



STATE ORGANIZATION
«TESTING BOARD FOR PROFESSIONAL COMPETENCE ASSESSMENT OF
HIGHER EDUCATION TRAINEES IN MEDICINE AND PHARMACY AT THE
MINISTRY OF HEALTH OF UKRAINE»

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Variant 03

TEST ITEMS
FOR THE UNIFIED STATE QUALIFICATION EXAM
TEST COMPONENT
STAGE 1

MEDICINE

KROK 1

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1. When examining a biopsy material obtained from the thyroid gland, the pathologist discovered lymphocyte infiltration of the thyroid tissues and destruction of the parenchymal elements. Diffuse lymphocyte infiltration with lymphoid follicles was detected in the stroma. What is the most likely diagnosis?

- A. Graves' disease (toxic diffuse goiter)
- B. Solid adenoma of the thyroid
- C. Papillary thyroid cancer
- D. Hashimoto's thyroiditis (chronic lymphocytic thyroiditis)
- E. Undifferentiated thyroid carcinoma

2. In an experiment on an isolated squid giant axon submerged in a salt solution, the extracellular potassium ions concentration was increased to the level of the intracellular potassium ions concentration. What changes in the membrane potential will occur in this case?

- A. Potential remains unchanged
- B. Potential first decreases and then increases
- C. Potential increases
- D. Potential decreases
- E. Potential disappears

3. The initiation of transcription process becomes possible when an enzyme DNA-dependent RNA polymerase attaches to a certain segment of DNA molecule. Name this DNA segment:

- A. Terminator
- B. Promoter
- C. Regulator
- D. Repressor
- E. Suppressor

4. Patients with B₁₂-deficiency anemia develop degenerative processes in the posterior and lateral columns of the spinal cord (funicular myelosis). In this case, the damage to the axons is caused by the disturbed formation of:

- A. Myelin
- B. Noradrenaline
- C. Acetylcholine
- D. Dopamine
- E. Serotonin

5. In an experiment, electrical stimulation of neurons in the brain of a test animal resulted in hypophagia (refusal to eat). Electrodes were applied to the following area of the brain in this case:

- A. Neurohypophysis
- B. Red nucleus
- C. Adenohypophysis
- D. Hypothalamus
- E. Thalamus

6. A person has been bitten by a snake, which led to asphyxia and hemoglobin in urine. Erythrocyte hemolysis occurs in blood. Toxic snake venom causes:

- A. Alkalosis development
- B. Acidosis
- C. Lysolecithin formation
- D. Polyuria
- E. Triglyceride formation

7. A man with acute rhinitis has dry and hyperemic nasal mucosa. What cells of superficial mucosal epithelium normally provide its moisturizing?

- A. Goblet cells
- B. Brush cells
- C. Endocrine cells
- D. Short basal cells
- E. Tall and short basal cells

8. A urology department has received a 48-year-old man with signs of renal colic. What medicine will be the most advisable in his condition?

- A. Promedol (Trimeperidine)
- B. Analgin (Metamizole)
- C. Atropine
- D. Morphine
- E. Fentanyl

9. A man with heart failure presents with enlarged liver, leg edema, and ascites. What is the leading mechanism of edema formation in this case?

- A. Membranogenic
- B. —
- C. Hydrodynamic
- D. Colloidal osmotic
- E. Lymphogenic

10. When a dentist applied hydrogen peroxide to the patient's oral mucosa, it started frothing excessively. What enzyme breaks down hydrogen peroxide?

- A. Methemoglobin reductase
- B. Catalase
- C. Acetyltransferase
- D. Glucose-6-phosphate dehydrogenase
- E. Cholinesterase

11. During a surgery with application of inhalation narcosis and muscle relaxants, the anesthesiologist noticed rapid increase

of the patient's body temperature to 43°C. What pathology developed in this patient?

- A. Hyperthermic syndrome
- B. Infection-induced fever
- C. Physical hyperthermia
- D. Overheating
- E. Traumatic shock

12. Examination shows that total leukocyte count in the patient's blood is $11 \cdot 10^9/L$, with 80% neutrophils, among which 9% are band neutrophils. Characterize the changes in the cell composition of «white» blood in this case:

- A. Nuclear right shift of neutrophils
- B. Nuclear left shift of neutrophils
- C. Lymphocytosis
- D. Neutropenia
- E. Leukopenia

13. A man presents with decreased vasopressin synthesis, which causes polyuria and results in marked dehydration. What is the most likely polyuria mechanism in this case?

- A. Decreased tubular reabsorption of protein
- B. Decreased tubular reabsorption of water
- C. Increased hydrostatic pressure
- D. Disturbed glucose reabsorption
- E. Disturbed tubular reabsorption of Na ions

14. After a myocardial infarction, the morphological intactness of the wall was restored in the patient. In this case, regeneration occurred because of the following tissue:

- A. Epithelial tissue
- B. Cross-striated muscle tissue
- C. Smooth muscle tissue
- D. Connective tissue
- E. Nervous tissue

15. According to the Schade's physicochemical theory, hyperosmia, hyperonchia, and acidosis can be observed in the area of inflammation. The development of hyperosmia is, to an extent, associated with the increasing concentration of K^+ in the inflamed area. What causes the hyperkalemia of the inflammatory exudate?

- A. Excess of Ca^{++} ions
- B. Intensive destruction of damaged cells
- C. Inhibition of glycogenolysis in the area of inflammation
- D. Activation of proliferative processes
- E. Increased permeability of the vascular wall

16. Wernicke-Korsakoff syndrome often develops in chronic alcoholics, who have a low-vitamin diet. Decreased transketolase activity can be observed in the course of this disease. What vitamin deficiency causes this development?

- A. Riboflavin
- B. Thiamine —
- C. Retinol
- D. Cobalamin
- E. Niacin

17. A patient complains of acute increase in diuresis (up to 5–7 liters of urine per 24 hours). Examination revealed decreased secretion of vasopressin in this patient. What cells have insufficient secretory activity in this case?

- A. Neurosecretory cells of the hypothalamus
- B. Endocrinocytes of the anterior pituitary
- C. Endocrinocytes of the intermediate pituitary
- D. Pituicytes
- E. Pars tuberalis cells

18. To study hypoxia, a test animal was given a potassium cyanide solution. What type of oxygen starvation develops in this case?

