

1. A 30-year-old patient complains about having abdominal pain and diarrhea for five days; body temperature rise up to $37,5^{\circ}\text{C}$ along with chills. The day before a patient had been in a forest and drunk from an open water reservoir. Laboratory analyses enabled to make the following diagnosis: amebic dysentery. What is the drug of choice for its treatment?

- A. Metronidazole
- B. Furazolidonum
- C. Levomycetin
- D. Phthalazol
- E. Emetine hydrochloride

2. Quite often the cause of secondary immunodeficiency is an infection involvement, when the causative agents propagate directly in the cells of immune system and destroy it. The following diseases are characterized by:

- A. Infectious mononucleosis, AIDS
- B. Tuberculosis, mycobacteriosis
- C. Poliomyelitis, type A hepatitis
- D. Dysentery, cholera
- E. Q-febris, epidemic typhus

3. Heart rate of a 30-year-old man under emotional stress reached 112 bpm. The reason for the heart rate increase is the altered condition of the following conducting system of heart:

- A. Sinoatrial node
- B. Purkinje's fibers
- C. His' bundle branches
- D. Atrioventricular node
- E. His' bundle

4. Sanitary bacteriological research on water by the membrane filter method revealed two red colonies on a membrane filter (Endo agar) through which 500 ml of analyzed water were passed. Calculate the coli index and coli titer of the analyzed water:

- A. 4 and 250
- B. 2 and 500
- C. 250 and 4
- D. 500 and 2
- E. 250 and 2

5. A 46-year-old female patient has a continuous history of progressive muscular (Duchenne's) dystrophy. Which blood enzyme changes will be of diagnostic value in this case?

- A. Creatine phosphokinase
- B. Lactate dehydrogenase
- C. Pyruvate dehydrogenase
- D. Glutamate dehydrogenase
- E. Adenylate cyclase

6. Extensive thromboembolic infarction of the left cerebral hemispheres, large septic spleen, immunocomplex glomerulonephritis, ulcers on the edges of the aortic valves, covered with polypous thrombus with colonies of staphylococcus were revealed on autopsy of the young man who died in coma. What disease caused cerebral thromboemboly?

- A. Septic bacterial endocarditis
- B. Septicemia
- C. Acute rheumatic valvulitis
- D. Septicopyemia
- E. Rheumatic thromboendocarditis

7. A 10-year-old girl has a history of repeated acute respiratory viral infection. After recovering she presents with multiple petechial hemorrhages on the sites of friction from clothing rubbing the skin. What kind of hypovitaminosis has this girl?

- A. C
- B. B_6
- C. B_1
- D. A
- E. B_2

8. Autopsy of a patient who suffered from croupous pneumonia and died from pneumococcal sepsis revealed 900 ml of turbid greenish-yellow liquid in the right pleural cavity. Pleural leaves are dull, plephoric. Name the clinicopathological form of inflammation in the pleural cavity:

- A. Empyema
- B. Fibrinous inflammation
- C. Phlegmon
- D. Chronic abscess
- E. Acute abscess

9. Researchers isolated 5 isoenzymic forms of lactate dehydrogenase from the human blood serum and studied their properties. What property indicates that the isoenzymic forms were isolated from the same enzyme?

- A. Catalyzation of the same reaction
- B. The same molecular weight
- C. The same physicochemical properties
- D. Tissue localization
- E. The same electrophoretic mobility

10. A patient suffering from stomach ulcer has been treated with an antacid drug amagel. For acute bronchitis treatment he was prescribed the antibiotic methacycline. However within next 5 days the fever didn't fall, cough and sputum nature remained unchanged. A physician came to the conclusion that the drugs were incompatible. What type of drug incompatibility is the case?

- A. Pharmacokinetic, absorption stage
- B. Pharmacokinetic, biotransformation stage
- C. Pharmaceutic
- D. Pharmacodynamic
- E. Direct antagonism

11. ECG of a 44-year-old patient shows signs of hypertrophy of both ventricles and the right atrium. The patient was diagnosed with the tricuspid valve insufficiency. What pathogenetic variant of cardiac dysfunction is usually observed in case of such insufficiency?

