A 38-year-old woman became acutely ill. Her body temperature increased to 40^{o}C. Roseolae appeared on the skin of her abdomen during the second week after the onset of the disease. On day 18 after the onset of the disease, the signs of acute abdomen were detected and peritonitis was diagnosed, after which the patient died. In the ileum, autopsy detected deep ulcers in the area of group follicles, one of which was perforated. Fibrinopurulent exudate was detected in the abdominal cavity. What is the most likely diagnosis in this case?

A. Typhoid fever
B. Giardiasis
C. Campylobacter-induced enterocolitis
D. Shigellosis
E. Amoebiasis

52. A patient has been suffering from bronchial asthma for 15 years. What changes in the patient's leukogram can develop because of this disease?

A. Eosinophilia
B. Basophilia
C. Leukocytosis
D. Leukopenia
E. Left shift

53. Thromboxanes belong to lipid bioregulators of cellular functions. What is the source, from which these compounds are synthesized?

A. Arachidonic acid
B. Stearic acid
C. Palmitic acid
D. Phosphatidic acid
E. Palmitoleic acid

54. A 25-year-old woman came to a doctor with complaints of dysmenorrhea and infertility. Examination revealed that the woman's height is 145 cm, her secondary sexual characteristics are underdeveloped, she has a webbed neck (with wing-like folds). No Barr bodies were detected in her buccal epithelium. What pathological condition is observed in the patient?

A. Turner syndrome
B. Klinefelter syndrome
C. Morris syndrome
D. Down syndrome
E. Trisomy X

55. In a 44-year-old woman, arterial hypertension is caused by pheochromocytoma. What group of antihypertensive agents must be prescribed to this patient?

A. α-blockers
B. Calcium antagonists
C. β-blockers
D. Sympatholytics
E. Ganglionic blockers

56. 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 — $2.3 \cdot 10^{12}$/L, leukocytes — $90 \cdot 10^{9}$/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. Chronic lymphocytic leukemia
B. Acute lymphocytic leukemia
C. Acute myeloid leukemia
D. Chronic myeloid leukemia
E. Iron deficiency anemia

57. After bladder catheterization, a large number of fresh erythrocytes appeared in the patient's general urinalysis. This phenomenons most likely has been caused by the damage to the narrowest part of the urethra. What part of the urethra is damaged in this case?

A. Membranous
B. Prostatic
C. Proximal
D. Distal
E. Spongy

58. A patient provisionally diagnosed with typhoid fever has been admitted into the infectious diseases department of a hospital. The patient has been ill for three days already. Body temperature — 39°C. What method of laboratory diagnostics must be used to confirm the diagnosis?

A. Obtaining the blood culture
B. Serological method
C. Obtaining the coproculture
D. Obtaining the biliculture
E. Obtaining the urine culture

59. 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. Middle nasal meatus
B. Superior nasal meatus
C. Inferior nasal meatus
D. Common nasal meatus
E. Choanae

60. A patient has been diagnosed with a phlegmon of the forearm. Microbiological analysis of the exudate from the inflammatory zone detected streptococci. What cells will be predominantly present in the exudate?

A. Neutrophilic granulocytes
B. Eosinophilic granulocytes
C. Lymphocytes
D. Basophilic granulocytes
E. Monocytes

61. Histology of the lungs of a premature baby shows that the alveoli stick together due to the absence of the surfactant. This condition is associated with the underdevelopment of certain cells in the alveolar wall. Name these cells.

A. Secretory alveolar cells
B. Respiratory alveolar cells
C. Alveolar macrophages
D. Clara cells
E. Fibroblast-like cells

62. A patient diagnosed with acute myocardial infarction was prescribed heparin as a part of complex therapy. After the administration of this drug, after a while, the patient developed hematuria. What heparin antagonist must be administered to eliminate this complication in the patient?

A. Protamine sulfate
B. Vicasol (Menadione)
C. Aminocaproic acid
D. Neodicumarin (Ethyl biscoumacetate)
E. Fibrinogen

63. A 6-year-old child died of respiratory failure due to paralysis of the respiratory muscles. Histology of the thoracic spinal cord shows hyperemia, a smoothed out pattern of the gray matter, droplet hemorrhages, small concave areas of brain tissue softening, and inflammation with proliferation of neuroglia around dead neurons. What disease can be characterized by these pathological changes?

