



KROK-1 ANSWER KEY

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MEDICO ASPIRANTS COACHING INSTITUTE

Ternopil , Ukraine



Dr Shivam Yadav



mbbsexperts_medicoaspirants



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www.medicoaspirants.com

Contact For 30 June Exam Support : +380639503061

1. Absence or insufficient production of lipotropic factors in the human body causes development of fatty degeneration in the liver. What substance can be classified as lipotropic?

- A. Choline
- B. Triacylglycerides
- C. Riboflavin
- D. Fatty acids
- E. Cholesterol

2. A man, who recently returned from an African country, came to the urologist complaining of painful urination. A urine sample, obtained for analysis during the daytime, contains eggs with a characteristic spike. Make the diagnosis.

- A. Dicrocoeliasis
- B. Japanese schistosomiasis
- C. Opisthorchiasis
- D. Intestinal schistosomiasis
- E. Urogenital schistosomiasis

3. A 9-year-old child developed a severe case of purulent destructive pneumonia, for which the child received a massive antibacterial therapy. The disease was rapidly progressing. Against the background of marked intoxication, a sharp drop in blood pressure was registered, the patient went into a state of shock, which resulted in the death of the patient. What etiopathogenetic type of shock developed in the child?

- A. Hypovolemic shock
- B. Febrile shock
- C. Hemolytic shock
- D. Toxic shock syndrome
- E. Cardiogenic shock

4. One of the causes of pernicious anemia is disturbed synthesis of transcobalamin – Castle's intrinsic factor – by the parietal cells of the stomach. What substance is called Castle's extrinsic factor?

- A. Cobalamin
- B. Folic acid
- C. Riboflavin
- D. Biotin
- E. Pyridoxine

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

- A. Thiamine
- B. Choline
- C. Pyridoxine
- D. Tocopherol
- E. Gluconate

6. A 32-year-old man was diagnosed with acute radiation sickness. Laboratory analysis detected a sharp decrease in platelet serotonin levels. The most likely cause of a decrease in platelet serotonin is a disturbed decarboxylation of:

- A. 5-Oxytryptophan
- B. Tyrosine
- C. Histidine
- D. Pyruvic acid
- E. Serine

7. A 30-year-old man with an incised wound on the plantar surface of the left foot was brought to the traumatology department. Lifting of the lateral side of the foot is limited. What muscle is likely to be functionally disturbed?

- A. Peroneus longus muscle
- B. Triceps muscle of calf
- C. Soleus muscle
- D. Anterior tibial muscle
- E. Flexor hallucis longus muscle

8. During an intense workout, the number of trophic inclusions in the cells of the athlete's liver and skeletal muscles decreases. What substance belongs to such trophic inclusions?

- A. Glycogen granules
- B. Lipofuscin granules
- C. Starch granules
- D. Oxalic acid crystals
- E. Creatinin granules

9. Pathological examination of the spinal cord of a deceased 70-year-old man shows destruction and a decrease in the number of cells in the nuclei of the cervical and thoracic anterior horns. What functions were impaired in this man during his life?

- A. Motor functions of the upper limbs
- B. Sensitivity and motor functions of the upper limbs
- C. Motor functions of the lower limbs
- D. Sensitivity of the lower limbs
- E. Sensitivity of the upper limbs

10. Oxygen tension in the arterial blood of a person has increased to 104 mm Hg., while carbon dioxide tension has been reduced to 36 mm Hg. It is likely to be caused by:

- A. Moderate physical exertion
- B. Holding one's breath
- C. High altitude
- D. Intense physical exertion
- E. **Voluntary hyperventilation**

11. A 45-year-old woman developed an acute inflammatory disease of her upper respiratory tract and eyes during the flowering period. She presents with hyperemia, edema, and mucous discharge. Increase in the number of what type of leukocytosis would be characteristic in this case?

- A. Lymphocytosis
- B. Monocytosis
- C. Basophilic
- D. **Eosinophilic**
- E. Neutrophilic

12. A 40-year-old woman during examination presents with intensified basal metabolic rate. Excess in presence of what hormone leads to such condition?

- A. Glucagon
- B. Somatostatin
- C. Thyrocalcitonin
- D. **Triiodothyronine**
- E. Aldosterone

13. In an experiment on a dog, it became necessary to reduce the excitability of the myocardium. What solution should be administered to the animal intravenously for this purpose?

- A. **Potassium chloride**
- B. Glucose
- C. Sodium chloride
- D. Sodium bicarbonate
- E. Calcium chloride

14. A man presents with decreased blood pH, low levels of bicarbonate ions (a drop in the blood alkaline reserve), and increased blood and urine levels of lactic and pyruvic acids. What type of acid-base imbalance is it?

- A. Metabolic alkalosis
- B. Respiratory alkalosis
- C. Mixed alkalosis
- D. Respiratory acidosis
- E. **Metabolic acidosis**

15. In an experiment, a frog neuromuscular preparation had been processed with a curare-like substance, which led to the disappearance of muscle contractions in response to electrical stimulation. What function of the muscle cell membrane is disrupted by curare-like substances?

- A. Change in the permeability for different substances
- B. Creation of the electric potentials on the both sides of the membrane
- C. **Reception of the mediators in the neuromuscular synapse**
- D. Creation of a barrier between the intracellular environment and surrounding intercellular fluid
- E. Maintenance of the internal cell structure, its cytoskeleton

16. A 56-year-old man complains of thirst and frequent urination. The endocrinologist diagnosed this patient with diabetes mellitus and prescribed him glibenclamide. What mechanism of action does this drug have?

- A. Inhibits glucose absorption in the intestine
- B. Facilitates glucose uptake by the tissues
- C. Facilitates glucose transport through cell membranes
- D. **Stimulates β -cells of Langerhans islets**
- E. Inhibits α -cells of Langerhans islets

17. Name the drug that has a detrimental effect on erythrocytic forms of malarial plasmodiae and *Entamoeba histolytica* and is used for treatment and prevention of malaria, as well as for treatment of amebiasis and collagen diseases.

- A. Quinine
- B. Tetracycline
- C. Emetine hydrochloride
- D. Erythromycin
- E. **Chingamin (Chloroquine)**

18. The patient's blood test shows a significant increase in the activity of the MB-fraction of CPK (creatin phosphokinase) and LDH-1. What pathology can it indicate?