- A. Tissue —
- B. Respiratory
- C. Hypoxic
- D. Circulatory
- E. Hemic

19. In typhoid fever, the necrotized Peyer's patches in the small intestine color yellow-brown. What pigment permeates the necrotized tissue?

- A. Lipofuscin
- B. Indole
- C. Hemoglobin
- D. Melanin —
- E. Bilirubin

20. A mutation has occurred in a cell in the first exon of the structural gene. The number of nucleotide pairs changed from 290 to 250. Name this type of mutation:

- A. Translocation
- B. Nullisomy
- C. Inversion
- D. Deletion
- E. Duplication

21. Synovial fluid is known to reduce the friction between articular surfaces. In rheumatism or arthritis, its viscosity decreases because of depolymerization (destruction) of the following substance:

- A. Hyaluronic acid
- B. Albumin
- C. Heparin
- D. Glycogen
- E. Collagen

22. In von Gierke disease, glycogen accumulation can be observed in liver and kidneys. This disease is caused by deficiency of the following enzyme:

- A. Phosphoglucomutase
- B. Glucokinase
- C. Glycogen phosphorylase
- D. Glucose-6-phosphatase
- E. Phosphorylase kinase

23. A patient with streptococcal infection of the gingiva was prescribed a drug with β -lactam ring in its structure. What drug of those listed below belongs to this pharmacological group?

- A. Erythromycin
- B. Rifampicin
- C. Levomycetin (Chloramphenicol)
- D. Benzylpenicillin
- E. Streptomycin sulfate

24. A man complains of itching skin between the fingers of his right hand. He was diagnosed with scabies. Name the preventive measures against this disease:

- A. Preventive vaccinations
- B. Compliance with the rules of personal hygiene
- C. Insecticide treatment of premises
- D. Acaricides
- E. Protection against tick bites

25. A patient with suppurative bronchitis was hospitalized into the pulmonology department. As a part of complex therapy, he was prescribed a medicine that liquefies sputum and facilitates expectoration. Name this medicine:

- A. Valerian tincture
- B. Acetylcysteine
- C. Morphine hydrochloride
- D. Cholosas
- E. Prednisolone

26. Autopsy of the body of a woman revealed the following morphologic changes: stenosis of the atrioventricular opening, mitral insufficiency. Histologically there are focal cardiosclerosis and «blooming» Aschoff nodules in the myocardium. What is the most likely diagnosis?

- A. Scleroderma
- B. Dermatomyositis
- C. Systemic lupus erythematosus
- D. Rheumatism
- E. Polyarteritis nodosa

27. A patient was brought by an ambulance to the inpatient department. He was provisionally diagnosed with acute pancreatitis. To confirm this diagnosis, it is necessary to measure the activity of a certain enzyme in the patient's blood and urine. Name this enzyme:

- A. Choline esterase
- B. Alpha-amylase
- C. Aspartate transaminase
- D. Lactate dehydrogenase
- E. Alanine transaminase

28. A 45-year-old woman has an attack of ciliary arrhythmia. She suffers from stage II essential hypertension. What is the drug of choice for stopping this attack?

- A. Strophanthin
- B. Anaprilin (Propranolol)
- C. Lidocaine
- D. Potassium chloride
- E. Sustac forte (Nitroglycerin)

29. During analysis a medical laboratory scientist has additionally noted that the blood sample was obtained from a woman. What blood corpuscles have the structural characteristics that allow making such a conclusion?

- A. Lymphocytes
- B. Basophilic leukocytes
- C. Erythrocytes
- D. Neutrophilic leukocytes
- E. Monocytes

30. A patient with myocardial infarction in the acute phase has been hospitalized into the cardiology unit. To induce platelet lysis in the patient's coronary vessels, the

following enzyme should be used during the early hours of infarction:

- A. Lysozyme
- B. Trypsin
- C. Streptokinase ✓
- D. Lydase (Hyaluronidase)
- E. Chymotrypsin

31. A man has been hospitalized with a suspected prostate tumor. During the surgery it was found that the tumor has penetrated into the urinary bladder. What part of the bladder was affected?

- A. Body
- B. Cervix
- C. Trigone
- D. Fundus
- E. Apex -

32. Histone protein synthesis is artificially blocked in a cell. What cell structure will be damaged as a result?

- A. Golgi apparatus
- B. Nucleolus
- C. Nuclear chromatin -
- D. Nuclear membrane
- E. Cell membrane

33. A man had a case of epidemic typhus 5 years ago. After an acute respiratory viral disease, against the background of weakened immune system, he developed signs of typhus again. The exacerbation occurred because of the causative agents, remaining in his body. What type of infection is it?

- A. Co-infection ✓
- B. Secondary infection ✓
- C. Relapse
- D. Superinfection
- E. Reinfection -

34. An isolated cell of a human heart automatically generates excitation impulses at the rate of 60/min. This cell was obtained from the:

- A. Atria
- B. Ventricles
- C. Sinoatrial node ✓
- D. Atrioventricular node
- E. His bundle

35. A 3-year-old child after a past case of severe viral infection presents with recurrent vomiting, loss of consciousness, and seizures. Blood testing reveals hyperammonemia. What is the likely cause of such changes in the biochemical parameters of the child's blood?

- A. Disturbed ammonia neutralization in the Krebs cycle
- B. Activation of amino acid decarboxylation processes
- C. Increased putrefaction of proteins in the intestine
- D. Disturbed neutralization of biogenic amines
- E. Disturbed ammonia neutralization in the ornithine cycle

36. A 52-year-old woman came to the neurologist with complaints of loss of skin sensitivity on the right half of her face in the area of the lower eyelid, nasal arch, and upper lip. What branch of what nerve is damaged in this patient?