A. Poliomyelitis
B. Meningococcal infection
C. Cytomegaly
D. Toxoplasmosis
E. Adenovirus infection

64. A woman with Rh-negative blood of the II group gave birth to a baby with the blood group IV. The baby has been diagnosed with hemolytic disease caused by the Rh incompatibility. What blood group is possible in the child's father?

A. III (B), Rh-positive
B. I (O), Rh-positive
C. II (A), Rh-positive
D. IV (AB), Rh-negative
E. III (B), Rh-negative

65. A man has been diagnosed with acute glomerulonephritis. What substance in this case indicates that glomerular basement membrane is damaged in the glomerular capillaries, if it appears in urine?

A. Protein
B. Leukocytes
C. Glucose
D. Creatine
E. 17-ketosteroids

66. A patient, who for a long time was on an imbalanced diet low in proteins, developed hepatic fatty infiltration. This condition is likely to develop, if a certain substance is absent in a person's diet. What substance is it?

A. Methionine
B. Alanine
C. Cholesterol
D. Acetic acid
E. Biotin

67. A 50-year-old woman has been hospitalized with a closed craniocerebral injury in the area of the occipital bone. Examination revealed impaired gait, disturbed balance, and hand tremors. What part of the brain is damaged in this case?

A. Cerebellum
B. Medulla oblongata
C. Pons
D. Diencephalon
E. Spinal cord

68. A man with urethritis was undergoing self-treatment with a penicillin antibiotic for a week, but the treatment did not improve his condition. Bacteriological studies showed that the causative agent of this disease was mycoplasma. Why was the drug, that the patient was taking, ineffective in this case?

A. Mycoplasmas have no cell wall
B. The pathogen reproduces inside the cells
C. Mycoplasmas produce an enzyme that breaks down penicillin
D. Mycoplasma membrane contains cholesterol
E. Mycoplasmas produce no relevant transport proteins

69. A patient has a bronchospasm attack. What membrane cytoreceptors of bronchial smooth muscles must be stimulated to improve the patient's condition?

A. β-adrenergic receptors
B. α-adrenergic receptors
C. Muscarinic acetylcholine receptors
D. Nicotinic acetylcholine receptors
E. H_2-histamine receptors

70. A 3-year-old child presents with increased body temperature and enlarged lymph nodes. During laboratory studies, complete blood count revealed lymphocytosis. ELISA method detected Epstein-Barr virus antigen. What disease has most likely developed in the child?

A. Infectious mononucleosis
B. Burkitt's lymphoma
C. Herpetic adenopathy
D. Generalized infection caused by *herpes zoster*
E. Cytomegalovirus infection

71. Autopsy of the body of a man, who had been suffering from presenile dementia for a long time, revealed atrophy of the cerebral cortex and thinning-out of the cerebral lobes (mainly frontal, temporal, and occipital). Microscopically, senile plaques, damaged neurons, and Hirano bodies were detected in the cortex of the atrophied cerebral lobes. What is the most likely diagnosis in this case?

A. Alzheimer's disease
B. Creutzfeldt-Jakob disease
C. Multiple sclerosis
D. Parkinson's disease
E. Cerebral atherosclerosis

72. A patient has been hospitalized into the infectious diseases department with signs of fever that occurred again for a second time with the interval of two days between the two episodes. Blue-violet twisted cells were detected in the blood drop stained according to the Romanowsky-Giemza technique. What microorganism has caused the disease in this patient?

A. *Borrelia recurrentis*
B. *Leptospira interrogans*
C. *Rickettsia typhi*
D. *Treponema pallidum*
E. *Plasmodium vivax*

73. A 2-year-old child with kidney failure has been diagnosed with hyperoxaluria and oxalate urolithiasis that resulted in deposition of calcium oxalate in the kidneys. This condition has been caused by the disturbed metabolism of a certain amino acid. Name this amino acid.

