

1. A person has reduced diuresis, hypernatremia, hypokalemia. Hypersecretion of which hormone can cause such changes?

- a. Vasopressin
- b. Adrenaline
- c. Parathyroid hormone
- d. Aldosterone**
- e. Atrial natriuretic factor

2. The bacteriological laboratory received research material (gastric lavage, home-cooked dried fish) taken from a patient suspected of botulism. What kind of nutrient medium should the primary sowing of the material be done on?

- a. Sugar meat-peptone broth
- b. Sugar meat-peptone agar
- c. Kitta-Tarozzi environment**
- d. Sugar-blood agar
- e. Serum agar

3. The patient has a colaptoid condition due to a decrease in the tone of peripheral vessels. What drug is most effective in this situation?

- a. Amlodipine besylate
- b. Phenylephrine hydrochloride**
- c. Glycerin trinitrate
- d. Losartan potassium
- e. Dobutamine hydrochloride

4. Mucopolysaccharidosis belongs to accumulation diseases. Due to the lack of enzymes, the breakdown of polysaccharides is disrupted. In patients, their accumulation and increased excretion in urine is observed. In which organelles is the accumulation of mucopolysaccharides?

- a. Endoplasmic reticulum
- b. Lysosomes**
- c. Golgi complexes
- d. Mitochondria
- e. Cellular center

5. A boy in his second year of life often suffers from respiratory diseases, stomatitis, pustular lesions of the skin. Even small damage to the gums and mucous membrane is complicated by long-term inflammation. It was established that there are practically no immunoglobulins of all classes in the child's blood. A decrease in the functional activity of which cell population underlies the described syndrome?

- a. T-lymphocytes
- b. Neutrophils
- c. NK lymphocytes
- d. Macrophages
- e. B-lymphocytes**

6. A patient suffering from coronary heart disease did not inform the doctor that he has bronchospasm attacks. The doctor prescribed a drug, after taking which angina attacks became less frequent, but bronchospasm attacks became more frequent. Specify which drug was prescribed.

- a. Dobutamine hydrochloride
- b. Glycerin trinitrate
- c. Losartan potassium
- d. Atorvastatin calcium
- e. Propranolol hydrochloride**

7. The pregnant woman's condition was complicated by preeclampsia. During the laboratory examination, ketonuria was detected. What substance appeared in the patient's urine?

- a. Hurry up
- b. Pyruvate
- c. Creatinine

d. Lactate

e. Acetoacetate

8. Surfactant synthesis is impaired in premature newborns. What functions does it perform in the lungs?

a. Reduces the surface tension of the walls of the alveoli

b. Increases the surface tension of the walls of the alveoli

c. Impairs the diffusion of O₂ through the aerogematic barrier

d. Facilitates excursion of the diaphragm

e. Increases the resistance of the respiratory tract

9. A 35-year-old man came to the doctor complaining of pain in the liver. It was found that the patient often eats undercooked fish. Very small brown helminth eggs with an oval cap were found in the feces. What is the most likely helminthiasis?

a. Schistosomiasis

b. Dicroceliosis

c. Paragonimosis

d. Fasciolosis

e. Opisthorchosis

10. After consuming salty food, the amount of urine in a person significantly decreased. Which of the following hormones affects kidney function?

a. ACTH

b. Adrenaline

c. Somatostatin

d. Oxytocin

e. Antidiuretic

11. In the experiment, during the simulation of kidney pathology, the animals showed the following symptoms: edema, high proteinuria, hypoproteinemia, dysproteinemia, and hyperlipidemia. What kidney pathology is characterized by these signs?

a. Chronic kidney failure

b. Pyelonephritis

c. Acute renal failure

d. Nephrotic syndrome

e. Acute diffuse glomerulonephritis

12. In the case of non-availability or insufficient formation of lipotropic factors in the human body, fatty dystrophy of the liver develops. Which of the following substances is lipotropic?

a. Holin

b. Riboflavin

c. Cholesterol

d. Triacylglycerides

e. Fatty acids

13. After appendectomy, a 30-year-old patient developed a postoperative scar. Which connective tissue cells primarily provide skin wound regeneration?

a. Melanocytes

b. Adipocytes

c. Fibroblasts

d. Tissue basophils

e. Macrophages

14. Total hyperacidity was detected in a 56-year-old woman during pH measurement of gastric juice. It is related to the dysfunction of which cells of the stomach glands?

a. Main exocrinocytes

b. Parietal exocrinocytes

c. Additional mucocytes

d. Endocrinocytes

e. Cervical mucocytes

15. A patient with chronic heart failure developed cirrhosis of the liver with ascites and swelling of the lower extremities. What changes in blood composition cause ascites in this patient?

- a. Macroglobulinemia
- b. Hypoalbuminemia**
- c. Hypergammaglobulinemia
- d. Hypocholesterolemia
- e. Hypoprothrombinemia

16. During the autopsy of the body of the deceased, aged 43, who had coronary heart disease with the development of a myocardial infarction, the pathologist found pulmonary edema. What pathological changes could cause pulmonary edema?

- a. Acute left ventricular failure**
- b. Blood stasis
- c. Acute general anemia
- d. Small circle ischemia
- e. Acute right ventricular failure

17. A patient with a diagnosis of acute myocardial infarction is prescribed anticoagulant therapy. What indicator of the blood coagulation system should be measured when taking heparin to prevent possible complications due to its overdose?

- a. Erythrocyte sedimentation rates
- b. International normalized relation
- c. Concentrations of fibrinogen
- d. Activated partial thromboplastin time**
- e. Prothrombin index

18. A 32-year-old patient approached a gynecologist with complaints of irregular menstruation, decreased libido, vaginal dryness, and fatigue. In the anamnesis - normal childbirth 5 years ago, without hormonal therapy. Laboratory studies revealed a decrease in the level of estradiol with normal indicators of luteinizing hormone (LH) and follicle-stimulating hormone (FSH). What is the main function of estradiol under physiological conditions?

- a. Progesterone support
- b. Stimulation of testosterone
- c. Increase in prolactin
- d. Inhibition of gonadotropins
- e. Stimulation of follicle growth**

19. A child with congenital malformations was diagnosed with "cat's cry" syndrome. What will be revealed during the study of the karyotype of this child?