- A. Chorda tympani branching from the facial nerve
- B. Mandibular branch of the trigeminal nerve
- C. Maxillary branch of the trigeminal nerve
- D. Ophthalmic branch of the trigeminal nerve
- E. Greater petrosal nerve branching from the facial nerve

37. After examination, a man, who lived in the Ural region, was diagnosed with taiga encephalitis. The causative agent of this disease could have been transmitted to the patient via a bite of:

- A. *Stomoxys calcitrans*
- B. *Phlebotomus papatasi*
- C. *Ixodes ricinus* -
- D. *Ornithodoros papillipes*
- E. *Ixodes persulcatus*

38. X-ray has detected multiple foci of osteoporosis and osteolysis in the flat bones of a man. Trephine biopsy material contains high levels of neoplastic plasma cells. Make the diagnosis:

- A. Chronic myeloid leukemia
- B. Histiocytosis
- C. Multiple myeloma -
- D. Lymphogranulomatosis
- E. Acute monocytic leukemia

39. After a nephrectomy, a 40-year-old man has developed signs of anemia. Why did these signs appear?

- A. Folic acid deficiency
- B. Iron deficiency
- C. Decreased synthesis of erythropoietins
- D. Vitamin B₁₂ deficiency
- E. Intensified destruction of erythrocytes -

40. A person has increased pulmonary

ventilation because of physical exertion. What indicator of external respiration will be significantly increased compared to the resting state?

- A. Vital lung capacity
- B. Respiratory volume -
- C. Total lung capacity
- D. Inspiratory reserve volume
- E. Expiratory reserve volume

41. A man has undergone a surgery for the removal of one third of his large intestine that was involved in a pathological process. How will water absorption change in this case, if water intake of this man remains as usual?

- A. Slight increase
- B. -
- C. Significant decrease
- D. No significant changes -
- E. Significant increase

42. After a severe case of poliomyelitis, disturbed function of the central nervous system has caused weakening of the movements of all four limbs in the patient. What diagnostic term is used to describe this condition?

- A. Spastic paralysis
- B. Tetraplegia -
- C. Flaccid paralysis
- D. Peripheral paralysis
- E. Paresis

43. Tyrosine is used as a substrate in thyroxine synthesis. What chemical element takes part in this process?

- A. Copper
- B. Calcium
- C. Zinc
- D. Iodine -
- E. Iron

44. A man has a node in his thigh that is located within the thigh muscles. On section, the node is whitish, fibrous, without clear margins. Microscopy shows that the tumor consists of immature polymorphic fibroblast-like cells with numerous mitoses and collagen fibers. What tumor is it?

- A. Fibroma
- B. Fibromyoma
- C. Myosarcoma
- D. Fibrosarcoma -
- E. Rhabdomyosarcoma

45. Before prescribing a protein parenteral nutrition to an emaciated patient, the

doctor has referred the patient for serum protein electrophoresis. This technique is based on the following physicochemical properties of proteins:

- A. Inability to denature
- B. Viscosity
- C. Hydrophilicity and an ability to swell
- D. Optical activity
- E. Presence of a charge -

46. Oxygen supply of skeletal muscles during their intensive work is often problematic because of compressed vessels and disrupted blood flow. What supplies muscles with oxygen in this case?

- A. Hemoglobin
- B. Cytochrome
- C. Creatine phosphate -
- D. Myoglobin
- E. Calmodulin

47. In reperfusion syndrome, the processes of free radical oxidation activate, resulting in damage to cell membranes and disturbance of specific cell functions. These changes are associated with excessive accumulation of the following ions in the cytoplasm:

- A. Chlorine ions
- B. Potassium ions -
- C. Sodium ions
- D. Magnesium ions
- E. Calcium ions

48. A 1.5-year-old boy, who previously received no regular immunization, was in contact with a measles patient. For urgent specific prevention, the child was administered donor gamma globulin. What type of immunity develops in this case?

- A. Natural -
- B. Passive
- C. Antitoxic
- D. Local
- E. Post-vaccination

49. A man has received a hit to the area of the inferior angle of the scapula on the right, which resulted in rib fracture. What ribs were damaged in this case?

- A. VIII-IX
- B. X-XI
- C. VI-VII -
- D. XII
- E. I-III

50. During a surgery for spleen injury, the surgeon needs to isolate an artery that

supplies the spleen with blood. Which branch of the arterial vessel is it?

- A. *A. gastroduodenalis*
- B. *A. hepatica propria*
- C. *A. hepatica communis*
- D. *A. gastrica sinistra*
- E. *Truncus coeliacus* -

51. A woman with ischemic heart disease was prescribed amiodarone. This medicine has antianginal effect. What other effect does it have?

- A. Analgesic
- B. Antiarrhythmic ✓
- C. Anti-inflammatory
- D. Local anesthetic
- E. Antishock

52. What drug is used for treatment of malaria, amoebic dysentery, and autoimmune diseases?

- A. Streptomycin sulfate
- B. Co-trimoxazole (Biseptol)
- C. Chingamin (Chloroquine)
- D. Itraconazole
- E. Dexamethasone

53. A patient with essential hypertension was prescribed hydrochlorothiazide as a part of complex therapy. What mechanism of drug action facilitates a decrease in blood pressure in this case?

- A. Decreased excretion of sodium ions and water
- B. Carbonic anhydrase blockade
- C. Increased production of angiotensin II
- D. Increased excretion of sodium ions and water -
- E. Calcium channel blockade

54. A long-term taking of potassium preparations has caused hyperkalemia in the patient. This condition results in the following changes in secretion:

- A. Decreased vasopressin secretion
- B. Increased aldosterone secretion
- ✓ C. Increased vasopressin secretion
- D. Decreased aldosterone secretion
- E. Decreased renin secretion

55. A man complains of a burning pain in the area of his heart. Based on the analysis of his ECG, he has been diagnosed with infarction of the posterior wall of the left ventricle. What artery has damaged branches in this case?

- A. Left coronary artery
- B. Pericardial branches of the thoracic aorta
- C. Circumflex branch of left coronary artery
- D. Anterior interventricular branch of the left coronary artery
- E. Right coronary artery

56. A 40-year-old man has died of a pulmonary hemorrhage. In the upper lobe of the right lung, autopsy shows a cavity 4 cm in diameter with dense walls and uneven inner surface. The cavity contains blood clots. Microscopy detects disintegrating leukocytes in the inner layer of the cavity wall and proliferations of epithelioid, lymphoid, and giant multinucleated cells with horseshoe-shaped nuclei in the middle layer of the cavity wall. The observed changes in the lung are characteristic of a:

- A. Tuberculous cavity
- B. Pulmonary infarction with septic breakdown
- C. Congenital cyst
- D. Bronchiectatic cavity
- E. Lung abscess

57. An older man with parkinsonism was prescribed a certain drug. Several days later the man developed complaints of dry mouth and rapid heart rate. The prescribed drug is a:

- A. Adrenoblocker
- B. Dopamine receptor stimulator
- C. Cholinomimetic
- D. Cholinoblocker
- E. Adrenomimetic

58. Autopsy of the body revealed waxy degeneration of the rectus abdominis muscles. In the terminal segment of the small intestine there are ulcers 3-5 cm in diameter. The ulcer walls are covered in a crumbling gray-yellow substance. The ulcer edges are moderately raised above the mucosa. Widal test is positive. Make the diagnosis:

- A. Relapsing fever
- B. Crohn's disease
- C. Nonspecific ulcerative colitis
- D. Dysentery
- E. Typhoid fever ✓

59. Autopsy of the body of a 42-year-old man, who had chronic diffuse bronchitis and died of cardiopulmonary failure, shows large hyperinflated lungs that cover the mediastinum with their edges.