- A. Heart overload by volume
- B. Heart overload by resistance
- C. Primary myocardial insufficiency
- D. Coronary insufficiency
- E. Cardiac tamponade

12. Proserin increases skeletal muscle tone when given systematically. Halothane induces relaxation of skeletal muscles and reduces proserin effects. What is the nature of proserin and halothane interaction?

- A. Indirect functional antagonism
- B. Direct functional antagonism
- C. Competitive antagonism
- D. Independent antagonism
- E. Noncompetitive antagonism

13. The minute blood volume in a patient with transplanted heart has increased as a result of physical activity. What regulative mechanism is responsible for these changes?

- A. Catecholamines
- B. Sympathetic unconditioned reflexes
- C. Parasympathetic unconditioned reflexes
- D. Sympathetic conditioned reflexes
- E. Parasympathetic conditioned reflexes

14. An aged man had raise of arterial pressure under a stress. It was caused by activation of:

- A. Sympathoadrenal system
- B. Parasympathetic nucleus of vagus
- C. Functions of thyroid gland
- D. Functions of adrenal cortex
- E. Hypophysis function

15. Autopsy of a man who died from chronic cardiovascular collapse revealed "tiger heart". Sideways of endocardium a yellowish-white banding can be seen; myocardium is dull, dark-yellow. What process caused this pathology?

- A. Fatty parenchymatous degeneration
- B. Carbohydrate degeneration
- C. Hyaline degeneration
- D. Fatty vascular-stromal degeneration
- E. Amyloidosis

16. A 55-year-old male patient was hospitalised to a surgical clinic for suspected septicemia. What material should be taken for analysis?

- A. Blood, sugar broth
- B. Liquor, serum agar
- C. Urine, beef-extract broth
- D. Pus, yolk saline agar
- E. Lymph node punctate, cysteine agar

17. A patient has pellagra. Interrogation revealed that he had lived mostly on maize for a long time and eaten little meat. This disease had been caused by the deficit of the following substance in the maize:

- A. Tryptophan
- B. Tyrosine
- C. Proline
- D. Alanine
- E. Histidine

18. During examination of a 6-year-old child a doctor revealed greyish films on the pharyngeal tonsils. Their removal provoked moderate haemorrhage. Bacterioscopy revealed gram-positive clublike bacteria. What symptoms will develop in this child within the next few days if no specific treatment is provided?

- A. Toxic lesions of myocard, liver and kidney
- B. Pulmonary edema
- C. Strong paroxysmal cough
- D. Papulous skinrash
- E. Intermittent fever

19. A 46-year-old patient consulted a doctor complaining about joint pain that becomes stronger the day before the weather changes. Blood examination

revealed an increased concentration of uric acid. The most probable cause of the disease is the intensified disintegration of the following substance:

- A. Adenosine monophosphate
- B. Cytidine monophosphate
- C. Uridine triphosphate
- D. Uridine monophosphate
- E. Thymidine monophosphate

20. 12 hours after an acute attack of retrosternal pain a patient presented a jump of aspartate aminotransferase activity in blood serum. What pathology is this deviation typical for?

- A. Myocardium infarction
- B. Viral hepatitis
- C. Collagenosis
- D. Diabetes mellitus
- E. Diabetes insipidus

21. After a trauma of the upper third of the anterior forearm surface a patient presents with difficult pronation, weakening of palmar flexor muscles and altered skin sensitivity of 1-3 fingers. Which nerve is damaged?

- A. *n. medianus*
- B. *n. musculocutaneus*
- C. *n. ulnaris*
- D. *n. cutaneus antebrachii medialis*
- E. *n. radialis*

22. A 2-year-old child with mental and physical retardation has been delivered to a hospital. He presents with frequent vomiting after having meals. There is phenylpyruvic acid in urine. Which metabolism abnormality is the reason for this pathology?