- a. An additional 21st chromosome
- b. An additional Y-chromosome
- c. Deletion of the short arm of the 5th chromosome**
- d. Additional X-chromosome
- e. Lack of X chromosome

20. As a result of a head injury, a hematoma was formed localized in the area of the middle cranial fossa on the left. As a result, pupil dilation occurred on the affected side. What nerve is affected?

- a. N. trochlearis
- b. N. trigeminus
- c. N. abduces
- d. N. opticus
- e. N. oculomotorius**

21. A man worked in one of the African countries for 3 years. After moving to Ukraine, he turned to an ophthalmologist with complaints of eye pain, swelling of the eyelids, lacrimation and temporary loss of vision. Under the conjunctiva of the eye, helminths measuring 30-50 mm were found, which had an elongated thread-like body. What diagnosis can the doctor make?

- a. Enterobiosis**
- b. Filariasis**

- c. Ascariasis
- d. Trichocephalosis
- e. Diphyllobotriosis

22. As a result of uncontrolled intake of the vitamin preparation, the child developed anorexia, nausea, vomiting, diarrhea, hyperthermia, hemorrhages appeared on the skin and mucous membranes, and meningism phenomena. What drug did the child take?

- a. Nicotinamide
- b. Cyanocobalamin
- c. Thiamine
- d. Tocopherol acetate
- e. Retinol acetate**

23. In a 40-year-old man, testicular inflammation was complicated by dropsy. Surgical intervention is necessary. Which of the testicles is the last to be dissected by the surgeon during the operation?

- a. Testicular levator muscle
- b. External seminal fascia
- c. Fleshy shell
- d. Internal spermatic fascia
- e. Parietal sheet of the vaginal membrane of the testicle**

24. During the autopsy of a 48-year-old man who died 10 days after a massive aspiration of gastric contents, a cavity with a diameter of about 5 cm was found in the upper part of the right lung, filled with thick yellow-green masses with a sharp unpleasant smell. The wall of the cavity is uneven, swollen, covered with necrotic masses. Microscopically: the wall of the cavity is abundantly infiltrated with neutrophils and macrophages. What disease was found in the lungs of the man?

- a. Acute cavernous tuberculosis
- b. Acute lung abscess**
- c. Lung gangrene
- d. Pneumonia
- e. Bronchiectatic disease

25. In a patient with chronic kidney disease, a decrease in the clearance of inulin to 60 ml/min was established. Which kidney function disorder is this associated with?

- a. Reabsorption in the collecting tubules of the kidney
- b. Glomerular filtration**
- c. Reabsorption in the proximal part of the nephron
- d. Reabsorption in the distal part of the nephron
- e. Tubular secretion

26. As a result of encephalitis, the man developed paralysis of the muscles of the eyeball. The doctor established that the nucleus of the oculomotor nerve was damaged in the patient. In which part of the brain does the pathological process take place?

- a. Midbrain**
- b. Brain
- c. Intermediate brain
- d. The medulla oblongata
- e. The bridge

27. A solution of morphine hydrochloride was injected under the skin of the patient for pain relief. What is the mechanism of analgesic action of this drug?

- a. Blockade of peripheral sensitive receptors
- b. Interaction with opioid receptors**
- c. Violation of conduction of impulses along afferent nerves
- d. Inhibition of formation of pain mediators in peripheral tissues
- e. Change in the emotional color of pain

28. Gram-negative bacilli were isolated from the nasopharynx of a patient suspected of ozena, which formed a capsule on a nutrient medium. What microorganisms caused the disease?

- a. Shigels
- b. Mycoplasmas
- c. Klebsiella**
- d. Chlamydia
- e. Salmonella

29. Tuberculin was administered intraperitoneally to an animal sensitized by tuberculin. 24 hours later, during laparotomy, venous hyperemia and peritoneal edema were detected. A large number of lymphocytes and monocytes are observed in smears-prints from the peritoneum. What inflammation occurs in an animal?

- a. Purulent
- b. Allergic**
- c. Aseptic
- d. Fibrinous
- e. Serous

30. During the examination of the patient, who turned to the neurology department, it was found: smoothing of the frontal folds, inability to squint, the corner of the mouth is down, a symptom of sail. What nerve is damaged?

- a. Okoruhovy
- b. Triple
- c. Facial**
- d. Additional
- e. Wandering

31. The patient developed hemolytic jaundice as a result of the transfusion of Rh incompatible blood. What laboratory blood test confirms this type of jaundice?

- a. Accumulation of unconjugated bilirubin**
- b. Decrease in the content of unconjugated bilirubin
- c. Decrease in the content of conjugated bilirubin
- d. Reduction of stercobilin content
- e. Accumulation of urobilinogen

32. A woman who has had several spontaneous miscarriages is examined in a women's consultation. Based on the clinical and epidemiological history, chronic toxoplasmosis was assumed. What is the most effective laboratory test to confirm the diagnosis?

- a. Skin allergy test
- b. Serological reaction**
- c. Microscopy of a faecal smear
- d. Microscopy of a blood smear
- e. Microscopy of a vaginal smear

33. In the composition of the bone tissue, large cells containing numerous lysosomes, many nuclei, and a corrugated border were found. What is the name of these cells?

- a. Osteoclasts**
- b. Mesenchymal cells
- c. Semi-stem osteogenic cells
- d. Osteocytes
- e. Osteoblasts

34. During the study of the epithelium of the skin, it was found that it consists of several layers of cells. Epitheliocytes of the outer layer do not have nuclei. What is this epithelium?

- a. Multilayer flat nonkeratinized
- b. Multilayer cubic
- c. Multilayer flat keratinized**
- d. Transitional
- e. Multi-row ciliated

35. The patient was hospitalized in the infectious department with manifestations of fever, which

recurred for the second time with an interval of 2 days. In a drop of blood stained according to Romanovsky-Giemza, convoluted cells of blue-violet color were found. What microorganism caused the disease?