The lungs do not deflate, are pale gray, emit crackling sound when cut. Pressing a finger to the surface of the lungs leaves an indentation. Bronchial lumen produces mucopurulent exudate. Make the diagnosis:

- A. Chronic focal emphysema
- B. Primary idiopathic emphysema
- C. Vicarious compensatory emphysema
- D. Interstitial emphysema
- E. Chronic diffuse obstructive pulmonary emphysema

60. An older woman has type 2 diabetes mellitus accompanied by obesity, atherosclerosis, and ischemic heart disease. Basal-state hyperinsulinemia was detected in her condition. What treatment would be adequate for this woman?

- A. Insulin
- B. Lovastatin
- C. Amlodipine
- D. Retabolil (Nandrolone)
- E. Glibenclamide

61. A person has retained gustatory sensations, but overall sensitivity of the oral structures is lost, which indicates a damage to the:

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

62. Examination of a patient, who for a long time was taking glucocorticoids, detected lymphopenia. How can the functional state of the patient's immune system be characterized?

- A. Anaphylaxis
- B. Autoantigen tolerance
- C. Primary immunodeficiency
- D. Secondary immunodeficiency ✓
- E. Congenital immunodeficiency

63. A 17-year-old girl is undergoing an examination. She has signs of pharyngitis, lymphadenopathy of the neck, and fever and was provisionally diagnosed with infectious mononucleosis. What test can confirm this diagnosis at the onset of the disease?

- A. Microscopy of blood smear using Romanovsky-Giemsa method
- B. Measuring the IgG to Epstein-Barr virus
- C. Measuring the levels of C-reactive protein
- D. Measuring the antibodies (IgM) to Epstein-Barr virus
- E. Sabin-Feldman dye test

64. After a cerebral trauma a person has lost the eyesight. What areas of the cerebral cortex are likely to be damaged, causing this condition?

- A. Temporal
- B. Temporal and parietal
- C. Parietal
- D. Occipital -
- E. Frontal

65. A man has atrioventricular block of the I degree with a prolonged PQ interval of 0.25 seconds. What cardiac ability is disturbed in this case?

- A. Conductivity -
- B. Pacemaking -
- C. Contractility
- D. Excitability
- E. Automatism

66. Ventricular myocardium of the examined person exhibits disturbed repolarization processes. It causes disturbances in amplitude, configuration, and duration of the following wave:

- A. Q
- B. T ✓
- C. P
- D. S
- E. R

67. An 8-year-old child had an acute onset of the disease. The death occurred two days after the onset. On the basal surface of the brain, autopsy shows acutely plethoric soft meninges that are soaked through with thick and turbid yellow-green exudate. Brain tissues are edematous. Make the diagnosis:

- A. Diphtheria
- B. Measles -
- C. Scarlet fever
- D. Pertussis
- E. Meningococcal infection -

68. To determine the type of leukemia, the patient needs to undergo a bone marrow aspiration. What bone is usually punctured for this analysis?

- A. Sternum
- B. Diaphysis of the humerus
- C. The first cervical vertebra
- D. Diaphysis of the femur
- E. The head of the third rib

69. 1.5 weeks after a severe case of streptococcal tonsillitis, a 24-year-old man developed face edema and elevated blood pressure. He presents with hematuria and proteinuria of 1.2 g/L. In the blood, antistreptococcal antibodies and low levels of complement components are detected. In this case, nephropathy has been caused by immune complexes, accumulations of which can most likely be found in the microvasculature of:

- A. Henle loop
- B. Pyramids
- C. Descending tubules
- D. Glomeruli
- E. Proximal tubules

70. Microslide of an animal retina shows numerous phagosomes in the cells of its outer pigment layer. What function of pigment cells is the most evident in this case?

- A. Activating function
- B. Regenerative function
- C. Protective function
- D. Sensitivity
- E. Permeability

71. A man has acute pancreatitis. What medicines must be prescribed in this case, to prevent pancreatic autolysis?

- A. Chymotrypsin
- B. Protease activators
- C. Protease inhibitors
- D. Amylase
- E. Trypsin

72. Name the supramolecular multienzyme complex that is integrated into the lipid layer of inner mitochondrial membrane that creates conditions for redox reactions:

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

73. A 37-year old woman complains of severe pain in her left wrist and tingling sensation in her left thumb, index finger, middle finger, and a part of her ring finger. The pain started as an occasional

throb that she could ignore or relieve with ibuprofen, but now the pain is much worse and wakes her up at night. She works as a typist and the pain often increases after typing all day. Her right wrist and fingers are fine. Nerve conduction studies reveal nerve compression. Which of the following nerves is most likely compressed in this patient?

- A. Ulnar nerve
- B. Musculocutaneous nerve
- C. Median nerve
- D. Axillary nerve
- E. Radial nerve

74. A patient was hospitalized in a comatose state. The patient has a 5-year-long history of diabetes mellitus type 2. Objectively, his respiration is noisy, deep, with acetone breath odor. 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. Ketoacidotic coma
- C. Hypoglycemic coma
- D. Hyperglycemic coma
- E. Hyperosmolar coma

75. During mental stress, a hormone-sensitive enzyme triacylglycerol lipase activates in fatty tissues. What secondary messenger takes part in activation of this enzyme?

- A. Cyclic guanosine monophosphate
- B. Inositol triphosphate
- C. Ca^{2+}
- D. Diacylglycerol
- E. Cyclic adenosine monophosphate

76. A patient with clinical signs of a primary immunodeficiency has functionally disturbed mechanism of antigen-presentation to the immunocompetent cells. What cells are likely to have structural defects?