- A. Amino-acid metabolism
- B. Lipidic metabolism
- C. Carbohydrate metabolism
- D. Water-salt metabolism
- E. Phosphoric calcium metabolism

23. A 38-year-old man died in the attempt of lifting weight. He had collaptoid state. Autopsy revealed an extensive aneurism rupture of thoracic aorta. He suffered from visceral syphilis during his lifetime. What pathological process caused weakness of aortic wall, its dilatation and rupture?

- A. Vanishing of elastic fibers
- B. Vanishing of collagen fibers
- C. Muscle layer atrophy
- D. Intima changes by shagreen leather type
- E. Vascularization

24. A patient suffering from myasthenia has been administered proserin. After its administration the patient has got nausea, diarrhea, twitch of tongue and skeletal muscles. What drug would help to eliminate the intoxication?

- A. Atropine sulfate
- B. Physostigmine
- C. Pyridostigmine bromide
- D. Isadrine
- E. Mesatonum

25. A man died from an acute infectious disease accompanied by fever, jaundice, haemorrhagic rash on the skin and mucous membranes as well as by acute renal insufficiency. Histological examination of renal tissue (stained by Romanovsky-Giemsa method) revealed some convoluted bacteria looking like C and S letters. What bacteria were revealed?

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

26. A 46-year-old patient suffering from the diffuse toxic goiter underwent resection of the thyroid gland. After the surgery the patient presents with appetite loss, dyspepsia, increased neuromuscular excitement. The body weight remained unchanged. Body temperature is normal. Which of the following has caused such a condition in this patient?

- A. Reduced production of parathormone
- B. Increased production of thyroxin
- C. Increased production of calcitonin
- D. Increased production of thyroliberin
- E. Reduced production of thyroxin

27. Medical examination at the military registration and enlistment office revealed that a 15-year-old boy was high, with eunuchoid body proportions, gynecomastia, female pattern of pubic hair distribution. The boy had also fat deposits on the thighs, no facial hair, high voice, subnormal intelligence quotient. Which karyotype corresponds with this disease?

- A. 47, XXY
- B. 45, XO
- C. 46, XX
- D. 46, XY
- E. 47, XXX

28. A doctor recommends a patient with duodenal ulcer to drink cabbage and potato juice after the therapy course. Which substances contained in these vegetables help to heal and prevent the ulcers?

- A. Vitamin U
- B. Pantothenic acid
- C. Vitamin C
- D. Vitamin B₁
- E. Vitamin K

29. Urine analysis of a 12-year-old boy reveals high concentration of all aliphatic amino acids with the highest excretion of cystine and cysteine. US of kidneys revealed kidney concretions. What is the most likely pathology?

- A. Cystinuria
- B. Alkaptonuria
- C. Cystitis
- D. Phenylketonuria
- E. Hartnup disease

30. A 5-year-old child has been diagnosed with acute right distal pneumonia. Sputum inoculation revealed that the causative agent is resistant to penicillin, but it is sensitive to macrolides. What drug should be prescribed?

- A. Azithromycin
- B. Tetracycline
- C. Gentamycin
- D. Streptomycin
- E. Ampicillin

31. Autopsy of a 73-year-old man who had been suffering from the coronary heart disease along with cardiac insufficiency for a long time revealed: nutmeg liver, brown induration of lungs, cyanotic induration of kidneys and spleen. What kind of circulation disorder was the cause of such effects?

- A. General chronic venous congestion
- B. Arterial hyperaemia
- C. General acute venous congestion
- D. Acute anaemia
- E. Chronic anaemia

32. A patient suffering from chronic hyperacidic gastritis takes an antacid

drug for heartburn elimination. After its ingestion the patient feels better but at the same time he has a sensation of stomach swelling. Which of the following drugs might be the cause of such side effect?