- a. Leptospira interrogans
- b. Treponema pallidum
- c. Rickettsia typhi
- d. Plasmodium vivax
- e. Borrelia recurrentis

36. In a 20-year-old woman, a histological examination of the cervical lymph node revealed nodules consisting of shafts of epithelioid, lymphoid cells and multinucleated Pirogov-Langhans giant cells located between them. Caseous necrosis is determined in the center of the nodules. What pathogen, most likely, could cause such changes in the lymph node?

- a. Leprosy mycobacteria
- b. Mushrooms
- c. The spirochete is pale
- d. Rickettsia
- e. Mycobacteria Koch

37. A ten-year-old girl showed signs of precocious puberty during a clinical examination. A decrease in the function of which endocrine gland could cause this phenomenon?

- a. Parathyroid gland
- b. Thyroid gland
- c. Brain substance of adrenal glands
- d. Epiphysis
- e. Prostatic gland

38. In humans, the heart rate is constantly maintained at the level of %mbox40 beats per minute. What is the pacemaker of the heart?

- a. His bundle
- b. Purkinje fibers
- c. Atrioventricular node
- d. Sinoatrial node
- e. His bundle legs

39. A 42-year-old patient complains of pain in the epigastric region, vomiting, emetic masses of the color of "coffee grounds", melena. It is known from the anamnesis that he suffers from peptic ulcer disease. The blood analysis revealed: erythrocytes - $2.8 \cdot 10^{12}/l$, leukocytes - $8 \cdot 10^9/l$, hemoglobin - 90 g/l. Indicate the most likely complication that occurred in the patient.

- a. Bleeding
- b. Malignancy
- c. Perforation
- d. Penetration
- e. Pylorostenosis

40. In the histological preparation of the ovary, a spherical structure is determined, which consists of large glandular cells containing the pigment lutein. What hormone do the cells of this structure produce?

- a. Progesterone
- b. Corticosterone
- c. Testosterone
- d. Estrogen
- e. Aldosterone

41. During a histological examination of a skin tumor, adipose tissue particles of various sizes, separated by irregular layers of connective tissue, were found. What disease do such pathological changes correspond to?

- a. Hemangiomas
- b. Papillomas

- c. Lipoma
- d. Fibroids
- e. Higromi

42. In a patient with a diagnosis of diabetes, an increased content of ketone bodies in the blood was found. From what compound are ketone bodies synthesized?

- a. Acetyl CoA
- b. Succinyl-CoA
- c. Butyryl-CoA
- d. Acyl-CoA
- e. Oxyacyl-CoA

43. A number of blood and connective tissue cells participate in the synthesis and release of inflammatory mediators. Name the cells in which interleukin-1 is synthesized.

- a. Tissue basophils
- b. Lymphocytes
- c. Platelets

d. Macrophages

- e. Eosinophilic granulocytes

44. A 28-year-old female patient was hospitalized in the maternity ward. Due to the weakness of labor activity, the obstetrician-gynecologist prescribed an intravenous infusion of a drug that strengthens and increases the frequency of uterine contractions, which contributed to the progress of labor. What is the main mechanism of action of this drug?

- a. -
- b. Blockade of serotonin receptors
- c. Stimulation of oxytocin receptors**
- d. Inhibition of prostaglandin synthesis
- e. Blockade of calcium channels

45. A 57-year-old patient was hospitalized in serious condition. According to the indicators of biochemical blood analysis, it was found: blood pH - 7.53, arterial blood pCO₂ - 40 mm Hg. Art., SB - 33 mmol/l, BE is - +8 mmol/l. What type of acid-base imbalance is observed in this case?

- a. Compensated non-gaseous alkalosis
- b. Compensated gas alkalosis
- c. Decompensated non-gaseous alkalosis**
- d. Decompensated non-gaseous acidosis
- e. Compensated non-gas acidosis

46. A patient with acute rheumatic fever was prescribed the nonsteroidal anti-inflammatory drug diclofenac sodium. What disease is a contraindication to the appointment of diclofenac sodium?

- a. Bronchitis
- b. Angina
- c. Gastric ulcer disease**
- d. Hypertensive disease
- e. Diabetes

47. The patient developed hyperchromic megaloblastic anemia after gastric resection. What drug should be prescribed?

- a. Cyanocobalamin**
- b. Tranexamic acid
- c. Magnesium sulfate
- d. Ascorbic acid
- e. Iron sulfate

48. Clinical signs of cardiogenic shock appeared in a patient with acute myocarditis. Which of the following pathogenetic mechanisms is leading in the development of shock in a patient?

- a. Decrease in diastolic flow to the heart
- b. Violation of the pumping function of the heart**
- c. Deposit of blood in organs

- d. Decreased vascular tone
- e. Increased peripheral vascular resistance

49. In a 40-year-old patient, the function of the hypoglossal and submandibular salivary glands on the left was disturbed after a maxillofacial injury. Hyposalivation is noted in these glands. The function of which pair of nerves is impaired?

- a. VI
- b. Kh
- c. XII
- d. VII**
- e. XI

50. A woman with rhesus-negative blood of group II gave birth to a child with group IV, rhesus-positive, who was diagnosed with hemolytic disease as a result of rhesus conflict. What blood type is possible in the child's father?

- a. III (B), Rh-positive**
- b. And (O), Rh-positive
- c. III (B), Rh-negative
- d. II (A), Rh-positive
- e. IV (AB), Rh-negative

51. In a patient who had been taking prednisone for a long time, as a result of withdrawal of the drug, there was an exacerbation of the disease, a decrease in blood pressure, and weakness. What can be associated with these manifestations?

- a. Occurrence of insufficiency of the adrenal cortex**
- b. Sensitization to the drug
- c. Drug addiction
- d. Hyperproduction of ACTH
- e. Accumulation of the drug

52. The patient was diagnosed with a tricuspid valve defect. Specify its location.

- a. Between the left atrium and the left ventricle
- b. Mouth of the aorta
- c. The mouth of the coronary sinus
- d. The mouth of the pulmonary trunk
- e. Between the right atrium and the right ventricle**

53. The patient was diagnosed with cirrhosis of the liver, which is accompanied by ascites and general hemodynamic disorders. What syndrome of liver damage occurs in this case?