- A. Pancreatitis
- B. Cholecystitis
- C. Hepatitis
- D. **Myocardial infarction**
- E. Rheumatism

19. A 48-year-old man is unconscious. He has a history of several syncopal episodes with convulsions. ECG shows deformed QRS complexes unconnected with P waves, atrial contractions are approximately 70/min., ventricular contractions — 25–30/min. Name the type of arrhythmia in this case:

- A. Intraventricular block
- B. Complete atrioventricular block**
- C. Second-degree atrioventricular block
- D. Intraatrial block
- E. First-degree atrioventricular block

20. Autopsy of the body of a child shows a primary intestinal tuberculosis complex: the primary affect is a jejunal ulcer, there are lymphangitis and regional caseous lymphadenitis. The death occurred as a result of ulcer perforation and development of diffuse peritonitis. What is the route of tuberculosis infection in this child?

- A. Aerogenic
- B. Transplacental
- C. Alimentary**
- D. Contact
- E. Mixed

21. A 63-year-old woman had a gastrointestinal hemorrhage that exposed blood proteins to intestinal microorganisms, i.e. they became a subject of putrefaction. It resulted in an increased concentration of the following substance in the patient's blood:

- A. Indole**
- B. Creatine
- C. Globulin
- D. Creatinine
- E. Albumin

22. A patient with essential hypertension, taking hypothiazide (hydrochlorothiazide) treatment. He complains of general weakness, loss of appetite, and palpitations. He has muscle hypotonia, flaccid paralyses, and decreased intestinal peristalsis. What can be the cause of this condition?

- A. Hypokalemia**
- B. Hyperkalemia
- C. Hyponatremia
- D. Hyperuricemia
- E. Hypercalcemia

23. 24 hours after an appendectomy the patient's blood test shows neutrophilic leukocytosis with a regenerative shift. What is the most likely mechanism of absolute leukocytosis development in the patient's peripheral blood?

- A. Immunity activation
- B. Leukocyte redistribution
- C. Decreased leukocyte disintegration
- D. Intensification of leukopoiesis**
- E. Deceleration of leukocyte migration to the tissues

24. A group of researchers aimed to

study cardiac physiology found that overstretching of atria in the heart leads to decreased sodium reabsorption in the distal convoluted tubule and increase in glomerular filtration rate. Which of the following is the most likely cause of physiologic effects discovered by researchers?

- A. Vasopressin
- B. Angiotensin
- C. Renin
- D. Aldosterone
- E. Natriuretic peptide**

25. A patient with an acute transmural left ventricular myocardial infarction has died of cardiac rupture and tamponade. What process in the infarction zone could have contributed to the rupture?

- A. Increased pressure in the pulmonary circulation
- B. Thinning of the cicatricially-changed stomach wall with formation of an aneurysm
- C. Scar formation with thinning of the wall of the left cardiac ventricle
- D. Replacement with connective tissue with a decrease in myocardial elasticity
- E. Autolytic processes with pathologic softening of myocardial tissue (myomalacia)**

26. A 35-year-old parturient woman is diagnosed with a pain syndrome associated with a delay in the first stage of labor. What medicine would be optimal for pain relief in this case?

- A. Morphine
- B. Codeine
- C. Promedol (Trimeperidine)**
- D. Ketamine
- E. Analgin (Metamizole)

27. ECG of a man shows an increased duration of the QT interval. It may be due to a decrease in the speed of the following in the ventricles:

- A. Depolarization and repolarization**
- B. Contraction
- C. Depolarization
- D. Repolarization
- E. Relaxation

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

42/min. What type of arrhythmia is the most likely in this case?

- A. Sinus bradycardia
- B. Complete AV block
- C. I degree AV block
- D. Sinoauricular block
- E. II degree AV block

39. Mother of a 2-year-old child made an appointment with the dentist. She complains of teeth destruction in her child. Examination shows that the milk teeth of the child are deformed, carious, and have a brown border at their cervixes. Medical history of the mother revealed that during her pregnancy she had been taking antibiotics without the doctor's prescription. What group of antibiotics with the most marked teratogenic effect was likely taken by the mother?

- A. Penicillins
- B. Tetracyclines
- C. Aminoglycosides
- D. Macrolides
- E. Cephalosporins

40. A young man provisionally diagnosed with Klinefelter syndrome came to a genetic consultancy. What genetic method can be used to confirm the diagnosis?

- A. Cytogenetics
- B. Twin study
- C. Population statistics
- D. Biochemistry
- E. Genealogy

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

- A. Krebs cycle
- B. Glycogen phosphorylation
- C. Glycolysis
- D. Pentose phosphate pathway of glucose oxidation
- E. Gluconeogenesis

42. In hepatitis and myocardial infarction, the activity of alanine and aspartate aminotransferases sharply increases in the patients' blood plasma. Why does this increase in the activity of these enzymes in the blood occur?

- A. Hormone-induced increase in enzyme activity
- B. Amino acid synthesis acceleration in tissues
- C. Amino acid breakdown acceleration in tissues
- D. Pyridoxine deficiency
- E. Damage to cell membranes and release of enzymes into the blood

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

- A. Oxidative phosphorylation
- B. Tissue respiration
- C. Lipid peroxidation
- D. Peroxidase oxidation of fats
- E. Microsomal oxidation

44. Hematologic study shows the following pattern: erythrocytes – $2,8 \cdot 10^{12}/L$, Hb – 80 g/L, color index – 0.85, reticulocytes – 0.1%, platelets – 160 thousand per microliter, leukocytes – $60 \cdot 10^9/L$. Basocytes – 2%, eosinophils – 8%, promyelocytes – 5%, myelocytes – 5%, juvenile – 16%, stab neutrophils – 20%, segmented neutrophils – 34%, lymphocytes – 5%, monocytes – 5%. This clinical presentation indicates the following blood pathology:

- A. Undifferentiated leukemia
- B. Chronic lymphocytic leukemia
- C. Hemolytic anemia
- D. Chronic myeloleukemia
- E. Acute myeloleukemia

45. A 40-year-old man with pulmonary tuberculosis was prescribed isoniazid. Prolonged taking of this drug can result in development of the following vitamin deficiency:

- A. Thiamine
- B. Folic acid
- C. Biotin
- D. Cobalamin
- E. Pyridoxine

46. A man presents with atrophy of the posterior group of calf muscles. What nerve is affected in this case?

- A. Superficial peroneal nerve
- B. Femoral nerve
- C. Deep peroneal nerve
- D. Tibial nerve
- E. Sural nerve

47. A specimen of a 10-day-old human embryo shows two interconnected sacs

- A. Venous plethora
- B. Purulent inflammation
- C. **Catarrhal inflammation**
- D. Bruise
- E. Hemorrhagic inflammation

29. Histology of the cardiac auricle in a patient with mitral valve stenosis revealed Aschoff-Talalayev granulomas. What genesis of heart disease is in this case evident, according to this histological study?