- A. Sodium hydrocarbonate
- B. Magnesium oxide
- C. Magnesium trisilicate
- D. Aluminium hydroxide
- E. Pepsin

33. A 30-year-old male patient with acute pancreatitis has been found to have a disorder of cavity protein digestion. The reason for such condition can be the hyposynthesis and hyposecretion of the following enzyme:

- A. Tripsin
- B. Pepsin
- C. Lipase
- D. Dipeptidase
- E. Amylase

34. A patient has been given high doses of hydrocortisone for a long time. This caused atrophy of one of the adrenal cortex zones. Which zone is it?

- A. Fascial
- B. Glomerular
- C. Reticular
- D. Glomerular and reticular
- E. -

35. A victim of an accident has bleeding from the soft tissues anterior to the mandibular angle. Which vessel should be ligated for the bleeding arrest?

- A. *A. facialis*
- B. *A. carotis interna*
- C. *A. temporalis superficialis*
- D. *A. alveolaris inferior*
- E. *A. lingualis*

36. Microscopic examination of a gram-stained scrape from a patient's tongue revealed oval, round, elongated chains of dark-violet gemmating cells. What disease can be caused by this causative agent?

- A. Candidiasis
- B. Actinomycosis
- C. Streptococcal infection
- D. Staphylococcal infection
- E. Diphtheria

37. The greater amount of nitrogen is excreted from the organism in form of urea. Inhibition of urea synthesis and accumulation of ammonia in blood and

tissues are induced by the decreased activity of the following liver enzyme:

- A. Carbamoyl phosphate synthetase
- B. Aspartate aminotransferase
- C. Urease
- D. Amylase
- E. Pepsin

38. A 36-year-old female patient has a history of collagen disease. Urine analysis is likely to reveal an increased concentration of the following metabolite:

- A. Oxyproline
- B. Indican
- C. Creatinine
- D. Urea
- E. Urobilinogen

39. A coprological survey revealed light-colored feces containing drops of neutral fat. The most likely reason for this condition is the disorder of:

- A. Bile inflow into the bowel
- B. Gastric juice acidity
- C. Pancreatic juice secretion
- D. Intestinal juice secretion
- E. Intestinal absorption

40. The secretion of which hypophysial hormones will be inhibited after taking the oral contraceptives containing sex hormones?

- A. Gonadotropic hormone
- B. Vasopressin
- C. Thyrotrophic hormone
- D. Somatotrophic hormone
- E. Ocytocin

41. A histological specimen of a kidney shows a part of the distal tubule going between the afferent and efferent arteriole. The cells building the tubule wall have dense nuclei; basal membrane is absent. Such structural formation is called:

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

42. During preparation of a patient to a heart surgery it was necessary to measure pressure in heart chambers. In one of them pressure varied from 0 mm Hg up to 120 mm Hg within one cardiac cycle. What heart chamber is it?

- A. Left ventricle
- B. Right ventricle
- C. Right atrium
- D. Left atrium
- E. -

43. A patient with essential hypertension has a high rate of blood renin. Which of antihypertensive drugs should be preferred?

- A. Lisinopril
- B. Propranolol
- C. Prazosinum
- D. Nifedipine
- E. Dichlothiazide

44. In order to determine toxigenicity of diphtheria bacilli a strip of filter paper impregnated with antitoxic diphtherial serum was put on the dense nutrient medium. There were also inoculated a microbial culture under examination and a strain that is known to be toxigenic. If the microbial culture under examination produces exotoxin, this will result in formation of:

- A. Precipitin lines
- B. Haemolysis zones
- C. Zones of diffuse opacification
- D. Zones of lecithovitellinous activity
- E. Precipitin ring

45. It was revealed that T-lymphocytes were affected by HIV. Virus enzyme - reverse transcriptase (*RNA*-dependent *DNA*-polymerase) - catalyzes the synthesis of:

- A. *DNA* on the matrix of virus *mRNA*
- B. Virus informational *RNA* on the matrix of *DNA*
- C. *DNA* on virus ribosomal *RNA*
- D. Viral *DNA* on *DNA* matrix
- E. *mRNA* on the matrix of virus protein

46. Microscopical examination of an enlarged cervical lymph node revealed blurring of its structure, absence of lymphoid follicles; all the microscopic fields showed cells with roundish nuclei and thin limb of basophil cytoplasm. It is known from the clinical data that other groups of lymph nodes are also enlarged as well as spleen and liver. What disease might be suspected?