- a. Portal hypertension**
- b. Hepatoleinal
- c. Hepatocerebral
- d. Hepatorenal
- e. Hepatocardial

54. A year after the resection of 2/3 of the stomach, the patient complained of pale skin, headaches, dizziness, and general weakness. General blood analysis: hemoglobin - 60 g/l, erythrocytes - $2.4 \cdot 10^{12}/l$. What is the cause of this pathological condition?

- a. Increasing the content of folic acid
- b. Decreased secretion of intrinsic factor Castle**
- c. Reduction of absorption of copper
- d. Decreased folic acid content
- e. Increased secretion of intrinsic factor Castle

55. In a twelve-year-old child, a viral infection was complicated by obstructive bronchitis. A drug of which pharmacological group should be prescribed for inhalation in order to eliminate bronchospasm?

- a. M-cholinomimetics
- b. N-cholinomimetics
- c. beta_2-adrenomimetics**

- d. Analeptics
- e. beta₂-adrenoblockers

56. What is the name of the cells of the endocrine complex of the kidney, which are located under the endothelium in the wall of the afferent and efferent arterioles, and contain renin granules in the cytoplasm, which helps to increase blood pressure?

- a. Juxtaglomerular
- b. Mesangiocyes
- c. Cells of a dense spot
- d. Gurmagtig cells
- e. Interstitial cells

57. As a result of the injury, the integrity of the anterior root of the spinal cord was violated. Which processes and which neurons are damaged?

- a. Axons of motor neurons
- b. Axons of sensory neurons
- c. Dendrites of motor neurons
- d. Dendrites of interneurons
- e. Dendrites of sensory neurons

58. During the endoscopic examination, the doctor found a violation of the integrity of the stomach wall within the mucous membrane. Indicate what type of epithelium normally lines the stomach wall from the middle.

- a. Multilayer flat nonkeratinized
- b. Transitional
- c. Single-layer prismatic glandular
- d. Pseudo-multilayered
- e. Multilayer flat keratinized

59. Family hypercholesterolemia was detected during the examination of a teenager suffering from xanthomatosis. The concentration of which lipoproteins is significantly increased in the blood in this pathology?

- a. HDL
- b. Chylomicrons
- c. NEZHK
- d. LDL
- e. LPDNSH

60. During the microscopic examination of the serous discharge from the urethra, pear-shaped cells with flagella, an undulating membrane and an axostyle were found. Specify the causative agent of the disease.

- a. Trichomonas tenax
- b. -
- c. Trichomonas vaginalis
- d. Lamblia intestinalis
- e. Trichomonas hominis

61. The patient was diagnosed with the bone marrow form of acute radiation sickness. Which of the following hematological symptoms will be observed during the flare-up period?

- a. Relative lymphopenia
- b. Relative lymphocytosis
- c. Erythrocytosis
- d. Shift of the leukocyte formula to the left
- e. Pancytopenia

62. The doctor prescribed an anticholinesterase drug that lowers intraocular pressure to a patient diagnosed with glaucoma. Specify this medicine.

- a. Naloxone hydrochloride
- b. Neostigmine methyl sulfate
- c. Norepinephrine hydrotartrate

- d. Lidocaine hydrochloride
- e. Atropine sulfate

63. The histopreparation shows a gland with acini and islets. In acini, secretory cells have two zones: basal (homogeneous basophilic) and apical (zymogenic oxyphilic). What organ has such morphological features?

- a. Submandibular salivary gland
- b. Pancreas gland**
- c. Parotid salivary gland
- d. Liver
- e. Sublingual salivary gland

64. During the research of residual nitrogen, it was found that urea nitrogen is significantly reduced. For which organ disease is this characteristic?

- a. Livers**
- b. the brain
- c. Hearts
- d. Intestine
- e. Stomach

65. Which of the internal organs is most involved in the humoral regulation of erythropoiesis?

- a. Liver
- b. heart
- c. Lungs
- d. The brain
- e. Kidneys**

66. To the complex therapy of a patient suffering from bronchopneumonia accompanied by a debilitating cough, the doctor added a mucolytic drug that depolymerizes mucoproteins. Specify this drug.

- a. Codeine
- b. Acetylcysteine**
- c. Strophanthin
- d. Metoprolol tartrate
- e. Warfarin sodium

67. In a man, a decrease in blood pH and the content of bicarbonate ions (a decrease in the alkaline reserve of the blood), an increase in the content of lactic and pyruvic acids in the blood and urine were detected. What type of acid-base imbalance is observed in the patient?

- a. Mixed alkalosis
- b. Metabolic alkalosis
- c. Metabolic acidosis**
- d. Respiratory acidosis
- e. Respiratory alkalosis

68. A 60-year-old man systematically took digoxin. His condition first improved, and then began to deteriorate, bradycardia and arrhythmia developed. What phenomenon is the cause of this condition?

- a. Induction of microsomal liver enzymes and acceleration of drug metabolism
- b. Decreased sensitivity of adrenoceptors
- c. Accumulation of the drug**
- d. Allergy
- e. Tachyphylaxis

69. In the patient's karyotype of 47 chromosomes, a Barr body was found in the nucleus of a somatic cell. During additional studies, endocrine insufficiency is observed: testicular hypoplasia and lack of spermatogenesis. What syndrome does this phenotype indicate?

- a. Down
- b. Klinefelter**
- c. Shereshevsky-Turner

- d. Patau
- e. Edwards

70. Unlike nerve cells, which do not normally reproduce, stem cells can renew themselves many times. What is the name of multiple regeneration of cells?

- a. Atrophy
- b. Hypertrophy
- c. Proliferation
- d. Differentiation
- e. Apoptosis

71. During a histological examination of the lungs of a premature child, it was established that the alveoli were stuck due to the lack of surfactant. This is related to the lack of development of which cells of the alveolar wall?

- a. Alveolar macrophages
- b. Fibroblast-like cells
- c. Respiratory alveolocytes
- d. Secretory alveolocytes
- e. Clara cells

72. In a 45-year-old female patient, the following changes were detected during an electrocardiographic examination: the P-Q interval is prolonged, while every second or third QRST complex is lost. What kind of heart conduction disorder is observed?