A. Glycine
B. Lysine
C. Methionine
D. Arginine
E. Histidine

74. What drug must be used as an antidote in cases of poisoning caused by narcotic analgesics?

A. Naloxone
B. Unithiol
C. Sodium thiosulfate
D. Protamine sulfate
E. Adrenaline hydrochloride

75. Microscopic study identifies a parenchymal organ with epithelial strands that form zona glomerulosa, zona fasciculata, and zona reticularis. The central part of the organ is represented by clusters of chromaffin cells. What organ is it?

A. Adrenal gland
B. Thyroid gland
C. Pineal gland
D. Liver
E. Pituitary gland

76. What enzyme due to its bactericidal effect prevents inflammation of the oral mucosa, if it becomes damaged?

A. Lysozyme
B. Amylase
C. Mucin
D. Lingual lipase
E. Nuclease

77. Melatonin metabolism is disturbed in the patient's body. This phenomenon can be caused by a deficiency of a certain amino acid, from which melatonin is synthesized. What amino acid is it?

A. Tryptophan
B. Alanine
C. Histidine
D. DOPA
E. Glutamate

78. A man with active tuberculosis was prescribed isoniazid. What vitamin supplement should be taken in this case to prevent the side effects of isoniazid?

A. Pyridoxine hydrochloride
B. Retinol acetate
C. Tocopherol acetate
D. Rutin
E. Cyanocobalamin

79. A patient developed a painful red nodule in the area of the lower jaw. Histologically, accumulation of purulent exudate was detected in several hair follicles. What clinical and morphological type of inflammation is observed in this case?

A. Carbuncle
B. Phlegmon
C. Furuncle
D. Abscess
E. Felon (panaritium)

80. What supramolecular multienzyme complex, integrated into the lipid layer of the inner mitochondrial membrane, creates the conditions for redox reactions?

A. Respiratory chain
B. G-protein transducer
C. Carboxypeptidase
D. Hexokinase
E. Pyruvate kinase

81. Microscopy of the stools of a patient with profuse diarrhea, repeated episodes of vomiting, and increasing intoxication detected Gram-negative rod-shaped microorganisms that resembled a comma and were arranged in groups that looked like shoals of fish. A culture of the pathogen was isolated using the storage medium — 1% peptone water, where it formed a delicate film. What disease can be caused by the pathogen that was isolated in this case?

A. Cholera
B. Shigellosis
C. Salmonellosis
D. Pseudotuberculosis
E. Intestinal yersiniosis

82. 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. Fatty acids
B. Glucose
C. Glycogenic amino acids
D. Glycerin
E. Lactate

83. A genetic defect of a Na^+-dependent transporter of monosaccharides of the enterocyte membrane causes the development of malabsorption syndrome in newborn babies as a result of impaired absorption. In this case, impaired absorption of the following substance would be observed:

A. Galactose
B. Sucrose
C. Ribose
D. Lactose
E. Maltose

84. A 27-year-old patient complains of lethargy, rapid mental and physical fatigability, and dyspeptic disorders. Examination revealed positive results of tuberculin tests, hypoglycemia, the blood pressure of 90/60 mm Hg, hyponatremia, and skin hyperpigmentation. What pathology of the adrenal glands is associated with such phenomena?

A. Addison's disease
B. Cushing syndrome
C. Acute adrenocortical insufficiency
D. Hypofunction of the adrenal medulla
E. Conn's syndrome

85. After an ischemic stroke, the patient cannot make voluntary movements with the limbs on the right. Hyperreflexia is observed. Palpation detects increased muscle tone in the limbs. What type of motor function impairment is observed in the patient?

A. Central paralysis
B. Peripheral paresis
C. Cerebellar ataxia
D. Peripheral paralysis
E. Tetany

86. A patient has been hospitalized with complaints of dry mouth, photophobia, and visual impairment. Objectively, the patient has dry and hyperemic skin, dilated pupils, and tachycardia. Further examination allowed diagnosing the patient with a poisoning caused by belladonna alkaloids. What drug must be prescribed in this case?