- A. Fibroblasts
- B. Macrophages, monocytes
- C. B-lymphocytes
- D. T-lymphocytes
- E. O-lymphocytes

77. The patient's arterial hypertension is caused by renal artery stenosis. The main pathogenetic link of this type of hypertension is the activation of the following system:

- A. Parasympathetic
- B. Sympathoadrenal
- C. Kallikrein-kinin
- D. Renin-angiotensin ✓
- E. Hypothalamic-pituitary

78. An 11-year-old girl is brought to the doctor's office by her mother, who states that her daughter felt weak and had swollen face for 3 days. According to the mother, her daughter had always been healthy and active until the onset of the symptoms. Physical examination reveals generalized swelling of the face and pitting edema of the lower limbs. Upon inquiry, the girl describes a foamy appearance of her urine, but denies blood in urine, nycturia, or pain during urination. Laboratory studies show proteinuria and microscopic hematuria. Which of the following is the most likely cause of the findings in the laboratory analysis of urine?

- A. Increased glomerular hydrostatic pressure
- B. Increased permeability across the glomerular capillary wall
- C. Increased hydrostatic pressure in the Bowman's capsule
- D. —
- E. Increased plasma oncotic pressure

79. A 14-year-old boy was diagnosed with Hutchinson's triad: barrel-shaped teeth, parenchymatous keratitis, and deafness. These signs are characteristic of:

- A. Tuberculosis ✗
- B. Toxoplasmosis ✗
- C. Leprosy —
- D. Opisthorchiasis
- E. Syphilis ✗

80. Albinos are vulnerable to sunlight — instead of developing a suntan, they develop burns. This phenomenon occurs because of disturbed metabolism of a certain amino acid. Name this amino acid:

- A. Phenylalanine ✓
- B. Tryptophan
- C. Methionine
- D. Histidine
- E. Glutamine

81. Autopsy of the body of a 40-year-old woman, who died of uremia, shows enlarged variegated kidneys. In the kidneys, the glomerular capillary membranes are thickened and resemble «wire loops»; there are foci of fibrinoid necrosis in their walls and hyaline thrombi

in their lumina. In the nuclei, there are hematoxylin bodies. In the heart, Libman-Sacks endocarditis is observed. What renal disorder is the most likely in this case?

- A. Cholera glomerulonephritis
- B. Sclerotic kidney
- C. Rheumatic glomerulonephritis
- D. Lupus nephritis —
- E. Terminal glomerulonephritis

82. After a thorough examination, a man, who has returned to Ukraine from the Central Asia, was provisionally diagnosed with spring-summer encephalitis. In such cases, the causative agent is transmitted via the bites of a certain arthropod. Name this arthropod:

- A. *Ixodes ricinus* ✓
- B. *Ixodes persulcatus*
- C. *Ornithodoros papillipes*
- D. *Sarcoptes scabiei*
- E. *Phlebotominae*

83. Lung pathologies stimulate adaptive changes in the human body to ensure better oxygen supply to the tissues. One of these adaptive changes is the increased synthesis of the following in the erythrocytes:

- A. Fructose-1,6-diphosphate
- B. 1,3-diphosphoglycerate
- C. Glucose-6-phosphate
- D. 3-phosphoglycerate
- E. 2,3-diphosphoglycerate —

84. Increased resistance to blood ejection from the left ventricle has activated the homeometric compensation mechanism in the patient. In what pathological process can this compensation mechanism develop in the left ventricle?

- A. Pulmonary embolism
- B. Mitral stenosis —
- C. Aortic valve insufficiency
- D. Aortic valve stenosis
- E. Arterial hypotension

85. Against the background of digitoxin treatment, a man has developed bigeminy, severe muscle weakness, diarrhea, vomiting, impaired vision. What medicines can mitigate the signs of poisoning in this case?

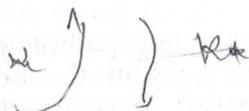
- A. Magnesium preparations
- B. Calcium preparations
- C. Sodium preparations
- D. Iron preparations
- E. Potassium preparations

86. Liver diseases usually are accompanied by a marked tendency to bleed. Why is it so?

- A. Decreased blood levels of potassium
- B. Disturbed pigment metabolism
- C. Decreased synthesis of bile acids
- D. Decreased synthesis of prothrombin and fibrinogen
- E. Increased breakdown of coagulation factors

87. Excitation processes in cardiomyocytes have been studied in an experiment. It was determined that during the phase of their rapid depolarization Na^+ ions can additionally move through the:

- A. Li^+ channels
- B. K^+ channels
- C. Mg^{++} channels
- D. Ca^{++} channels
- E. Cl^{-} channels



88. During patient examination, the doctor conducts auscultation to assess the functioning of the mitral valve. Where can the tones of this valve be auscultated?

- A. At the edge of the sternum on the right, opposite the cartilage of rib 5
- B. At the edge of the sternum, in the second intercostal space on the left
- C. At the edge of the sternum on the left, opposite the cartilage of rib 5
- D. At the edge of the sternum, in the second intercostal space on the right
- E. At the cardiac apex

89. Bacteriology testing is one of the methods for laboratory diagnostics of diphtheria. To grow the colonies of *C. diphtheriae*, it is necessary to know the proper conditions for causative agent cultivation. What nutrient media are optimal for *Corynebacterium diphtheriae* cultivation?

- A. Blood agar, tellurite blood agar
- B. Endo medium, Ploskirev medium
- C. Salt egg yolk agar
- D. Serum agar, ascitic agar
- E. Sugar meat peptone broth, sugar meat peptone agar

90. Mitochondrial destruction is observed in some hereditary diseases (for example,

Kearns-Sayre syndrome). What processes can be disturbed, as a result, in the cell?

- A. Amino acid synthesis
- B. Glycolysis
- C. Adenosine triphosphate synthesis
- D. Nuclear division
- E. Crossing over

91. When studying section material, the pathologist has noticed *folliculi lymphatici aggregati* (Peyer's patches) on the inner surface of an intestinal segment. This segment is a part of:

- A. *Colon ascendens*
- B. *Jejunum*
- C. *Colon descendens*
- D. *Duodenum*
- E. *Ileum*

92. A man presents with osteoporosis. There are hypercalcemia and hypophosphatemia in his blood. What is the cause of his condition?