- a. Intraventricular blockade
- b. Atrioventricular blockade of the 1st degree
- c. Sinoauricular blockade
- d. Atrioventricular blockade is complete
- e. Atrioventricular block II degree

73. An electron micrograph of the wall of a pulmonary alveolus shows a large cell with many mitochondria in its cytoplasm, a developed Golgi complex, and osmiophilic lamellar bodies. What is the main function of this cell?

- a. Produces surfactant
- b. Purifies the air
- c. It is a component of the aerogematic barrier
- d. Absorbs microorganisms
- e. Warms the air

74. In a micropreparation made from a punctate of the patient's regional lymph node, stained according to Romanovsky-Giemsa, the doctor found thin microorganisms with 12-14 uniform curls with sharp ends 10-13 microns long, pale pink in color. The causative agent of which infectious disease was discovered?

- a. Trypanosomiasis
- b. Syphilis
- c. Leptospirosis
- d. Leishmaniasis
- e. Typhoid fever

75. After prolonged fasting, the patient developed tissue swelling. What is the cause of this phenomenon?

- a. An increase in oncotic blood pressure
- b. Decrease in osmotic pressure of blood plasma
- c. Increase in osmotic pressure of blood plasma
- d. Lowering of hydrostatic blood pressure
- e. Reduction of oncotic pressure of blood plasma

76. The patient's asthma attacks usually occur at night and are accompanied by bradycardia, spastic pain in the intestines, and diarrhea. Drugs of which group can eliminate these symptoms?

- a. H-cholinoblockers, H₂-histamine blockers
- b. M-choline blockers

- c. Sympatholytics
- d. alpha-blockers
- e. beta blockers

77. During an industrial accident, the patient was exposed to potassium cyanide toxicity, which caused cytochrome oxidase blockade. What pathological process did this lead to?

- a. Hypoxic hypoxia
- b. Tissue hypoxia**
- c. Chemical hypoxia
- d. Circulatory hypoxia
- e. Respiratory hypoxia

78. During submicroscopic examination of the cell, it was found that its cytoplasm contains many lysosomes, phagosomes, and pinocytotic vesicles. Other organelles are moderately developed. What function can such a cell perform?

- a. Phagocytosis**
- b. Reabsorption of sodium ions
- c. Deposition of calcium ions
- d. Synthesis of polysaccharides
- e. Synthesis of lipids

79. In a 34-year-old patient, after an intestinal infection caused by salmonella, the symptoms of the disease began to disappear. What class of immunoglobulins will be detected in the patient's blood during the convalescence period?

- a. IgM
- b. IgE
- c. IgG**
- d. IgA
- e. IgD

80. During the autopsy of the body of a 55-year-old man who had been suffering from a chronic form of tropical malaria for the past eight years, it was found that the gray matter of the brain and the spleen were of an aspid-gray color. What pigment caused this color?

- a. Hematoporphyrin
- b. Hemomelanin**
- c. Melanin
- d. Lipofuscin
- e. Hemosiderin

81. A man turned to the doctor with complaints of pain in the upper part of the abdomen, which often occurs on an empty stomach or at night, nausea, vomiting. After an objective examination, a diagnosis was established: gastric ulcer. Complex therapy is prescribed, which includes a drug whose mechanism of action is related to the blocking of the H^+/K^+-ATP -ase enzyme in parietal cells. Specify this medicine.

- a. Amoxicycline
- b. Bismuth subcitrate
- c. Metronidazole
- d. Omeprazole**
- e. Famotidine

82. Antibodies to proteins gP120 and gP41 were detected during the examination of blood serum in a patient with signs of immunodeficiency. What infection in the patient does this result confirm?

- a. HIV**
- b. TORCH
- c. ESNO
- d. НТЛВ-1
- e. HBV

83. A twelve-year-old boy suffering from bronchial asthma developed a severe asthma attack: marked

expiratory shortness of breath, pallor of the skin. What type of violation of alveolar ventilation is observed in a boy?

- a. Obstructive
- b. Restrictive
- c. Thoraco-diaphragmatic
- d. Neuromuscular
- e. Central

84. As a result of a point hemorrhage in the retina of the eye, the patient lost the ability to see objects in the center of the field of vision. Where did the hemorrhage occur on the retina?

- a. Ciliary part of the retina
- b. A blind spot
- c. Vascular membrane
- d. A yellow spot**
- e. The iris part of the retina

85. A 49-year-old patient complains of a steady increase in blood pressure to 155/120 mm Hg. Art. The recommended hypotensive therapy for a month was not effective. During the additional examination, hypernatremia, hypochloremia and adrenal hyperplasia were revealed. The diagnosis was established: primary hyperaldosteronism. Due to the impossibility of surgical treatment, pharmacological therapy using a mineralocorticoid receptor antagonist was recommended to the patient. Specify the drug recommended for the patient.

- a. Captopril
- b. Metoprolol tartrate
- c. Amlodipine besylate
- d. Spironolactone**
- e. Losartan

86. A patient suffering from a severe form of impaired water-salt metabolism experienced cardiac arrest in diastole. What is the most likely mechanism of cardiac arrest in diastole?

- a. Hyperkalemia**
- b. Hyponatremia
- c. Hypokalemia
- d. Hypernatremia
- e. Dehydration of the body

87. During the autopsy of the body of a 40-year-old man, a sharply expanded lumen of the small intestine, filled with abundant watery colorless liquid with grayish lumps, was found. The wall of the intestine is swollen, on the mucous membrane - a large number of small-point hemorrhages. What infectious disease is characterized by these symptoms?

- a. Amoebiasis
- b. Salmonellosis
- c. Cholera**
- d. Shigellosis
- e. Typhoid fever

88. During selection for revaccination with the BCG vaccine, a Mantoux test was performed on a schoolboy, which turned out to be negative. What features of immunity to tuberculosis do the following test results indicate?

- a. Lack of antitoxic immunity
- b. Absence of humoral immunity
- c. Presence of cellular immunity
- d. Absence of cellular immunity**
- e. Presence of humoral immunity

89. The patient underwent regeneration of the multilayered squamous epithelium two weeks after tooth extraction. What organelles were involved in the restoration of the mucous membrane?