A. Neostigmine (Proserin)
B. Succinylcholine (Dithylin)
C. Phenylephrine (Mesaton)
D. Insulin
E. Heparin

87. 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. Secondary amyloidosis
B. Idiopathic amyloidosis
C. Diffuse hyalinosis
D. Senile amyloidosis
E. Local tumor-like amyloidosis

88. A patient with tuberculosis was prescribed an antibiotic. When taking this drug, the patient can develop liver function disorders, leukopenia, and red color of biological fluids. What drug was prescribed in this case?

A. Rifampicin
B. Isoniazid
C. Sodium para-aminosalicylate
D. Cycloserine
E. Pyrazinamide

89. A 37-year-old woman periodically developed infectious diseases of bacterial origin throughout the last year. Their course was extremely long, and remissions were short. Examination revealed low levels of the main classes of immunoglobulins. What cells are most likely to be dysfunctional in this case, causing the patient's condition?

A. Plasma cells
B. Phagocytes
C. Neutrophils
D. Macrophages
E. Lymphocytes

90. Surfactant synthesis is impaired in premature newborns. What is its function in the lungs?

A. Reduces the surface tension of the alveolar walls
B. Increases the surface tension of the alveolar walls
C. Impairs the O_2 diffusion through the aerogematic barrier
D. Increases the airway resistance
E. Facilitates diaphragmatic excursion

91. A baby was born healthy, but developed vomiting one week later. After that, the baby developed muscle hypertonicity, seizures, and a specific sweet smell of urine and sweat. What disease is observed in the baby?

A. Maple syrup urine disease
B. Wilson's disease
C. Phenylketonuria
D. Histidinemia
E. Fructosuria

92. A patient has hand tremors associated with Parkinson's disease. What mediator is deficient in the patient's striatopallidal system, causing this symptom?

A. Dopamine
B. GABA
C. Substance P
D. Noradrenaline
E. Serotonin

93. A patient has cortical blindness. In this case, thrombosis developed in the following artery:

A. Posterior cerebral artery
B. Anterior cerebral artery
C. Medial cerebral artery
D. Anterior choroid artery
E. Posterior communicating artery

94. A patient with chronic heart failure developed hepatic cirrhosis with ascites and edema of the lower limbs. What changes in the blood composition cause ascites in this patient?

A. Hypoalbuminemia
B. Macroglobulinemia
C. Hypocholesterolemia
D. Hypergammaglobulinemia
E. Hypoprothrombinemia

95. One year after the resection of 2/3 of the stomach, the patient developed complaints of skin pallor, headaches, dizziness, and general weakness. Complete blood count: hemoglobin — 60 g/L, erythrocytes — $2.4 \cdot 10^{12}$/L. What is the cause of this pathological condition?

A. Decreased secretion of Castle's intrinsic factor
B. Increased secretion of Castle's intrinsic factor
C. Increased folic acid levels
D. Decreased folic acid levels
E. Decreased copper absorption

96. A patient has been diagnosed with megaloblastic anemia against the background of atrophic gastritis. What drug can be used to prevent this pathology, when administered parenterally?

A. Cyanocobalamin
B. Celecoxib
C. Piracetam
D. Prozerin (Neostigmine)
E. Prednisolone

97. In an experiment, the blood flow rate (mL/min) was measured in different organs. What organ has the highest blood flow rate per 100 g of its mass?

A. Thyroid gland
B. Brain
C. Kidneys
D. Liver
E. Stomach

98. In an experiment, the carotid sinus baroreceptors were stimulated in a test animal. What changes will be observed in the cardiovascular system as a result?

A. Decrease of the sympathetic tone
B. Increase of the heart rate
C. Increase of the blood pressure
D. Increase of the secretion of atrial natriuretic peptides
E. Positive chronotropic effect

99. What hormone stimulates the secretion of lipolytic and proteolytic enzymes by pancreatic cells?

A. Cholecystokinin-pancreozymin (CCK-PZ)
B. Bombesin
C. Somatostatin
D. Secretin
E. Aldosterone

100. Calcium phosphate crystals form the basis of the inorganic structure of teeth. What hormone regulates calcium homeostasis?

A. Parathyroid hormone
B. Adrenaline
C. Aldosterone
D. Vasopressin
E. Testosterone

101. A mountain climber, who climbed to the altitude of 5,200 m, developed gas alkalosis. What causes the development of this pathological condition?