- A. Congenital
- B. Septic
- C. Atherosclerotic
- D. **Rheumatic**
- E. Syphilitic

30. After a collision of two cars, one of the drivers has an extremely painful deformity in the middle third of the left shin. The pain intensifies on an attempt to move the left shin. The ends of a bone with triangular section protrude from the wound. The blood loss increases. What bone is likely to be damaged?

- A. Talus
- B. Tibia
- C. Patella
- D. Fibula
- E. Femur

31. A 20-year-old woman with intestinal polyposis has a history of frequent fungal and viral diseases. What part of the immune system is most likely to be deficient in this case?

- A. B-lymphocytes
- B. Natural killers
- C. Phagocytes
- D. **T-lymphocytes**
- E. Complement

32. People, who live in hot climates, have reduced blood levels of a certain hormone that is important for adaptive thermoregulation. What hormone is it?

- A. Insulin
- B. Cortisol
- C. Somatotropin
- D. Glucagon
- E. **Thyroxine**

33. In the process of human aging, the synthesis and secretion of pancreatic juice decreases and its trypsin levels become lower. It results in disturbed breakdown of:

- A. Nucleic acids
- B. Phospholipids
- C. Polysaccharides
- D. Lipids
- E. **Proteins**

34. A 60-year-old man was taking digoxin systematically. His condition first improved and then started to deteriorate. He developed bradycardia and arrhythmia. What is the underlying phenomenon of this state?

- A. Allergy
- B. Tachyphylaxis
- C. Reduced sensitivity of adrenergic receptors
- D. Enzyme induction
- E. **Material cumulation**

35. A patient with high blood levels of sulfhemoglobin was brought into the intensive care unit. What type of hypoxia occurred in this case?

- A. Respiratory type
- B. **Hemic type**
- C. Circulatory type
- D. Exogenous type
- E. Tissue type

36. A patient has gradually developed a skin plaque on his face. In the center of this plaque there are necrotic patch and an ulcer. Histopathological analysis of the biopsy material reveals proliferation of atypical epithelial cells with large number of pathologic mitoses. Make the diagnosis.

- A. Sarcoma
- B. Fibroma
- C. Papilloma
- D. **Skin cancer**
- E. Trophic ulcer

37. A worker at a factory that produces vanadium compounds presents with increased ossification caused by high calcium levels in his bone tissues. This condition is likely to be associated with the activity of:

- A. Fibroblasts
- B. Chondrocytes
- C. Osteoclasts
- D. **Osteoblasts**
- E. Fibrocytes

38. A 63-year-old man, according to his relatives, had three episodes of unconsciousness. His respiration rate is 18/min., heart rate - 45/min., blood pressure - 100/70 mm Hg. ECG shows that the frequency of P waves is 80/min., while the frequency of ventricular complexes is

(amniotic and yolk sacs). Name the structure located in the place where these two sacs connect:

- A. Embryonic shield
- B. Roof of the amniotic sac
- C. Extraembryonic mesoderm
- D. Amniotic stalk
- E. Floor of the amniotic sac

48. A 45-year-old man with acute pneumonia has developed pulmonary edema on the 6th day of illness, which resulted in his death. Autopsy shows that the entire upper lobe of the right lung is affected. This lobe is enlarged, dense, and gray on section. It has fibrinous deposits on the pleura. A cloudy liquid flows from the section surface. Microscopy shows fibrin, neutrophils, macrophages, and hemolyzed erythrocytes in the lumen of the alveoli. What type of pneumonia is the patient present with?

- A. Croupous pneumonia
- B. Viral pneumonia
- C. Staphylococcal bronchopneumonia
- D. Adult respiratory distress syndrome
- E. Hypostatic pneumonia

49. Anticoagulant therapy is indicated in cases of acute thrombosis. What direct-acting anticoagulant is used if there is a risk of thrombosis?

- A. Pentoxifylline
- B. Fraxiparine (Nadroparin)
- C. Warfarin
- D. Dipyridamole
- E. Heparin

50. During a surgery, the patient received a blood transfusion. In such cases, the donor blood must be tested for antigens of the following causative agent:

- A. Hepatitis A virus
- B. Hepatitis B virus
- C. Enteroviruses
- D. Hepatitis E virus
- E. Adenoviruses

51. Autopsy of the body of a 61-year-old man with rheumatoid arthritis shows enlarged and dense yellow-white kidneys with a waxy sheen and areas of cicatricial depressions on their surface. Congo red staining reveals deposition of homogeneous pink masses in the capillary loops of the glomeruli, in the walls of the arterioles and arteries, in the basement membrane of the tubules, and in the stroma. In this case, rheumatoid arthritis was complicated by the development of

the following process:

- A. Postinfectious glomerulonephritis
- B. Secondary renal amyloidosis
- C. Rapidly progressive glomerulonephritis
- D. Acute necrotizing nephrosis
- E. Fibroplastic glomerulonephritis

52. A histological specimen demonstrates a vessel with the wall that consists of endothelium, basement membrane, and loose connective tissue. This vessel belongs to the following type:

- A. Lymph capillary
- B. Hemocapillary
- C. Muscular vein
- D. Non-muscular vein
- E. Artery

53. A toad was given a solution of a certain chemical substance. As a result, it responds with generalized convulsions to any kind of irritation. What was the toad given in this case?

- A. Dopamine
- B. Strychnine
- C. Serotonin
- D. Acetylcholine
- E. Adrenalin

54. Exo- and endotoxins, aggression enzymes play a significant role in the pathogenesis of cholera. Dehydration is the main syndrome of this disease. Which of the following pathogenetic effects is the main cause of dehydration?

- A. Membrane phospholipid defect
- B. Neuraminic acid elimination
- C. Adenylate cyclase activation
- D. Hyaluronic acid destruction
- E. Mucin destruction

55. Fibrogastroscopy of a 48-year-old man, a driver, with complaints of epigastric pain after eating shows hyperemic gastric mucosa with reduced folds. In the gastrobiopsy specimen, microscopy detects thinned mucosa, reduced number of glands, and proliferation of connective tissue infiltrated by lymphocytes and plasma cells. Make a diagnosis.