- a. Centrosomes
- b. Ribosomes**

- c. Mitochondria
- d. Postlysosomes
- e. -

90. Listening to the heart sounds, the doctor discovered functional disorders of the mitral valve in the patient. In which place did the doctor listen to his heart?

- a. At the top of the heart
- b. In the second intercostal space on the left near the sternum
- c. Near the xiphoid process
- d. Near the second sterno-costal joint on the right
- e. In the second intercostal space on the right near the sternum

91. During the examination of a 49-year-old patient, a significant increase in blood clotting time, gastrointestinal bleeding and subcutaneous hemorrhages were revealed. Such symptoms can be explained by the lack of which vitamin?

- a. K
- b. RR
- c. N
- d. B_1
- e. E

92. During a biopsy of the endometrium of a healthy woman, taken during the secretory phase of the menstrual cycle, polygonal cells rich in lipids and glycogen were found in the lamina propria of the mucous membrane. What kind of cells are these?

- a. Myofibroblasts
- b. Endothelial cells of damaged vessels
- c. Decidual cells
- d. Fibroblasts
- e. Smooth myocytes

93. During the analysis of a blood smear of a patient diagnosed with acute peritonitis, a laboratory technician observes a large number of leukocytes, the size of which is 10-12 μm , in the field of view of the microscope. Their nuclei have several segments, and the cytoplasm contains small granules, which acquire a pinkish-purple color when stained by the Romanovsky-Giemsa method. What cells predominate in the smear?

- a. Neutrophils
- b. Lymphocytes
- c. Monocytes
- d. Basophils
- e. Eosinophils

94. After being exposed to a high dose of radiation, the adolescent's lymphoid system was significantly damaged, and a large number of lymphocytes were destroyed. Thanks to the activity of which gland is it possible to restore the normal blood formula?

- a. adrenal glands
- b. -
- c. thymus
- d. Pancreas
- e. Thyroid gland

95. What is the main function of the pentose phosphate pathway in adipose tissue?

- a. Destruction of xenobiotics
- b. Energy generation
- c. Generation of NADPH₂
- d. Production of ribose phosphates
- e. Oxidation of glucose to final products

96. As a result of an injury to the bottom of the front abdominal wall, the patient has a damaged ligament located in the inguinal canal. What is this connection?

- a. Inguinal ligament
- b. Ligamentum lacunare
- c. Ligamentum latum uteri
- d. Ligamentum teres uteri**
- e. Ligamentum ovary proprium

97. In a 70-year-old patient who died of heart failure, during the autopsy, deformed, narrowed coronary arteries were found. On the section, the inner surface of the arteries is bumpy, the wall is whitish, brittle, stony density. What stage of atherosclerosis was detected in the patient?

- a. Atherocalcinosis**
- b. Atheromatosis
- c. Ulceration
- d. Liposclerosis
- e. Lipoidosis

98. A woman periodically has attacks of arterial hypertension, which are accompanied by a headache, frequent heartbeat, pronounced sweating, sharp pain in the epigastric region, and an increase in the level of glucose in the blood plasma. A high level of metanephrides was detected in blood plasma and urine. For which tumor disease are these symptoms most characteristic?

- a. Pheochromocytomas**
- b. Stomach cancer
- c. Adenomas of parathyroid glands
- d. Adenomas of the thyroid gland
- e. Ovarian tumors

99. In a patient with subfebrile temperature, a biopsy of an enlarged lymph node revealed numerous granulomas, which contain caseous necrosis in the center, surrounded by epithelioid cells, giant Pirogov-Langhans multinucleated cells, and lymphocytes. What disease is characterized by such pathohistological changes?

- a. Lymphosarcomas
- b. Lymphogranulomatosis
- c. Lymphadenitis
- d. Lymphocytic leukemia
- e. Tuberculosis**

100. A 37-year-old man, who has been smoking for 19 years, complained of a constant cough. During the bronchus biopsy, signs of chronic inflammation, thickening of the mucous membrane, transformation of single-layered ciliated epithelium into multilayered flat epithelium were revealed. What pathological process is observed in the patient?

- a. Epithelial hypertrophy
- b. Leukoplakia
- c. Epithelial hyperplasia
- d. Dysplasia
- e. Metaplasia**

101. Anaerobic breakdown of glucose to lactic acid is regulated by appropriate enzymes. Indicate which enzyme is the main regulator of this process.

- a. Glucose-6-phosphate isomerase
- b. Aldolase
- c. Enolase
- d. Phosphofructokinase**
- e. Lactate dehydrogenase

102. During the examination of a seven-year-old child, clinical signs of Down's disease were revealed.
Укажіть причину цієї патології.

- a. Trisomy on the X chromosome**
- b. Делеція короткого плеча 21-ої хромосоми
- c. Trisomy of the 13th chromosome
- d. Non-separation of sex chromosomes

e. Trisomy of the 21st chromosome

103. Which enzyme prevents inflammation of the mucous membrane of the oral cavity due to its bactericidal effect in case of its damage?

- a. Mucin
- b. Amylase
- c. Nuclease
- d. Lingual lipase

e. Lysozyme

104. In a man who has inflammatory changes of the skin of the face and acne, during the microscopy of the material from the lesions, living organisms of the Arthropoda type, oblong in shape, which have 4 pairs of reduced limbs, were found. Make a preliminary diagnosis.

- a. Skin lesions with scabies itching
- b. Pediculosis
- c. Allergy
- d. Skin lesions with fleas

e. Demodicosis

105. A 65-year-old patient was hospitalized with complaints of a feeling of heaviness in the subcostal areas, enlarged lymph nodes, general weakness, headache. The examination revealed: hepatosplenomegaly, erythrocytes - $2.3 \cdot 10^{12}/\text{l}$, leukocytes - $90 \cdot 10^9/\text{l}$, lymphocytes - 75%, ESR - 35 mm/h, there are many Gumprecht shadows in the peripheral blood smear. Для якого захворювання характерна така клінічна картина?

- a. Iron deficiency anemia
- b. Acute myeloid leukemia
- c. Chronic lymphocytic leukemia
- d. Acute lymphocytic leukemia
- e. Chronic myeloid leukemia

106. After the injury, the patient cannot extend the arm at the elbow joint. Dysfunction of which muscle can be the cause?