- A. Lymphoid leukosis
- B. Lymphogranulomatosis
- C. Lymphosarcoma
- D. Myeloid leukosis
- E. Multiple myeloma

47. A 38-year-old patient came to a traumatology centre and complained about an injury of his right hand. Objectively: the patient has a cut wound in the region of the thenar eminence on the right hand; distal phalanx of the I finger cannot be flexed. What muscle was injured?

- A. Long flexor muscle of thumb
- B. Short flexor muscle of thumb
- C. Short abductor muscle of thumb
- D. Opposer muscle of thumb
- E. Abductor muscle of thumb

48. Lung ventilation in a person is increased as a result of physical activity. Which of the following indices of the external respiration is much higher than in a state of rest?

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

49. As a result of activation of the ion channels of the external membrane the rest potential of an excitable cell has greatly increased. What channels were activated?

- A. Potassium channels
- B. Sodium channels
- C. Fast calcium channels
- D. Slow calcium channels
- E. Sodium and calcium channels

50. As a result of continuous starvation the glomerular filtration rate has increased by 20%. The most probable cause of the glomerular filtration alteration under the mentioned conditions is:

- A. Decrease in the oncotic pressure of blood plasma
- B. Increase in the systemic arterial pressure
- C. Increase in the permeability of the renal filter
- D. Increase of the filtration quotient
- E. Increase of the renal blood flow

51. A patient with cardiogenic shock, hypotension, asphyxia and edemata was given an injection of non-glycosidic cardiotonic. What drug was injected?

- A. Dobutamine
- B. Caffeine sodium benzoate
- C. Cordiamin
- D. Aethimizolum
- E. Bemegride

52. After transfusion of 200 ml of blood a patient presented with body temperature rise up to $37,9^{\circ}\text{C}$. Which of the following substances is the most likely cause of temperature rise?

- A. Interleukin-1
- B. Interleukin-2
- C. Tumour necrosis factor
- D. Interleukin-3
- E. Interleukin-4

53. A man who is riding the carousel presents with increased heart rate, sweating, nausea. This condition is caused primarily by the stimulation of the following receptors:

- A. Vestibular ampullar
- B. Proprioceptors
- C. Vestibular otolithic
- D. Auditory
- E. Visual

54. A worker of a cattle farm fell acutely ill and then died from the progressing intoxication. Autopsy revealed enlarged, hyposthenic spleen of dark-cherry colour when dissected; excessive pulp scraping. At the base and fornix of brain pia maters are edematous, soaked with blood, dark-red ("scarlet hat"). Microscopic examination revealed serous haemorrhagic inflammation of brain tissues and tunics along with destruction of small vessel walls. What is the most likely diagnosis?

- A. Anthrax
- B. Tularemia
- C. Brucellosis
- D. Plaque
- E. Cholera

55. Which of the listed diuretic agents **WILL NOT** have diuretic effect on a patient with Addison's disease?

- A. Spironolactone
- B. Furosemide
- C. Hydrochlorothiazide
- D. Triamterene
- E. Ethacrynic acid

56. A man with a wound of his limb that had been suppurating for a long time died from intoxication. Autopsy revealed extreme emaciation, dehydration, brown

atrophy of liver, myocardium, spleen and cross-striated muscles as well as renal amyloidosis. What diagnosis corresponds with the described presentations?