- A. Giant hypertrophic gastritis
- B. Acute catarrhal gastritis
- C. Chronic atrophic gastritis
- D. Acute purulent gastritis
- E. Chronic superficial gastritis

56. A 38-year-old woman, who was diagnosed with systemic lupus erythematosus (SLE) 3 years ago, came to her physician with a complaint of facial

swelling and decreased urination that she first noticed 2 weeks ago. She currently takes azathioprine and corticosteroid. Her vital signs show blood pressure 150/90 mm Hg, pulse - 91/min., temperature - 36.8°C and respiratory rate - 15/min. On physical examination, the doctor notices erythematous rash on her face exhibiting a butterfly pattern. The laboratory studies reveal hypercholesterolemia, hypertriglyceridemia, and proteinuria. The most likely mechanism of SLE's complication in this patient is:

- A. —
- B. Increased plasma oncotic pressure
- C. Immune complex-mediated glomerular disease
- D. Acute infection of the kidney
- E. Decrease in renal blood flow (ischemic nephropathy)

57. Patients from the same family were admitted to a hospital with edema of the eyelids and face, fever, eosinophilia, headache, and muscle pain. The disease onset occurred 7-10 days after eating pork sausage. Make the diagnosis.

- A. Taeniasis
- B. Taeniarhynchosis
- C. Cysticercosis
- D. Trichinellosis
- E. Echinococcosis

58. Examination revealed that the patient has an insufficient immunoglobulin count. The likely cause of this finding is a disfunction of the following immune system cells:

- A. Plasma cells
- B. Plasmablasts
- C. T-suppressors
- D. T-helpers
- E. T-killers

59. A man suffers from acne and inflammatory changes in the skin of his face. Microscopy of a material obtained from the lesion foci reveals living elongated creatures of the phylum Arthropoda type with 4 pairs of reduced limbs. What is the preliminary diagnosis?

- A. *Sarcoptes scabiei* lesions
- B. Demodicosis
- C. Allergy
- D. Pediculosis
- E. Flea lesions

60. Autopsy of the body of a 45-year-old woman, who was suffering from upper-body obesity, steroid-induced

diabetes mellitus, arterial hypertension, and secondary ovarian dysfunction, shows hypertrichosis, hirsutism, and striae on the skin of the thighs and abdomen. In the anterior part of the pituitary gland there is a tumor (microscopically it is a basophilic adenoma). In the adrenal glands, hyperplasia of the fascicular zone is observed. What diagnosis is the most likely?

- A. Cushing disease
- B. Cushing syndrome
- C. Adiposogenital dystrophy
- D. Pituitary dwarfism
- E. Simmonds disease

61. A 7-year-old girl has signs of anemia. Laboratory testing determined the deficiency of pyruvate kinase in her erythrocytes. In this case the main role in anemia development belongs to the disturbance of a certain process. What process is disturbed in this girl?

- A. Amino acid deamination
- B. Oxidative phosphorylation
- C. Anaerobic glycolysis
- D. Peroxide decomposition
- E. Tissue respiration

62. Because of the violation of the safety rule while working with organophosphorus insecticide, a worker has developed bronchospasm. Which of the listed broncholytics is indicated in this case?

- A. Atropine
- B. Adrenalin
- C. Berotec (Fenoterol)
- D. Euphyllin (Aminophylline)
- E. Ephedrine

63. A bioterrorist has mailed an envelope with a powder that is suspected to contain anthrax causative agent. This envelope can remain dangerous for a long time, because anthrax causative agent:

- A. Forms a polysaccharide capsule
- B. Forms a protein capsule
- C. Belongs to actinomycetes
- D. Is a spore-former
- E. Forms flagella

64. A 10-year-old child, due to the detected tumor, underwent a removal of the posterior pituitary lobe. As a result, the following state will occur:

- A. Hyperglycemia
- B. Delayed mental development
- C. Delayed growth
- D. Decreased diuresis
- E. Increased diuresis

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

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

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

- A. Neutrophilia with a regenerative left shift
- B. Neutrophilia with a degenerative left shift
- C. Neutrophilia with a right shift
- D. Absolute monocytopenia
- E. Absolute lymphocytopenia

67. Examination of a man with signs of hypertension shows that the optimal medicine for him would be a drug that manages the blood pressure through the renin-angiotensin system. Name this drug:

- A. Anaprilin (Propranolol)
- B. Dibazol (Bendazol)
- C. Apressin (Hydralazine)
- D. Octadine (Guanethidine)
- E. Lisinopril

68. A biopsy material was obtained from the arches of the patient's soft palate due to a suspected tumor (macroscopy detected an ulcer with the dense floor). In the biopsy material the following was detected: necrosis of the mucosa with infiltration of the submucosal layer by lymphocytes, epithelioid cells, plasma cells, and single neutrophils. Notable is the presence of marked endovasculitis and perivasculitis. The described changes are characteristic of:

- A. Necrotizing ulcerative stomatitis
- B. Aphthous stomatitis
- C. Ulcerative stomatitis
- D. Primary syphilis
- E. Pharyngeal diphtheria

69. A 16-year-old young man complains of itching between the fingers and on his abdomen that intensifies at night. Examination detects thin gray streaks and fine rash on his skin. What is the most likely causative agent of this disease?

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

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

- A. Mebendazole
- B. Furazolidone
- C. Tetracycline
- D. Levomycetin (Chloramphenicol)
- E. Nystatin

71. In a woman with bronchial asthma, a viral infection provoked a fatal status asthmaticus. Pulmonary histology shows a spasm and an edema of bronchioles. A marked infiltration with lymphocytes, eosinophils, and other leukocytes, as well as degranulation of mast cells, can be observed in their walls. What mechanism of hypersensitivity underlies the described changes?

- A. Inflammatory mechanism
- B. Immune-mediated cytotoxicity
- C. Autoimmune mechanism
- D. Reaginic hypersensitivity reaction
- E. Immune complex mechanism

72. A 28-year-old woman was admitted to the gynecological department with complaints of abdominal pain. An ovarian tumor was clinically detected. Its surgical removal is indicated. During such surgery, it is necessary to cut the ligament connecting the ovary with the uterus. What ligament must the surgeon cut in this case?

- A. Lig. Suspensorium ovarii
- B. Lig. Cardinali
- C. Lig. Latum uteri
- D. Lig. Umbilicale laterale
- E. Lig. Ovarii proprium

73. A man with suspected typhoid fever was admitted to the infectious diseases hospital on the 3rd day of illness. What microbiological method should be used for

diagnostics in this case?