- A. Inhibited parathyroid hormone secretion
- B. Increased thyroxine secretion
- C. Increased secretion of corticosteroids
- D. Increased secretion of parathyroid hormone
- E. Inhibited secretion of corticosteroids

93. A 45-year-old man complains of dizziness, unsteady gait, and disturbed coordination of movements. Examination shows that he has osteochondrosis of the cervical spine and the vessel that passes through the transverse foramina of the cervical vertebrae is compressed. What vessel is it?

- A. *A. vertebralis*
- B. *A. occipitalis*
- C. *A. carotis interna*
- D. *A. carotis externa*
- E. *A. subclavia*

94. A 60-year-old man, who has a long history of angina pectoris, was along with coronarolytics prescribed acetylsalicylic acid to decrease the platelet aggregation. What is the mechanism of antiaggregant action of acetylsalicylic acid?

- A. Reduces phosphodiesterase activity
- B. Increases platelet adenylate cyclase activity
- C. Reduces cyclooxygenase activity
- D. Has a membrane-stabilizing effect
- E. Increases prostacyclin synthesis

95. During a fall, a small child has received

a trauma of the anterior fontanelle. What type of cranial bone junction was pathologically affected in this case?

- A. Sinsarcosis
- B. Hemiarthrosis
- C. Synostosis
- D. Syndesmosis +
- E. Sychondrosis -

96. A 35-year-old woman was taking acetylsalicylic acid to relieve the pain in her carious tooth. After a time, she noticed digestive disorders, stomach heaviness, and heartburn. Why does this drug aggravate the gastric condition?

- A. Blocks PDE of smooth muscles
- B. Inhibits the activity of COX-1 in the stomach
- C. Increases hydrochloric acid secretion
- D. Disrupts the microcirculation in the gastrointestinal mucosa
- E. Increases pepsin activity

97. During an outbreak of a hospital-acquired infection, pure cultures of *S. aureus* were obtained upon inoculation from the nasopharynxes of medical personnel and wound discharge of surgical patients. What analysis must be conducted to find the likely source of infection in this case?

- A. Phage typing of the obtained cultures
- B. Repeated inoculations
- C. Biochemical properties analysis
- D. Sero-identification
- E. Antibiotic sensitivity testing

98. On the third day after gastric resection, the patient developed intestinal atony. What medicine should be used in this case?

- A. Proserine (Neostigmine)
- B. Pirilenum (Pempidine)
- C. No-Spa (Drotaverine)
- D. Benzohexonium (Hexamethonium)
- E. Atropine sulfate

99. A patient used an indirect-acting adrenergic agonist to treat rhinitis. After the patient has been putting in the nose drops for several days, the vasoconstrictive effect of the drug gradually diminished. Name this phenomenon:

- A. Teratogenicity
- B. Tachyphylaxis -
- C. Allergy
- D. Idiosyncrasy
- E. Cumulation

100. A measles outbreak has occurred in a maternity clinic. What class of maternal antibodies can provide a newborn with immunity to measles virus?

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

101. During examination of a man, who was in a car accident, the neurologist has detected dysmetria. This sign is characterized by:

- A. Speech disorder
- B. Inability to conduct a finger-to-nose test with eyes closed -
- C. Impaired muscle tone
- D. Disappearance of co-contraction ability of antagonist muscles
- E. Muscle tremors when performing voluntary movements

102. A man with multiple myeloma presents with protein in his urine. What type of proteinuria does he have?

- A. Renal tubular
- B. Renal glomerular
- C. Subrenal cystic
- D. Subrenal urethral
- E. Suprarenal -

103. A newborn had seizures that stopped after vitamin B₆ was prescribed. This effect was most likely observed, because vitamin B₆ takes part in formation of:

- A. Gamma-aminobutyric acid (GABA) =>
- B. Heme
- C. Histamine
- D. Non-essential amino acids
- E. Nicotinamide

104. A patient has elevated blood pressure due to increased vascular tone. To lower the blood pressure, it is necessary to prescribe the blockers of:

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

105. Feces of a child with an acute

intestinal infection were inoculated onto Endo medium, which resulted in the growth of numerous raspberry-red colonies with a metallic sheen. It indicates that the colibacillus is the likely causative agent of the disease. What property of the causative agent was used to distinguish it from other intestinal bacteria?

- A. Toxicogenicity
- B. Capsule formation
- C. Fermentation of lactose -
- D. Antigenic structure
- E. Oxidase activity

106. A man, who for many years has been suffering from bronchial asthma, has died of asphyxia. Histology of his lungs shows large amounts of mucus with eosinophilic admixtures in the lumina of the bronchioles and small bronchi, the interalveolar septa are sclerotic, the alveolar lumina are dilated. What mechanism of hypersensitivity reaction development is observed in this case?

- A. Reagin reaction -
- B. Cytotoxic reaction
- C. Granulomatosis
- D. Immune complex reaction
- E. Lymphocyte-induced cytolysis

107. A 48-year-old woman with diabetes mellitus has been hospitalized in a severe precomatose state. Analysis of her acid-base balance revealed metabolic acidosis. What primary mechanism is the cause of the changes detected in the woman's acid-base balance?

- A. Disturbed utilization of O_2 in the cells
- B. Disturbed blood buffer systems
- C. Decreased CO_2 excretion
- D. Excretion of alkaline components with urine -
- E. Formation of underoxidized products

108. The ophthalmologist noticed a purulent discharge from the conjunctiva of a newborn. Microscopy of the smear obtained from the conjunctiva found there a large number of leukocytes, as well as gram-negative bean-shaped diplococci located inside the leukocytes. What is the causative agent of this disease?

- A. *Staphylococcus epidermitis*
- B. *Staphylococcus aureus*
- C. *Streptococcus pyogenes*
- D. *Neisseria gonorrhoeae* -
- E. *Neisseria catarrhalis*

109. A man had an acute onset of

the disease. He complained of chills, fever of $40^\circ C$, headache, cough, and dyspnea. The man died on the 5 day after the onset. Autopsy shows enlarged lungs with variegated appearance — «large variegated lung». Such clinical presentation of the lungs is characteristic of the following disease:

- A. Adenovirus infection
- B. Croupous pneumonia
- C. Bronchiectasis
- D. Respiratory syncytial infection
- E. Influenza

110. To assess their adaptation to physical exertion, the doctor has examined the workers after a severe workload. What changes in the complete blood count can be detected in this case?