- A. Chroniosepsis
- B. Septicopyemia
- C. Septicemia
- D. Chernogubov's syndrome
- E. Brucellosis

57. This drug has a destructive effect on erythrocytic forms of malarial plasmodia and dysenteric amoebae. It is used for treatment and prevention of such diseases as malaria, amebiasis and interstitial disease. What drug is it?

- A. Chingamin
- B. Emetine hydrochloride
- C. Tetracycline
- D. Erythromycin
- E. Quinine

58. A patient has an increased pyruvate concentration in blood, most of it is excreted with the urine. What kind of avitaminosis has this patient?

- A. B_1
- B. E
- C. B_3
- D. B_6
- E. B_2

59. A child suffers from drug idiosyncrasy. What is the cause of such reaction?

- A. Hereditary enzymopathy
- B. Exhaustion of substrate interacting with pharmaceutical substance
- C. Accumulation of pharmaceutical substance
- D. Inhibition of microsomal liver enzymes
- E. Associated disease of target organ

60. One of the parents is suspected of having phenylketonuria recessive gene. What is the risk of giving birth to a child with inborn phenylketonuria?

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

61. Pulmonary examination of a patient who has worked as a stone grinder for 9 years revealed small dense roundish nodules consisting of connective tissue. The nodules were found to have peripheral macrophages. Such pulmonary

alterations are indicative of the following disease:

- A. Silicosis
- B. Acute pneumonia
- C. Multiple bronchiectasis
- D. Chronic bronchitis
- E. Bronchial asthma

62. A 12-year-old teenager has significantly put off weight within 3 months; glucose concentration rose up to 50 millimole/l. He fell into a coma. What is the main mechanism of its development?

- A. Hyperosmolar
- B. Hypoglycemic
- C. Ketonemic
- D. Lactacidemic
- E. Hypoxic

63. Which way of heat emission by the bodies of greenhouse workers is the most effective at the temperature of 36°C degrees and relative humidity of 70%?

- A. Liquid evaporation
- B. Thermal conduction
- C. Heat radiation
- D. Convection
- E. -

64. Examination of a 70-year-old patient revealed insulin-dependent diabetes. What drug should be administered?

- A. Glibenclamid
- B. Insulin
- C. Mercazolilum
- D. Parathyroidin
- E. Cortisone

65. A disaster fighter at a nuclear power plant developed hemorrhagic syndrome on the background of acute radiation disease. What is the most important factor of syndrome pathogenesis?

- A. Thrombocytopenia
- B. Vascular wall damage
- C. Increased activity of fibrinolysis factors
- D. Increased activity of anticoagulative system factors
- E. Decreased activity of coagulative factors

66. Jaundice treatment involves administration of barbiturates inducing the synthesis of UDP-glucuronyl transferase. A medicinal effect is caused by the production of:

- A.** Direct reacting (conjugated) bilirubin
- B.** Indirect reacting (unconjugated) bilirubin
- C.** Biliverdin
- D.** Protoporphyrin
- E.** Heme

67. A histological specimen shows a blood vessel. Its inner coat is composed by endothelium, subendothelium and internal elastic membrane. The middle coat is enriched with smooth myocytes. Such morphological characteristics are typical for the following vessel:

- A.** Muscular-type artery
- B.** Elastic-type artery
- C.** Capillary
- D.** Non-muscular vein
- E.** Muscular-type vein

68. An 18-year-old man was delivered to the hospital after a road accident. Examination at the traumatological department revealed multiple injuries of soft tissues of face in the region of the medial eye angle. The injuries caused massive haemorrhage. What arterial anastomosis might have been damaged in this region?

- A.** *a. carotis externa et a. carotis interna*
- B.** *a. carotis externa et a. subclavia*
- C.** *a. carotis interna et a. subclavia*
- D.** *a. subclavia et a. ophthalmica*
- E.** *a. carotis interna et a. ophthalmica*

69. Autopsy of a 75-year-old man with a long history of atherosclerosis revealed a grey irregular-shaped focus of loose consistency in the right parietotemporal region of brain. What is the most likely cause of this process?