- A. Method of isolation of a bile culture
- B. Method of isolation of a blood culture
- C. Method of isolation of the causative agent from the cerebrospinal fluid
- D. Method of isolation of a stool culture
- E. Method of isolation of a urine culture

74. Against the background of an allergic reaction, a child has developed laryngeal edema. What type of respiratory failure developed in this case?

- A. Restrictive type
- B. Perfusion failure
- C. Obstructive type
- D. Dysregulatory type
- E. Diffusion failure

75. A man was admitted to the surgical department with a diagnosis of acute pancreatitis. Conservative treatment was started. What medicine is pathogenetically justified in this case?

- A. Fibrinolysin
- B. Contrykal (Aprotinin)
- C. Trypsin
- D. Pancreatin
- E. Chymotrypsin

76. A man was admitted to the trauma department with an injury on the anterior surface of his left thigh in its lower third. Examination shows a wound 1.5x3 cm in size, located transversely to the thigh, 2 cm above the patella. In the wound, the damaged tendon is well defined. Leg extension is limited in the patient. What muscle is most likely to be functionally impaired?

- A. *M. extensor digitorum longus*
- B. *M. triceps surae*
- C. *M. peroneus longus*
- D. *M. quadriceps femoris*
- E. *M. tibialis anterior*

77. A 28-year-old woman came to a polyclinic with complaints of a headache. The doctor offered her paracetamol, taking into consideration that the woman has a somatic disease. Presence of what concomitant disease affected the prescription specifically paracetamol?

- A. Rheumatoid arthritis
- B. Peptic ulcer disease of the stomach
- C. Nephritis
- D. Atherosclerosis
- E. Cholecystitis

78. With age, a person develops presbyopia (farsightedness). Why does it happen?

- A. Clouding of the lens
- B. Elongation of the eyeball
- C. Shortening of the eyeball
- D. Retinal atrophy
- E. Decreased elasticity of the lens

79. A patient with diabetes mellitus developed a diabetic coma because of an acid-base imbalance. What type of imbalance occurred in this case?

- A. Nongaseous alkalosis
- B. Metabolic acidosis
- C. Metabolic alkalosis
- D. Mixed alkalosis
- E. Respiratory acidosis

80. A man has tissue ischemia below the knee joint, accompanied by intermittent claudication. What artery is likely to be occluded in this case?

- A. Proximal femoral artery
- B. Deep femoral artery
- C. Popliteal artery
- D. Dorsalis pedis artery
- E. Descending genicular artery

81. An electron micrograph of the red bone marrow shows a megakaryocyte. Its peripheral part of the cytoplasm permeated by demarcation channels. What is the role of these structures?

- A. Cell destruction
- B. Platelet separation
- C. Cell division
- D. Increase of the cell surface area
- E. Increase of the number of ion channels

82. Bacteria entered the alveolar space of an acinus. Here they interacted with the surfactant, leading to activation of the cells localized in the alveolar walls and on the alveolar surface. Name these cells:

- A. Alveolar macrophages
- B. Clara's cells (club cells)
- C. Type I alveolocytes
- D. Type II alveolocytes
- E. Endothelial cells

83. A man presents with convergent strabismus. What muscle of the eyeball is damaged in this case?

- A. *Musculus rectus oculi lateralis*
- B. *Musculus rectus oculi medialis*
- C. *Musculus rectus oculi inferior*
- D. *Musculus rectus oculi superior*
- E. *Musculus obliquus oculi superior*

84. Laboratory tests of a 54-year-old man show that his inulin clearance is 120

mL/min., which means that the following process occurs normally in this man:

- A. Renal plasma flow
- B. Glomerular filtration rate
- C. **Tubular reabsorption**
- D. Renal blood flow
- E. Tubular secretion

85. A smear prepared from the material obtained from a patient with suspected diphtheria contains yellow bacilli with blue grains at their ends. What staining was used in this case?

- A. Romanowsky
- B. Kozlovsky
- C. **Ziehl-Nielsen**
- D. Loeffler
- E. Neisser

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

- A. Formation of paired compounds
- B. Urea synthesis
- C. **Glutamine synthesis**
- D. Transamination
- E. Ammonium salts synthesis

87. A test animal receives electrical impulses that irritate the sympathetic nerve that innervates blood vessels of the skin. What reaction will it cause in the blood vessels?

- A. **Arterial and venous constriction**
- B. Arterial dilation
- C. Arterial and venous dilation
- D. No reaction
- E. Venous dilation

88. After a hypertensive crisis, a man has lost voluntary movements in his right arm and leg. The muscle tone in these limbs is increased. What type of disorder of the nervous system's motor function is observed in this case?

- A. Reflex paresis
- B. Central paresis
- C. Peripheral paralysis
- D. **Central paralysis**
- E. Peripheral paresis

89. In the lungs, an enzyme breaks down carbonic acid (H_2CO_3) into water and carbon dioxide that is released with the air. What enzyme catalyzes this reaction?

- A. Cytochrome oxidase
- B. **Carbonic anhydrase**
- C. Catalase
- D. Peroxidase
- E. Cytochrome

90. Due to an uncontrolled intake of a vitamin supplement, a child developed anorexia, nausea, vomiting, diarrhea, hyperthermia, hemorrhages on the skin and mucosa, as well as the signs of meningism. What supplement was the child taking?

- A. Tocopherol acetate
- B. **Retinol acetate**
- C. Nicotinamide
- D. Thiamine
- E. Cyanocobalamin

91. A 32-year-old woman was stung by a wasp. The site of the sting is edematous and hyperemic. What is the primary mechanism of edema formation in this case?

- A. Increased blood hydrostatic pressure in the capillaries
- B. Problematic lymphatic efflux
- C. Increased interstitial fluid oncotic pressure
- D. Decreased blood oncotic pressure
- E. **Increased capillary permeability**

92. A person has a wound in the abdomen in the right. What part of the colon is most likely to be damaged?

- A. Transverse colon
- B. Descending colon
- C. Sigmoid colon
- D. Rectum
- E. **Ascending colon**

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

- A. **Hyaluronic acid**
- B. Hyaluronidase
- C. Elastin
- D. Fibronectin
- E. Collagen

94. A 16-year-old girl has no hair on the pubis and in the armpits, her mammary glands are underdeveloped. She has no menstruations. What hormone imbalance can these symptoms be the indicative of?