- A. Anemia
- B. Hypoalbuminemia
- C. Redistributive leukocytosis -
- D. Leukogram left shift
- E. Leukopenia

111. What compensatory response occurs in the human body when external temperature significantly rises?

- A. Dilation of the visceral blood vessels
- B. Decreased perspiration
- C. Increased muscle tone
- D. Peripheral vasoconstriction -
- E. Dilation of the cutaneous blood vessels

112. After putting in eye drops, a man with glaucoma developed miosis and myopia. His intraocular pressure decreased. What drugs can have such effect?

- A. N-cholinomimetics
- B. Muscarinic receptor antagonists
- C. Alpha-adrenomimetics
- D. M-cholinomimetics -
- E. Ganglioblockers

113. A 50-year-old man has undergone a surgery for gastric cancer. Complex anesthesia included dithylin (suxamethonium iodide). After the surgery was over, dithylin effect continued. Why is proserine (neostigmine) contraindicated in case of dithylin overdose?

- A. Increases synanthic membrane depolarization
- B. Reduces acetylcholine effect -
- C. Causes intestinal colic
- D. Reactivates acetylcholinesterase
- E. May cause bronchospasm

- 114.** Blood plasma of a healthy person contains several dozens of protein types. If a person becomes ill, new types of proteins develop in the body. Among them there are acute phase proteins. Name one such protein:
- A. Prothrombin
 - B. Immunoglobulin G
 - C. C-reactive protein
 - D. Immunoglobulin A
 - E. Fibrinogen
- 115.** A diet must contain fats. What plasticity function do they fulfill in the body?
- A. They are a part of glycocalyx
 - B. They are a part of cellular receptors
 - C. They are a part of cellular ion channels
 - D. They are a part of cellular ion pumps
 - E. They are a part of cellular membranes
- 116.** 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. Chronic myeloleukemia
 - B. Hemolytic anemia
 - C. Hypoplastic anemia
 - D. Acute myeloleukemia
 - E. Undifferentiated leukemia
- 117.** 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. Lower limb veins
 - C. Brain
 - D. Portal vein
 - E. Left ventricle of the heart
- 118.** A man is a carrier of AIDS virus that is an RNA virus. The cells of this patient synthesize viral DNA. This process is based on:
- A. Repair
 - B. Translation
 - C. Transcription
 - D. Reverse transcription
 - E. Replication
- 119.** What is used as an antidote for poisoning with salts of heavy metals?
- A. Oxygen
 - B. Naloxone
 - C. Sodium sulfate
 - D. Iodine
 - E. Unithiol (Dimercaptopropansulfonate sodium)
- 120.** In the hematology unit a patient with leukemia was prescribed 5-fluorouracil. This drug:
- A. Inhibits DNA synthesis
 - B. Inhibits translation
 - C. Inhibits transcription
 - D. Catalyzes replication
 - E. Stimulates DNase
- 121.** A 3-year-old child has been brought to the pediatrics department with a non-closure of the anterior fontanelle. At what age does it normally occur?
- A. At 2-3 months of age
 - B. In the first year of life
 - C. At 4-6 months of age
 - D. In the third year of life
 - E. In the second year of life
- 122.** A man has undergone corneal transplantation. What characteristics of corneal structure allow hoping for its retention rather than rejection?
- A. Presence of connective tissue
 - B. Presence of non-stratified squamous epithelium
 - C. Excessive innervation
 - D. Absence of blood vessels and typical lymphatic vessels
 - E. Presence of stratified anterior epithelium
- 123.** A child has been diagnosed with agammaglobulinemia. This genetic disease disrupts the antibody synthesis, leading to:
- A. Increased metabolism
 - B. Disturbed permeability of biomembranes
 - C. Decreased defense responses of the body
 - D. Disturbed cell division
 - E. Disturbed blood coagulation

124. After an open scapular fracture, a man suddenly died. Early autopsy detects frothy blood in the right ventricle and pulmonary arteries. What was the cause of death in this case?

- A. Air embolism —
- B. Pulmonary edema
- C. Bacterial embolism
- D. Fat embolism
- E. Tissue embolism

125. What type of disease inheritance results in men being affected by hemophilia, while women are the carriers of this disease?

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

126. A woman with chronic hepatitis complains of increased sensitivity to barbiturates that previously she could take without any signs of intoxication. Her condition is mainly associated with disturbance of the following hepatic function:

- A. Phagocytic
- B. Hemodynamic
- C. Metabolic —
- D. Hematopoietic
- E. Bile formation

127. Significant radiation exposure leads to changes in the body resistance, suppression of phagocytosis, reduction of nonspecific humoral defense factors, and decreased antibody synthesis. What type of infection can develop as a result of radiation sickness?

- A. Secondary
- B. Recurrence
- C. Superinfection
- D. Autoinfection —
- E. Inapparent

128. A patient, who for a long time was suffering from rheumatism and had mitral stenosis, died of cardiopulmonary failure. Autopsy revealed brown induration of the lungs. What circulatory disorder leads to such changes in the lungs?

- A. Portal hypertension ^k
- B. Chronic left ventricular failure
- C. Acute right ventricular failure ^k
- D. Chronic right ventricular failure
- E. Acute left ventricular failure ^k

129. The cell surface of pathogenic gram-negative bacteria can be covered in villi and cilia. What function do these structures have?

- A. Inhibition of complement activity
- B. Bacterial adhesion to the surface of the host cells, conjugation
- C. Nutrient transport into the cell
- D. RNA exchange between cells
- E. Resistance to antibody opsonization

130. A patient has cardiac rhythm disturbance. ECG shows heart rate of 60/min., prolongation of PQ interval, and periodical loss of QRS complex. What cardiac rhythm disturbance is it?

- A. First-degree incomplete AV block
- B. His' right bundle branch block
- C. Complete AV block
- D. Sick sinus syndrome
- E. Second-degree incomplete AV block

131. On examination a man presents with convergent strabismus, inward deviation of the eyeball and inability to move the eyeball outward. What nerve is damaged?