A. Hyperventilation of the lungs
B. Hypoventilation of the lungs
C. Hypercapnia
D. Hypoxemia
E. Decreased ambient temperature

102. During examination of a patient, auscultation determined that the first heart sound is heard better than the second in the intercostal space V on the left, 1–2 cm laterally to the midclavicular line. This phenomenon is caused by the closing of the following valve:

A. Left bicuspid valve
B. Aortic semilunar valve
C. Right tricuspid valve
D. Bicuspid valve and tricuspid valve
E. Pulmonic semilunar valve

103. A patient has been diagnosed with mucopolysaccharidosis. In this disease, certain substances typically become deposited in various tissues of the body. Name these substances.

A. Glycosaminoglycans
B. Triglycerides
C. Glycogen
D. Fructose
E. Fatty acids

104. 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. Cingulate gyrus
C. Parahippocampal gyrus
D. Superior lateral gyrus
E. Precentral gyrus

105. In an experiment, a cell was exposed to tetraethylammonium that blocks potassium ion-selective channels. What effect will it have on the membrane potential?

A. Resting potential will disappear
B. Hyperpolarization will develop
C. Resting potential will increase
D. Resting potential will remain unchanged
E. Action potential will not be generated

106. A patient has inflammation of the medial epicondyle of the humerus (epicondylitis). What nerve is involved in the inflammatory process in this case?

A. *N. ulnaris*
B. *N. medianus*
C. *N. radialis*
D. *N. musculocutaneus*
E. *N. axillaris*

107. Steroid hormones facilitate the binding of RNA polymerase to the gene promoter. What stage of protein synthesis becomes activated in this case?

A. Transcription
B. Processing
C. Splicing
D. Translation
E. Post-translational modification

108. A patient has been diagnosed with chronic bronchitis and prescribed a mucolytic drug that increases surfactant synthesis. What drug was used in treatment of this patient?

A. Ambroxol
B. Codeine
C. Mucaltinum
D. Fenoterol
E. Acetylcysteine

109. A patient developed disease symptoms 24 hours after eating canned fish. The patient experiences nausea, weakness, dry mouth, double vision, aphagia, and difficulty breathing. What causes such symptoms?

A. Effect of neurotoxin
B. Effect of endotoxin
C. Effect of enterotoxin
D. cAMP activation
E. Reproduction of the pathogen in the gastrointestinal tract

110. During an operation on the thyroid gland, the surgeon ligated the superior thyroid artery. The doctor has ligated the branch of the following blood vessel in this case:

A. *A. carotis externa*
B. *A. lingualis*
C. *A. facialis*
D. *A. carotis interna*
E. *A. pharyngea ascendens*

111. For the treatment of glaucoma, the patient was prescribed a diuretic along with other drugs. This diuretic inhibits carbonic anhydrase, reduces the formation of intraocular fluid and improves its efflux. Name this drug.

A. Acetazolamide
B. Spironolactone
C. Chlorthalidone
D. Furosemide
E. Hydrochlorothiazide

112. A woman came to a doctor with complaints of redness and itching of the skin of her face after using a cosmetic cream. She was prescribed diphenhydramine. What is the mechanism of antiallergic action of this drug?

A. Blockade of H_1-histamine receptors
B. Blockade of H_2-histamine receptors
C. Stimulation of H_1-histamine receptors
D. Inhibition of leukotriene receptors
E. Stimulation of β-adrenoreceptors

113. 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. Furazolidone
C. Tetracycline
D. Methacycline
E. Chingamine (Chloroquine)

114. A patient has been diagnosed with mixed intestinal helminthiasis. An ultra-broad spectrum anthelmintic drug was prescribed for the treatment in this case. This drug inhibits the polymerization of tubulin protein in helminths. What drug is it?

A. Albendazole
B. Chingamine (Chloroquine)
C. Fluconazole
D. Metronidazole
E. Doxycycline

115. In molecular biology, a method is used that allows determining the sequence of nucleotides in a DNA molecule based on the amino acid composition of the polypeptide. This method uses the following property of the genetic code:

A. Collinearity
B. Universality
C. Specificity
D. Non-overlapping
E. Degeneracy

116. A newborn baby is vulnerable to infections. What immunoglobulin crosses the placental barrier and provides humoral immunity in the babies?