- A. Adrenal medulla hyperfunction
- B. Hyperthyroidism
- C. Hypothyroidism
- D. Ovarian failure
- E. Adrenal zona reticularis hyperfunction

95. A 3-year-old child has been brought by an ambulance to the intensive care unit of the infectious diseases hospital. On examination the child is in severe condition, skin and mucosa are dry, tissue turgor is reduced. The patient's history states that profuse diarrhea and recurrent vomiting were observed throughout the previous day after the child had eaten food products of poor quality. What type of salt and water imbalance is likely to have developed in the patient?

- A. Hyperosmolar hyperhydration
- B. Isoosmolar dehydration
- C. Hypoosmolar dehydration
- D. Isoosmolar hyperhydration
- E. Hypoosmolar hyperhydration

96. A man has facial asymmetry that becomes especially noticeable when he is trying to actively contract his facial muscles. What nerve is functionally impaired in this case?

- A. Trigeminal nerve, branch I
- B. Trigeminal nerve, branch II
- C. All branches of the trigeminal nerve
- D. Facial nerve (motor branches)
- E. Trigeminal nerve, branch III

97. Autopsy of the body of a person, who died after an abdominal surgery, revealed numerous thrombi in the veins of the lesser pelvis. Clinically, thromboembolism syndrome was registered. Where should the pathologist search for thromboembolus?

- A. Pulmonary arteries
- B. Brain
- C. Portal vein
- D. Lower limb veins
- E. Left ventricle of the heart

98. One of the parts of the central nervous system has a layered arrangement of neurons, among which there are stellate, spindle-shaped, horizontal, and pyramidal cells. This structure corresponds with the following part of the nervous system:

- A. Hypothalamus
- B. Medulla oblongata
- C. Cerebral cortex
- D. Spinal cord
- E. Cerebellum

99. A lab rat has subcutaneously received

mercury(II) chloride in the amount of 5 mg/kg. 24 hours later the plasma creatinine concentration increased several times. What mechanism of retention azotemia is observed in this case?

- A. Increased creatinine production in the renal tubules
- B. Decreased glomerular filtration
- C. Increased glomerular filtration
- D. Increased creatinine reabsorption
- E. Increased creatinine production in the muscles

100. Autopsy of the body of a 40-year-old patient detected groups of enlarged follicles in the small intestine. Their surface has ridges and fissures arranged in a pattern that resembles gyri and sulci of the brain. The follicles protrude above the surface of the intestinal mucosa. On section they are gray-red and juicy. Microscopy shows proliferation of monocytes, histiocytes, and reticular cells, there are macrophage clusters that form granulomas, while lymphocytes are depleted. What disease can be characterized by these changes?

- A. Dysentery
- B. Salmonellosis
- C. Cholera
- D. Typhoid fever
- E. Amebiasis

101. A patient has been taking bisacodyl for a long time to treat chronic constipation. However, several weeks later the aperient effect of the drug diminished. What is the possible cause of this?

- A. Drug dependence
- B. Functional cumulation
- C. Acquired tolerance
- D. Material cumulation
- E. Sensitization

102. The Wasserman reaction is markedly positive (++++), in a 30-year-old man. What infectious disease is diagnosed using the Wasserman reaction?

- A. Syphilis
- B. Brucellosis
- C. Tuberculosis
- D. Poliomyelitis
- E. Influenza

103. A 43-year-old man came to a neurologist with complaints of shortness of breath, chest pain, hiccups, and problematic cough movements. What nerves are affected in this case?

- A. Vagus nerves
 B. Intercostal nerves
 C. Parasympathetic nerves
 D. **Phrenic nerves**
 E. Sympathetic trunks
104. The dorsal root of the spinal nerve of a test animal was severed. What changes will occur in the innervation area?
- A. Loss of motor function
 B. Increased muscle tone
 C. Decreased muscle tone
 D. **Loss of sensitivity**
 E. Loss of sensitivity and motor function
105. A patient with an injury of the greater psoas muscle was delivered to the traumatology center. The patient has lost the ability to extend the lower leg at the knee joint. What nerve is damaged?
- A. **Femoral nerve**
 B. Genitofemoral nerve
 C. Obturator nerve
 D. Ilioinguinal nerve
 E. Iliohypogastric nerve
106. Histology of the thyroid gland that was removed in the course of a surgery reveals destruction and atrophy of the follicles and a diffuse lymphocytic infiltration with formation of lymphoid follicles in the stroma. This type of thyroiditis belongs to the following group of diseases:
- A. Infectious-allergic
 B. Viral
 C. **Autoimmune**
 D. Caused by physical factors
 E. Bacterial
107. A patient was hospitalized in a comatose state. The patient has a 5-year-long history of diabetes mellitus type 2. Objectively respiration is noisy, deep. Blood glucose is 15.2 mmol/L, ketone bodies – 100 micromol/L. These signs are characteristic of the following diabetes complication:
- A. Hepatic coma
 B. Hypoglycemic coma
 C. Lactate acidotic coma
 D. **Ketoacidotic coma**
 E. Hyperosmolar coma
108. After 10 days of antibiotic treatment, the patient developed signs of dysbiosis: dyspeptic phenomena, candidomycosis, jaundice, and photosensitization. It means that the patient was taking an antibiotic of the following group:
- A. Aminoglycoside group
 B. **Tetracycline group**
 C. Cephalosporin group
 D. Rifampicin group
 E. Penicillin group
109. Clinical and biochemical examination of a patient revealed sickle cell anemia. Measurement of what blood component was decisive for the diagnosis in this case?
- A. Hemoglobin A1
 B. Hemoglobin C
 C. Hemoglobin F
 D. **Hemoglobin S**
 E. Methemoglobin
110. A patient for a long time was on an imbalanced diet low in proteins, which resulted in hepatic fatty infiltration. This condition is likely to develop if a certain substance is absent in a person's diet. Name this substance:
- A. **Methionine**
 B. Biotin
 C. Acetic acid
 D. Alanine
 E. Cholesterol
111. Mitochondrial respiratory chain contains complex cytochrome proteins. What type of reactions do they catalyze?
- A. Reactions of transamination
 B. Reactions of decarboxylation
 C. Reactions of deamination
 D. Reactions of hydration
 E. **Redox reactions**
112. Analysis of a clear lemon-yellow liquid obtained from a patient via abdominal tap shows the following: relative density – 1012, albumin – 1%, globulins – 0.2%, no fibrinogen, leukocytes – 1–3 in the vision field. The liquid is sterile; it did not curdle after an hour. Which of the listed phenomena is associated with such findings?
- A. **Ascites caused by blood stagnation in the portal system**
 B. Peritonitis
 C. Peritoneal inflammation
 D. Edematous form of hemolytic disease of the newborn
 E. Peritoneal empyema
113. On examination a woman presents with a swelling, distended veins, and node formation on the medial surface of her thigh. It is a pathology of the following vein:

- A. *V. poplitea*
- B. *V. femoralis*
- C. *V. saphena magna*
- D. *V. saphena parva*
- E. *V. iliaca externa*

114. A man is being treated for chronic pneumonia for a long time. Microscopy of sputum smears stained using the Ziehl-Nielsen method reveals red bacilli 0.25x4 microns in size, located separately or sometimes in small clusters. What disease can be suspected?