- A. Trochlear nerve
- B. Oculomotor nerve
- C. Optic nerve
- D. Ophthalmic nerve
- E. Abducent nerve

132. A child has signs of delayed physical and mental development (cretinism). This condition is caused by deficiency of the following hormone:

- A. Thyroxine —
- B. Calcitonin
- C. Somatotropin
- D. Insulin
- E. Testosterone

133. To study inflammations, a test animal was injected with a lethal dose of tetanus toxin into the cavity of a turpentine-induced abscess. However, the test animal did not die. What is the most likely cause of such test result?

- A. Formation of a barrier around inflammation
- B. Increased vascularization of the inflammation site
- C. Activation of detoxification function of phagocytes
- D. Activation of antibody synthesis during inflammation
- E. Stimulation of leukopoiesis during inflammation

134. A patient suffers from disturbed renal function. To check the filtration ability of the kidneys, he was referred for clearance measurement of the following substance:

- A. Creatinine
- B. Glutamine
- C. Indole
- D. Hydrogen carbonate
- E. Uric acid

135. A man, who has arrived from Tunisia, has alpha-thalassemia with hemolysis of erythrocytes and jaundice. The disease was diagnosed based on the presence of the following in the patient's blood:

- A. Polychromatophilic erythrocytes —
- B. Target erythrocytes
- C. Granular erythrocytes
- D. Normocytes
- E. Reticulocytes

136. A 56-year-old woman with angioneurotic edema was prescribed an H1 blocker with antispasmodic, sedative, and local anesthetic action. Select this H1 blocker from the list:

- A. Dimedrol (Diphenhydramine)
- B. Acyclovir
- C. Levodopa
- D. Oxoline
- (Dioxotetrahydroxytetrahydronaphthaline)
- E. Ambroxol

137. Watson and Crick determined that the DNA double helix structure is stabilized with the bonds between complementary nitrogenous bases. What type of bond is it?

- A. Phosphodiester
- B. N-glycosidic
- C. Ester
- D. Hydrogen —
- E. Peptide

138. The synthesis rates of DNA, RNA, and necessary proteins are decreased in the cells of a human body and mitotic activity is insignificant. These changes most likely correspond with the following ontogenetic period:

- A. Old age —
- B. Biological death
- C. Adolescence
- D. Clinical death
- E. Young age

139. A man with tetanus developed acute respiratory failure. What type of respiratory failure develops in such cases?

- A. Restrictive disorder of alveolar ventilation
- B. Dysregulatory disorder of alveolar ventilation
- C. Diffusion abnormality
- D. Perfusion abnormality
- E. Obstructive disorder of alveolar ventilation

140. A child with mushroom (fly agaric) poisoning was brought into a toxicology department. What drug should be administered first as a part of emergency aid?

- A. Papaverine
- B. Unithiol (Dimercaptopropansulfonate sodium)
- C. Atropine
- D. Naloxone
- E. —

141. A medical student was hospitalized into the infectious diseases unit on the 2nd day after the disease onset. The patient is suspected to have infectious mononucleosis. What results of laboratory analysis can confirm this diagnosis immediately on the day of the hospitalization?

- A. Cytomegalovirus antibodies were detected
- B. Herpesvirus was isolated
- C. Fourfold increase in number of antibodies to Epstein-Barr virus was detected
- D. IgM antibodies to Epstein-Barr virus — were detected
- E. IgM antibodies to herpes simplex virus were detected

142. What differs a sanguinic from a phlegmatic?

- A. —
- B. Balance between nervous processes
- C. Mobility of nervous processes —
- D. Weakness of nervous processes
- E. Intensity of excitation processes

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

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

144. ECG of the patient shows increased duration of the QRS complex. What is the most likely cause?

- A. Disturbed conduction in the atrioventricular node
- B. Increased atrial excitability
- C. Increased period of ventricular excitation
- D. Increased atrial and ventricular excitability
- E. Increased period of atrial excitation

145. An older man developed an acute cerebrovascular accident, followed by coma and death. Autopsy revealed a large blood-filled cavity in the right hemisphere of his brain. What pathological process was detected in the brain?

- A. Brain tumor
- B. Hematoma
- C. Hemorrhagic infiltration
- D. Stroke
- E. Cyst

146. During a surgery, the surgeon's manipulations in the area between the stomach and liver were extremely careful, to avoid damaging the hepatoduodenal ligament, because it contains:

- A. Common bile duct, common hepatic artery, inferior vena cava
- B. Proper hepatic artery, gastroduodenal artery
- C. Common bile duct, proper hepatic artery, hepatic portal vein
- D. Hepatic portal vein, hepatic veins
- E. Inferior vena cava, cystic duct

147. A man for a long time was suffering from hemoblastosis. Autopsy of the body revealed brown color of the bone marrow, spleen, liver, and lymph nodes. Perls

histochemical reaction was performed. It was determined that reticular, endothelial, and histiocytic elements of the affected organs contain blue granules. What pigment was detected using the Perls histochemical reaction?

- A. Bilirubin
- B. Hematoporphyrin
- C. Hematoidin
- D. Hemosiderin -
- E. -

148. When planning a diet, one should observe the correct ratio of nutrients: proteins, fats, and carbohydrates. What is the correct ratio?

- A. Proteins - 1, fats - 2, carbohydrates - 1
- B. Proteins - 2, fats - 2, carbohydrates - 1
- C. Proteins - 2, fats - 3, carbohydrates - 1
- D. Proteins - 1, fats - 1, carbohydrates - 4
- E. Proteins - 3, fats - 1, carbohydrates - 2

149. Collagenosis patients typically present with connective tissue destruction processes. The presence of these processes can be confirmed by the increase in:

- A. Blood oxyproline and oxylysine
- B. Blood creatine and creatinine
- C. Blood urates
- D. Transaminase activity in the blood
- E. LDH-isoenzyme activity in the blood

150. After an X-ray examination of the tuberculosis clinic patient, he was diagnosed with tumor of the right lung. During the surgery, the surgeon removed the middle lobe of the patient's right lung. This lobe includes:

- A. *Segmentum apicale (superius) et segmentum basale mediale*
- B. *Segmentum basale anterius et posterius*
- C. *Segmentum laterale et segmentum mediale*
- D. *Segmentum anterius et segmentum apicale*
- E. *Segmentum lingualare superius et inferius*