A. IgG
B. IgA
C. IgM
D. IgD
E. IgE

117. Hereditary disorders of methionine metabolism manifest in children as neurological disorders, delayed psychomotor development, visual impairment, and scoliotic posture. Elevated levels of a certain amino acid that is a toxic intermediate metabolite of methionine can be detected in urine and blood in such cases. Name this amino acid.

A. Homocysteine
B. Taurine
C. Cystine
D. Cysteine
E. Serine

118. A woman periodically has arterial hypertension attacks, accompanied by headaches, palpitations, markedly excessive sweating, sharp pain in the epigastric region, and elevated glucose levels in blood plasma. High levels of metanephrines were detected in blood plasma and urine. What neoplastic disorder can be most likely characterized by these symptoms?

A. Pheochromocytoma
B. Ovarian tumor
C. Stomach cancer
D. Thyroid adenoma
E. Parathyroid adenoma

119. 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. Clarithromycin
B. Rifampicin
C. Fluconazole
D. Oseltamivir
E. Isoniazid

120. A 19-year-old young man with depression and emotional disorders was prescribed an antidepressant, the effect of which was aimed at increasing the level of biogenic amines in the brain. The action of this antidepressant is aimed at suppressing the activity of a certain enzyme. Name this enzyme.

A. Monoamine oxidase
B. BB-type creatine phosphokinase
C. Phenylalanine hydroxylase
D. Decarboxylase of cyclic amino acids
E. Alanine transaminase

121. Antigen-presenting cells play a major role in the immune response in the process of cell cooperation. What cells are antigen-presenting?

A. Macrophages, B-lymphocytes
B. Helper T cells, B-lymphocytes
C. Dendritic cells, killer T cells
D. Natural killers: NK and K cells
E. Helper T cells, killer T cells

122. Histology of the biopsy material obtained from a mammary gland detects large neoplastic epithelial cells in the epithelium of the ducts, the epidermis of the nipple, and the adjacent skin areas. These cells have a hyperchromic nucleus and pale cytoplasm. They originate from the epithelium of apocrine glands. The cells are isolated and located mostly along basal

epidermal cells. What is the most likely diagnosis in this case?

A. Paget's cancer
B. Simple (usual) ductal hyperplasia
C. Medullary cancer
D. Infiltrating lobular cancer
E. Adenofibroma

123. 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. Kaposi's sarcoma
B. Angiofibrosarcoma
C. Hemangioendothelioma
D. Fibrosarcoma
E. Malignant pericytoma

124. Histology of intrathoracic lymph nodes revealed epithelioid cell granulomas without signs of caseous necrosis. Such a granuloma consists of highly differentiated mononuclear phagocytes (epithelioid and giant cells) and lymphocytes. The central part of the granuloma consists mainly of CD4+ lymphocytes, while CD8+ lymphocytes are present in the peripheral zone. What disease can be characterized by the detected changes?

A. Sarcoidosis
B. Tuberculosis
C. Lymphosarcoma
D. Hodgkin's lymphoma
E. Acute lymphadenitis

125. A 37-year-old man, who has been smoking for 19 years, complains of a constant cough. Bronchial biopsy revealed signs of chronic inflammation, thickening of the mucosa, and transformation of unstratified ciliated epithelium into stratified squamous epithelium. What pathological process is observed in the patient?

A. Metaplasia
B. Epithelial hypertrophy
C. Leukoplakia
D. Dysplasia
E. Epithelial hyperplasia

126. A 50-year-old woman has purulent inflammation of the cervix. Bacterioscopy of purulent secretions from the cervix detected Gram-negative bean-shaped diplococci, located both within the leukocytes and outside of them. Name the causative agent of this purulent inflammation.

A. *Neisseria gonorroeae*
B. *Chlamidia trachomatis*
C. *Haemophilus vaginalis*
D. *Candida albicans*
E. *Calymmatobacterium granulomatis*

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

A. Hartnup disease
B. Hers disease
C. Huntington disease
D. Parkinson disease
E. Von Gierke disease

128. A 55-year-old man suddenly developed strong palpitations and pain in the heart, sudden weakness, increased blood pressure, and irregular pulse with a deficit. ECG has no P waves and a varying duration of RR intervals. What heart rhythm disorder is observed in this patient?