- A. Pneumococcal pneumonia
- B. Pulmonary candidiasis
- C. Influenza pneumonia
- D. **Pulmonary tuberculosis**
- E. Pulmonary actinomycosis

115. A child was diagnosed with helminths. What changes in the peripheral blood will be observed with this pathology?

- A. Basophilia
- B. Leukocytosis
- C. **Eosinophilia**
- D. Monocytosis
- E. Neutrophilia

116. A 45-year-old woman presents with breast cancer. Metastases the most likely will spread in this case to the following regional lymph nodes:

- A. Inguinal, cervical
- B. Aortic, mediastinal
- C. Parasternal, mediastinal
- D. Cervical, parasternal
- E. **Axillary, parasternal**

117. A histological preparation demonstrates a gland. In its lobules there are acini with secretory cells that have two zones. Their basal zone is homogeneous basophilic, while the apical one is zymogenic oxyphilic. What organ has these key morphological features?

- A. Liver
- B. Parotid salivary gland
- C. Sublingual salivary gland
- D. **Pancreas**
- E. Submandibular salivary gland

118. A person has died of an acute infectious disease accompanied by fever, jaundice, hemorrhagic rash on the skin and mucosa, as well as acute renal failure. Histology of the renal tissues (Romanowsky-Giemsa stain) shows curved bacteria that resemble letters C and S. What bacteria were found?

- A. Treponema
- B. Borrelia
- C. Campylobacter
- D. **Leptospira**
- E. Spirilla

119. After a long course of treatment of sluggish schizophrenia, a man developed signs of parkinsonism. Which of the following drugs could have caused this complication?

- A. Haloperidol
- B. Lithium carbonate
- C. **Aminazine (Chlorpromazine)**
- D. Sibazon (Diazepam)
- E. Piracetam

120. A 25-year-old man complains of general weakness, chills, and sore throat. Objectively, his tonsillar region is red. His body temperature is 38.6°C. What cells are the main source of endogenous pyrogens that cause the fever in the patient?

- A. Basophils
- B. Mast cells
- C. B-lymphocytes
- D. Eosinophils
- E. **Neutrophils**

121. A man had a trauma and subsequent hemorrhagic bursitis of the left knee joint. When he was examined 3 months later, he had a limited range of motion in this joint because of scar formation. What component of inflammation is the basis for the development of this complication?

- A. Primary alteration
- B. **Proliferation**
- C. Exudation
- D. Disturbed microcirculation
- E. Secondary alteration

122. It has been established that from the same amount of glucose a tumor tissue receives 20–25 times less energy than a healthy cell. This phenomenon indicates the following change in the tumor glucose metabolism:

- A. Intensified oxidative processes
- B. Normal ratio of the processes
- C. **Intensified anaerobic glycolysis**
- D. Intensified tissue respiration
- E. Decreased anaerobic respiration

123. The first-aid center has received a victim of a traffic accident diagnosed with a closed displaced fracture of the middle third of the thigh. For repositioning of bone fragments the patient received 10 mL of 2% dithylinum solution intravenously, which resulted in a prolonged period

of apnoea and muscle relaxation. What enzyme is deficient, resulting in such pharmacogenetic enzymopathy?

- A. Cholinesterase
- B. N-acetyltransferase
- C. Pseudocholinesterase
- D. Methemoglobin reductase
- E. Glucose 6-phosphate dehydrogenase

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

- A. Lateral nuclei of the hypothalamus
- B. Corpora quadrigemina in the midbrain
- C. Cerebellum
- D. Cerebral cortex
- E. Specific nuclei of the thalamus

125. Divers risk developing decompression sickness, when ascending quickly from the depth to the surface, which can result in fatal gas embolism. What gas is released in this case?

- A. NO_2
- B. CO
- C. CO_2
- D. N_2
- E. O_2

126. As a result of the injury, the spinal cord of a person was damaged with a complete its rupture at the level of the first cervical vertebra. How will the breathing of the patient change?

- A. Breathing will remain unchanged
- B. Respiratory rate will decrease
- C. Respiratory rate will increase
- D. Breathing will stop
- E. Breathing depth will increase

127. A patient has a trauma of the knee joint with crushed patella. With such injury, it is likely that the tendon of a certain thigh muscle is damaged. Name this muscle:

- A. Sartorius muscle
- B. Biceps muscle of the thigh
- C. Adductor magnus muscle
- D. Quadriceps muscle of the thigh
- E. Adductor longus muscle

128. You work with the following specimens: 1) brucellosis topical vaccine; 2) leptospirosis vaccine; 3) BCG vaccine; 4) adsorbed diphtheria-tetanus pertussis vaccine (DTP vaccine); 5) tetanus toxoid adsorbed. What kind of immunity do they produce?

- A. Antitoxic immunity
- B. Artificial passive immunity
- C. Non-sterilizing (infectious) immunity
- D. Artificial active immunity
- E. Antibacterial immunity

129. The dangerous moments in the pathogenesis of myocardial necrosis is the further expansion of the zones of necrosis, dystrophy, and ischemia. An important role in this process belongs to the increased oxygen consumption by the myocardium. What substances contribute to this process?

- A. Chlorine ions
- B. Acetylcholine
- C. Cholesterol
- D. Adenosine
- E. Catecholamines

130. Patients with ischemic heart disease are usually prescribed small doses of aspirin. This drug inhibits synthesis of platelet aggregation activator, thromboxane A₂. What substance is this activator synthesized from?

- A. Malonic acid
- B. Arachidonic acid
- C. Acetic acid
- D. Homogentisic acid
- E. Glutamic acid

131. After eating fatty foods, the patient develops nausea, heartburn, and steatorrhea. What is the likely cause of this condition?