- a. M. brachialis
- b. M. triceps brachii
- c. M. biceps brachii
- d. M. subscapularis
- e. M. coraco-brachialis

107. In a patient with pronounced jaundice of the skin, sclera and mucous membranes, the urine has the color of dark beer, the feces are light. The content of direct bilirubin is increased in the blood, bilirubin is determined in the urine. What type of jaundice does the patient have?

- a. Parenchymatous
- b. Excretory
- c. Conjugation
- d. Obturational
- e. Hemolytic

108. The patient, feeling the harbingers of an asthma attack, took several pills orally without the doctor's supervision at short intervals. However, he noticed a short-term improvement in his condition only after taking the first two tablets. Subsequent administrations of the drug did not improve his condition. What phenomenon is caused by the decrease in the effect of the drug?

- a. Addiction
- b. By cumulation
- c. Addiction
- d. Idiosyncrasy
- e. Tachyphylaxis

109. An autopsy of a 45-year-old woman revealed: hypertrichosis, hirsutism, stretch marks on the skin of the thighs and abdomen. In the anterior lobe of the pituitary gland - a tumor (microscopically

confirmed: basophilic adenoma), in the adrenal glands - hyperplasia of the bundle zone. In the history: obesity according to the upper type, steroid diabetes, arterial hypertension and secondary ovarian dysfunction. What disease was detected in a woman?

a. Symonds disease

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115. A 28-year-old woman was hospitalized in the gynecological department with complaints of abdominal pain. An ovarian tumor was diagnosed. During the operation to remove the ovary, it is necessary to cut the ligament connecting the ovary to the uterus. What ligament should the surgeon cut?

a. Lig. cardinal

b. Lig. latum uteri

c. Lig. teres uteri

d. Lig. suspensorium ovarii

e. Lig. ovarii proprium

116. The patient was diagnosed with a fracture of the body of the humerus. She cannot extend her arm at the elbow joint. What nerve is damaged in the patient?

a. N. musculocutaneus

b. N. radialis

c. N. ulnaris

d. N. axillaris

e. N. medianus

117. In a 32-year-old woman, after a history of myocarditis, during an electrocardiographic examination, a heart rhythm disorder was detected (non-sinus rhythm). The functions of which cardiomyocytes are impaired?

a. Pacemaker cells

b. Conductive cardiomyocytes of the legs of the bundle of His

c. Conductive cardiomyocytes of the bundle of His

d. Typical cardiomyocytes

e. Transient conducting cardiomyocytes

118. The patient was hospitalized with a preliminary diagnosis: typhoid fever. He has been ill for three days. Body temperature - 39°C. What method of laboratory diagnostics should be used to confirm the diagnosis?

a. Allocation of urine culture

b. Allocation of coproculture

c. Allocation of white culture

d. Serological method

e. Allocation of blood culture

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123. The patient was diagnosed with a brain tumor, which is located in the area of the spur groove. Which function will be disturbed if the tumor will actively develop?

a. Touch sensitivity

b. The taste

c. hearing

d. Vision

e. Smell

124. In a 47-year-old female patient, the interphalangeal and metacarpal-phalangeal joints are easily dislocated and subluxated with a typical deviation of the fingers in the form of "walrus fins".

Microscopic examination revealed: growth of synovial membrane villi, destruction of cartilage and formation of pannus. What disease causes such pathological changes?

a. Rheumatic arthritis

b. Osteoarthritis

c. Bekhterev's disease

d. Rheumatoid arthritis

e. Systemic lupus erythematosus

125. The formation of free ammonia in the cells of renal tubules is mainly associated with the conversion of a substitute amino acid under the action of an enzyme that belongs to the class of hydrolases. Name this enzyme.

a. Glutaminase

b. Glutamate dehydrogenase

c. Glutamine synthetase

d. Glutamate decarboxylase

e. Asparaginase

126. A patient with alkaptonuria has signs of arthritis, ochronosis. The deposition of which substance in the joints caused the appearance of pain in this case?

a. Phosphates

b. Oxalates

c. Homogenizers

d. Uratov

e. Carbonates

127. In a cell that divides mitotically, daughter chromatids diverge towards the poles of the cell. At what stage of the mitotic cycle is the cell?

a. Metaphase

b. Anaphase

c. Prophase

d. Telophase

e. Interphase

128. A one-and-a-half-year-old boy constantly suffers from pyoderma and has had pneumonia three times. In the blood it was found: a reduced amount of immunoglobulins G and A, no plasma cells.

What type of immunodeficiency did the child have?

a. Louis-Bar syndrome

b. -

c. Hypoplasia of the thymus gland

d. Bruton's hypogammaglobulinemia

e. Wiskott-Aldrich syndrome

129. During the examination by a pediatrician, multiple petechiae were found on the skin of a ten-year-old child, as well as bleeding gums and a reduced level of vitamin C in the urine. What process is broken in this case?

a. Degradation of proteoglycans

b. Synthesis of proteoglycans

c. Activation of hyaluronidase

d. Collagen breakdown

e. Synthesis of collagen

130. Spherical microbes, which are located like a "bunch" of grapes, were found in the culture of pus from a boil. What microbes were found?

a. Streptococci

b. Tetracocci

c. Micrococci

d. Staphylococci

e. Diplococci

131. During a microscopic examination of the lungs of a 52-year-old patient, foci of necrosis surrounded by a shaft of epithelioid cells and lymphocytes were found. Between lymphocytes and epithelioid cells, there are large rounded cells with a large number of nuclei located on the periphery. What is the name of the detected formation?

- a. Lepromatous granuloma
- b. Sarcoid granuloma
- c. Tuberculous granuloma
- d. Cancer pearl
- e. Syphilitic granuloma

132. A 23-year-old female patient was hospitalized in serious condition with a brain injury. Breathing is characterized by a convulsive long inhalation, which is interrupted by a short exhalation. What type of breathing is this characteristic of?

- a. Біота
- b. Чейн-Стокса
- c. Апнейстичне
- d. Куссмауля
- e. Гаспінг

133. A decrease in the number of granulocytes in the patient's blood due to exposure to ionizing radiation was determined. What causes agranulocytosis?