A. Ciliary arrhythmia
B. Transverse heart block
C. Paroxysmal tachycardia
D. Respiratory arrhythmia
E. Extrasystole

129. A 45-year-old patient came to a doctor with complaints of headache, dizziness, frequent nausea, vomiting, muscle weakness, and pain in the area of the heart. Blood pressure — 170/110 mm Hg. Sodium levels in peripheral blood — 165 mmol/L, potassium levels — 2.5 mmol/L. Computed tomography detected a tumor 1 cm in size in the left adrenal gland. What changes in the acid-base balance would be observed in this case?

A. Metabolic alkalosis
B. Metabolic acidosis
C. Respiratory alkalosis
D. Respiratory acidosis
E. No acid-base imbalance occurs

130. A certain drug was prescribed as a part of complex therapy of peptic ulcer disease of the stomach. This drug is a competitive antagonist of histamine receptors. Its effect on H_2-receptors of parietal cells reduces induction of

hydrochloric acid. Name this drug.

A. Famotidine
B. Misoprostol
C. Omeprazole
D. Sucralfate
E. Pirenzepine

131. A patient presents with a disturbed act of swallowing, hoarse voice, regurgitation of liquid foods, and drooping soft palate. What nerves innervate the muscles of the soft palate?

A. Vagus and mandibular nerve
B. Glossopharyngeal nerve and facial nerve
C. Facial nerve and buccal nerve
D. Glossopharyngeal nerve and hypoglossal nerve
E. Cervical plexus

132. Autopsy of the body of a 54-year-old man, who died with clinical signs of diffuse fibrinopurulent peritonitis, revealed that the mucosa in the terminal part of the ileum and in the initial part of the large intestine has numerous longitudinal fissure-like ulcers and transverse fissures, it is tubercular and has a cobblestone appearance. In some areas, perforation of ulcers with formation of intraperitoneal abscesses and fistulas was detected. What disease can be characterized by such changes?

A. Crohn's disease
B. Nonspecific ulcerative colitis
C. Typhoid fever
D. Menetrier's disease
E. Pseudomembranous colitis

133. Examination of a kidney shows that it is edematous and plethoric, its capsule can be easily removed. The cavities of the renal pelvis and calyces are expanded and filled with turbid urine, their mucosa is dull and has hemorrhagic foci. On section, the kidney tissue is variegated and has yellow-gray areas surrounded by a zone of plethora and hemorrhages. What disease corresponds with this macroscopic presentation of the kidneys?

A. Acute pyelonephritis
B. Acute glomerulonephritis
C. Renal amyloidosis
D. Nephrolithiasis
E. Polycystic kidney disease

134. A 49-year-old patient presents with increased levels of uric acid in the blood. The doctor prescribed the patient allopurinol to reduce the levels of uric acid. Allopurinol is a competitive inhibitor of a certain enzyme. Name this enzyme.

A. Xanthine oxidase
B. Adenosine deaminase
C. Hypoxanthine phoribosyltransferase
D. Guanine deaminase
E. Adenine phosphoribosyltransferase

135. Examination of a 2-year-old child detected a delay in the child's physical and mental development (cretinism) and decreased levels of thyroid hormones. What hormonal drug should be used as a substitution therapy in this case?

A. L-thyroxine
B. Dexamethasone
C. Thiamazole
D. Metformin
E. Corticotropin

136. A patient developed immune hemolytic anemia. What substance will be present in an increased concentration in the patient's blood serum?

A. Indirect bilirubin
B. Mesobilinogen
C. Stercobilinogen
D. Protoporphyrin
E. Direct bilirubin

137. A woman has been diagnosed with the bone marrow syndrome of acute radiation sickness. What hematological symptoms will be observed during the height of the disease?

A. Pancytopenia
B. Relative lymphocytosis
C. Left-shift of the leukogram
D. Erythrocytosis
E. Relative lymphopenia

138. In an experiment, calcium ions were pumped from the synaptic cleft. What effect will it have on the neuromuscular transmission?