- A. Amylase deficiency
- B. Disturbed phospholipase synthesis
- C. Increased lipase production
- D. Bile acid deficiency
- E. Disturbed trypsin synthesis

132. A man presents with noticeable progressive muscular dystrophy. What indicator of urinary nitrogen metabolism is characteristic of this condition?

- A. Urea
- B. Uric acid
- C. Creatine
- D. Ammonium salts
- E. Creatinine

133. A 25-year-old man came to a neurologist with complaints of a weakness in his legs and disturbed gait. The doctor diagnosed him with myasthenia gravis and prescribed him proserin injections. What is the mechanism of action of this medicine?

- A. Inhibitor of braking processes
- B. Direct-acting cholinomimetic
- C. **Acetylcholine synthesis activator**
- D. Anticholinesterase action
- E. Metabolic stimulant

134. A patient has elevated blood pressure due to increased vascular tone. To lower the blood pressure in this case it is necessary to prescribe the blockers of:

- A. Histamine H1 receptors
- B. **α -adrenoceptors**
- C. β -adrenoceptors
- D. Muscarinic acetylcholine receptors
- E. α - and β -adrenoceptors

135. It is known that hepatitis D virus belongs to defective viruses and can reproduce in the host cells only in the presence of virus of:

- A. Hepatitis G
- B. Hepatitis E
- C. **Hepatitis B**
- D. Hepatitis C
- E. Hepatitis A

136. People, who live in mountainous areas, have an increased erythrocyte count in blood, which may be caused by an increase in production of the following in the kidneys:

- A. Prostaglandins
- B. Vitamin D₃
- C. **Erythropoietin**
- D. Renin
- E. Urokinase

137. A 30-year-old man with bacteriologically confirmed dysentery developed signs of paraproctitis. What stage of local changes is the most likely observed in this patient?

- A. Nonspecific ulcerative colitis
- B. Catarrhal colitis
- C. Follicular colitis
- D. Fibrinous colitis
- E. **Ulcer formation**

138. An infant presents with colored sclerae and mucous membranes. The infant's urine becomes dark when exposed to air. Homogentisic acid was detected in blood and urine. What disease is likely to be the cause of the infant's condition?

- A. Histidinemia
- B. Galactosemia
- C. **Alcaptonuria**
- D. Albinism
- E. Cystinuria

139. Chest X-ray of a newborn child

with convulsive syndrome and a defect of the interventricular septum revealed thymus hypoplasia. What type of immunodeficiency can be suspected in the child?

- A. Good syndrome
- B. **DiGeorge syndrome**
- C. Wiskott-Aldrich syndrome
- D. Bruton syndrome
- E. Louis-Bar syndrome (ataxia-telangiectasia)

140. A 23-year-old woman came to the emergency department complaining of bloody diarrhea, fatigue and confusion. A few days earlier, she went to a fast food restaurant for a birthday party. Her friends are experiencing similar symptoms. Laboratory studies show anemia. Which of the following would you most likely obtain for microbiologic testing?

- A. **Stool**
- B. Blood
- C. Cerebrospinal fluid
- D. Bile
- E. Urine

141. A 54-year-old man was diagnosed with macrofocal myocardial infarction of the left ventricle anterior wall. In which artery is the blood flow impaired in this case?

- A. Posterior interventricular branch of the right coronary artery
- B. **Anterior interventricular branch of the right coronary artery**
- C. Right coronary artery
- D. Circumflex branch of the left coronary artery
- E. Atrial branches of the left coronary artery

142. A couple gave birth to a son with hemophilia. The parents themselves are healthy, but the maternal grandfather has hemophilia. Determine the type of inheritance of this trait:

- A. Autosomal recessive
- B. **Sex-linked recessive**
- C. Autosomal dominant
- D. Y-linked
- E. Sex-linked dominant

143. A woman came to a genetic consultancy, concerned about the risk of giving birth to a son with hemophilia. Her husband has been suffering from this disorder since birth. The woman is healthy and there were no people with hemophilia among her ancestors. Determine the likelihood of a boy with hemophilia being

born in this family:

- A. Equals 25%
- B. Equals 100%
- C. Equals 75%
- D. Equals 0%**
- E. Equals 50%

144. Microscopy of a lung tissue shows an inflamed area that consists of a necrotic focus surrounded by regular rows of epithelioid and lymphoid cells. There are plasma cells, macrophages, and Pirogov-Langhans giant multinucleated cells. Specify the type of such inflammation.

- A. Tuberculous inflammation**
- B. Exudative inflammation
- C. Leprosy inflammation
- D. Alterative inflammation
- E. Typical productive inflammation

145. When examining a child, the pediatrician noted that the child presents with delayed physical and mental development. Urinalysis showed an acute increase in the levels of a keto acid that produces a qualitative color reaction with ferric chloride. What metabolic disturbance was detected in this case?

- A. Tyrosinemia
- B. Phenylketonuria**
- C. Albinism
- D. Alkaptonuria
- E. Cystinuria

146. Anaprilin (propranolol) therapy had a positive effect on the disease course in a 44-year-old woman with angina pectoris. What is the mechanism of action of this drug?

- A. Reduction of oxidative metabolism in the myocardium due to blockade of the Krebs cycle enzymes
- B. Decreased myocardial oxygen demand and increased oxygen supply to the myocardium
- C. Beta-adrenergic receptor block and a decrease in myocardial oxygen demand**
- D. Increased oxygen supply to the myocardium
- E. Reduction of myocardial energy consumption due to reduced load

147. During an abdominal surgery, a reflex cardiac arrest has occurred. Where is this reflex center located?

- A. In midbrain
- B. In cerebral cortex
- C. In diencephalon
- D. In spinal cord
- E. In medulla oblongata**

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

- A. Direct (conjugated) bilirubin
- B. Free amino acids
- C. Urea
- D. Indirect (unconjugated) bilirubin**
- E. Uric acid

149. The process of tissue respiration is accompanied by oxydation of organic compounds and synthesis of macroergic molecules. In what organelles does this process occur?

- A. Ribosomes
- B. Golgi apparatus
- C. Peroxisomes
- D. Mitochondria**
- E. Lysosomes

150. A 16-year-old boy from the rural area entered the technical school. During a regular Mantoux test, it turned out that this boy had a negative reaction. What tactics should the doctor choose as the most rational in this case?

- A. BCG vaccination**
- B. Express diagnostics of tuberculosis using the Price method
- C. Urgent isolation of the boy from his groupmates
- D. Repeat the test in a month
- E. Serodiagnosis of tuberculosis