- a. The development of the autoimmune process
- b. By increasing the transition of granulocytes into tissues
- c. By increasing the destruction of leukocytes
- d. Violation of the release of mature leukocytes from the bone marrow

e. Suppression of leukopoiesis

134. A 65-year-old patient, who had been suffering from aortic valve stenosis for a long time, was hospitalized with signs of chronic cardiovascular insufficiency after a viral infection: shortness of breath, cyanosis, edema. What type of hypoxia is observed in the patient?

- a. Тканинний
- b. Гемічний
- c. Дихальний
- d. Гілоксичний

e. Circulatory

135. A 67-year-old woman, who has been suffering from cholecystitis for a long time, suddenly developed sharp pain in the upper abdomen, nausea, and vomiting after eating. The diagnosis was established: acute pancreatitis. What is the main link in the pathogenesis of this disease?

- a. Increased activation of enzymes in the duodenum
- b. A decrease in the level of enzymes in pancreatic juice
- c. Decreased secretion of pancreatic polypeptide
- d. Increase in the level of cholecystokinin

e. Premature activation of pancreatic enzymes

136. During the autopsy of the body of a 34-year-old man who died of chronic kidney disease due to renal amyloidosis, the pathologist found in the lungs, mainly in the lower lobes: multiple diffuse dilations of the bronchi, in the lumens of which purulent content. The cut surface of the lungs has a small-cell appearance, reminiscent of beehives. Histologically, in the wall of the bronchi: chronic inflammation, muscle fibers are replaced by connective tissue. What changes in the lungs did the doctor find?

- a. Lung abscesses
- b. Bronchopneumonia
- c. Bronchiectasis
- d. Chronic pneumonia
- e. Chronic bronchitis

137. Most of the participants of Magellan's expedition to America died of vitamin deficiency. The disease was manifested by general weakness, subcutaneous hemorrhages, tooth loss, bleeding from the gums. Specify the name of this vitamin deficiency.

- a. Birmer's anemia
- b. Scurvy
- c. Polyneuritis

- d. Pellagra
- e. Rickets

138. A patient diagnosed with hypertension is taking lisinopril. What is the mechanism of action of this hypotensive drug?

a. Inhibition of angiotensin-converting enzyme

- b. Blockade of angiotensin receptors
- c. Inhibition of phosphodiesterase
- d. Blockade of Ca^{2+} channels
- e. Inhibition of cyclooxygenase

139. Stem hematopoietic cells were damaged as a result of radiation. The formation of which connective tissue cells will be disturbed?

- a. Fibroblasts

b. Macrophages

- c. pericytes
- d. Melanocytes
- e. Adipocytes

140. The patient was diagnosed with mitral valve stenosis. To which pathogenetic type of heart failure does this condition belong?

- a. Heart failure due to myocardial hypertrophy

- b. Heart failure due to myocardial damage

c. Heart failure from resistance overload

- d. Heart failure due to volume overload

- e. Mixed form of heart failure

141. A patient with exacerbation of gastric ulcer turned to the doctor. A drug from which group of drugs should be used in the patient's complex therapy?

- a. %beta-blockers

b. Blockers of H₂-histamine receptors

- c. Blockers of H₁-histamine receptors

- d. %alpha-adrenomimetics

- e. %alpha-blockers

142. A 66-year-old man was diagnosed with a malignant epithelial tumor originating from a medium-sized bronchus. What epithelium is the source of the development of this tumor?

- a. Multilayered keratinized

b. Single-layer multi-row ciliated

- c. Multi-layered non-keratinized

- d. Single-layer multi-row transitional

- e. Single-layer prismatic

143. An arrhythmia occurred in a patient with heart failure, in which the frequency of contractions of the atria and ventricles was 70/min and 35/min on the ECG. Violation of which heart function is observed in the patient?

- a. Excitability and conductivity

- b. Abbreviations

c. Conductivity

- d. Excitability

- e. Automatism

144. The patient has sensory aphasia (does not understand the language addressed to him). What is the localization of damage to the nervous system?

- a. Inferior frontal gyrus

b. Superior temporal gyrus

- c. Middle temporal gyrus

- d. Middle frontal gyrus

- e. Superior frontal gyrus

145. When there is a lack of vitamin A in a person, twilight vision is impaired. What photoreceptor cells of the retina are responsible for twilight vision?

- a. Cone neurosensory cells
- b. Horizontal neurocytes
- c. Bipolar neurons
- d. Rod neurosensory cells**
- e. Ganglion nerve cells

146. In a 30-year-old man, the following changes were detected during an ECG: an area of abnormal contraction in which the P wave is absent, the QRS complex is deformed, the T wave is negative and opposite to the QRS complex. What pathological condition is observed in the patient?

- a. Sinus arrhythmia
- b. Ventricular extrasystole**
- c. Atrial extrasystole
- d. Paroxysmal tachycardia
- e. Atrioventricular extrasystole

147. In an HIV-infected patient, suppression of the activity of the immune system is observed.

Damage to which cells is most responsible for the state of immunodeficiency in this patient?

- a. Macrophages
- b. T-suppressors
- c. T-killers
- d. B-lymphocytes
- e. T-helpers**

148. A 49-year-old patient has an increased concentration of uric acid in the blood. To reduce the level of uric acid, the doctor prescribed allopurinol. Allopurinol is a competitive inhibitor of which enzyme?

- a. Xanthine oxidase**
- b. Adenine phosphoribosyltransferases
- c. Adenosine deaminase
- d. Guanine deaminases
- e. Hypoxanthinephoribosyltransferases

149. During the examination, the patient has calcification of the skin, Raynaud's syndrome, esophageal motility disorders, sclerodactyly, and telangiectasia. These changes are called CREST syndrome. What disease is characterized by such symptoms?

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

150. The patient was found to have: tachycardia, increase in basic metabolism and body temperature, weight loss, increased excitability. Increased secretion of hormones of which gland is the cause of these disorders?

- a. Sexual
- b. Thyroid
- c. Thyroid**
- d. Adrenal
- e. Neurohypophysis