A. The release of the mediator into the synaptic cleft will decrease
B. The release of the mediator into the synaptic cleft will increase
C. Hyperpolarization of the end plate will occur
D. Depolarization of the end-plate will occur
E. Action potential of the end-plate will be generated

139. ECG of a 30-year-old man shows the following changes: an area of abnormal contraction, where the P wave is absent, the QRS complex is deformed, and the T

wave is negative and inverted in relation to the QRS complex. What pathological condition is observed in the patient?

A. Ventricular extrasystole
B. Sinus arrhythmia
C. Atrioventricular extrasystole
D. Atrial extrasystole
E. Paroxysmal tachycardia

140. What type of ventilatory failure is characteristic of pneumothorax?

A. Restrictive
B. Obstructive
C. Mixed
D. Disregulatory
E. Pathologic

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

A. Systemic scleroderma
B. Dermatomyositis
C. Systemic lupus erythematosus
D. Rheumatoid arthritis
E. Gouty arthritis

142. A 42-year-old patient with a persistent spinal deformity ("beggar's posture") complains of spinal immobility in its cervical region. X-ray of the cervical region shows destruction of the inter-articular cartilages of vertebrae C1–C5 and bony ankyloses of C2, C3, and C4. What is the most likely diagnosis in this case?

A. Bekhterev disease
B. Rheumatoid arthritis
C. Osteochondrosis of the cervical spine
D. Duchenne muscular dystrophy
E. Becker muscular dystrophy

143. A patient with COVID-19 presents with increased production of proteins that suppress translation in the infected cells by inducing the synthesis of protein kinases that phosphorylate eIF2 initiation factors. Name these proteins.

A. Interferons
B. Albumins
C. Interleukins
D. Integrins
E. Proteases

144. Bacteriology of the urine of a patient with acute cystitis allowed isolating Gram-negative motile rod-shaped microorganisms that formed large mucous green-blue colonies with the smell of caramel or jasmine on meat-peptone agar. What microorganism has most likely caused the disease in the patient?

A. *Pseudomonas aeruginosa*
B. *Proteus vulgaris*
C. *Klebsiella osaenae*
D. *Staphylococcus aureus*
E. *Escherichia coli*

145. During dental treatment, a 30-year-old woman was given an injection of a drug, after which she lost pain sensitivity for several hours. What is the mechanism of action of this anesthetic?

A. Blockade of sodium channels in nerve fibers
B. Blockade of calcium channels in nerve fibers
C. Increasing the potassium permeability of the membrane of nerve fibers
D. Increasing the sodium permeability of the membrane of nerve fibers
E. —

146. A patient came to the family doctor complaining of an intense headache. Objectively, the following is observed: blood pressure — 220/110 mm Hg, heart rate — 88/min., respiratory rate — 18/min. An uncomplicated hypertensive crisis has been diagnosed. To provide emergency aid in this case, the doctor chose a short-acting calcium channel blocker. What drug did the doctor prescribe?

A. Nifedipine
B. Lacidipine
C. Amlodipine
D. Lercanidipine
E. Felodipine

147. 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. Von Willebrand factor
B. Hageman factor
C. Stuart-Prower factor
D. Fletcher factor (prekallikrein)
E. Labile factor (proaccelerin)

148. 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. Corticotropin-releasing hormone
B. Epidermal growth factor
C. Somatotropic hormone
D. Thyrotropic hormone
E. Growth hormone

149. The effects of the sympathetic and parasympathetic systems on cardiovascular activity were studied in an experiment. As a result of vagus nerve stimulation, decreased blood pressure was observed. This effect of the parasympathetic system is mainly based on the following:

A. Decrease of the heart rate
B. Decrease of the peripheral vascular resistance
C. Decrease of the force of heart contractions
D. Dilation of veins
E. Dilation of arterioles

150. A patient has hemeralopia (impaired dark adaptation of the eyes). What vitamin supplement has an effect on the synthesis of visual purple and can improve vision?

A. Retinol acetate
B. Ergocalciferol
C. Nicotinic acid
D. Tocopherol acetate
E. Cyanocobalamin