- A.** Thrombosis of the right medial cerebral artery
- B.** Thrombosis of the right anterior cerebral artery
- C.** Thrombosis of the right posterior cerebral artery
- D.** Thrombosis of basilar artery
- E.** Thrombosis of tomentum cerebri

70. Autopsy of a man with a malignant stomach tumour who had died from cancer intoxication revealed in the posteroinferior lung fields some dense, grayish-red irregular foci protruding above the section surface. Microscopic examination revealed exudate containing a large amount of neutrophils in the lumen and walls of small bronchi and alveoles. Such pulmonary alterations indicate the following disease:

- A.** Acute purulent bronchopneumonia
- B.** Acute bronchitis
- C.** Croupous pneumonia
- D.** Intermittent pneumonia
- E.** Acute serous bronchopneumonia

71. A surgeon has to find the common hepatic duct during the operative intervention on account of concretions in the gall ducts. The common hepatic duct is located between the leaves of:

- A.** Hepatoduodenal ligament
- B.** Hepatogastric ligament
- C.** Hepatorenal ligament
- D.** Round ligament of liver
- E.** Venous ligament

72. Autopsy of a 1,5-year-old child revealed haemorrhagic skin rash, moderate hyperaemia and edema of nasopharyngeal mucous membrane, small haemorrhages in the mucous membranes and internal organs; dramatic dystrophic alterations in liver and myocardium; acute necrotic nephrosis; massive haemorrhages in the adrenal glands. What disease are these alterations the most typical for?

- A.** Meningococcal infection
- B.** Scarlet fever
- C.** Diphtheria
- D.** Measles
- E.** Epidemic typhus

73. A 75-year-old-female patient with complaints of visual impairment has been delivered to the ophthalmologic department. Objective examination revealed a brain tumor in area of the left optic tract. The patient has a visual field defect in the following area:

- A.** Left half of both eyes retina
- B.** Right half of both eyes retina
- C.** Left and right halves of the left eye retina
- D.** Left and right halves of the right eye retina
- E.** Left and right halves of both eyes retina

74. A patient with coronary disease has been diagnosed with myocardial hypertrophy, tachycardia and a decrease in minute blood volume. What is the leading mechanism of cardiac hystiocyte damage in this case?

- A. Damage of specific membrane pumps
- B. Increase in α and β adrenoreceptors quantity
- C. Mg^{2+} loss by cardiac hystiocytes
- D. Ca^{2+} loss by cardiac hystiocytes
- E. Cardiac hystiocyte dehydration

75. Blood analysis of a patient with jaundice reveals conjugated bilirubinemia, increased concentration of bile acids. There is no stercobilinogen in urine. What type of jaundice is it?

- A. Obstructive jaundice
- B. Hepatocellular jaundice
- C. Parenchymatous jaundice
- D. Hemolytic jaundice
- E. Cythemolytic jaundice

76. While studying maximally spiralized chromosomes of human karyotype the process of cell division was stopped in the following phase:

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

77. A man is being measured power inputs on an empty stomach, in the lying position, under conditions of physical and psychic rest at a comfortable temperature. Power inputs will reach the maximum at:

- A. 5-6 p.m.
- B. 7-8 a.m.
- C. 10-12 a.m.
- D. 2-3 p.m.
- E. 3-4 a.m.

78. When measuring power inputs of a man by the method of indirect calorimetry the following results were obtained: 1000 ml oxygen consumption and 800 ml carbon dioxide liberation per minute. The man under examination has the following respiratory coefficient:

- A. 0,8
- B. 1,25
- C. 0,9
- D. 0,84
- E. 1,0

79. A newborn child with pylorostenosis has often repeating vomiting accompanied by apathy, weakness, hypertonicity, sometimes convulsions. What disorder form of acid-base balance is it?

- A. Nongaseous alkalosis
- B. Gaseous alkalosis
- C. Gaseous acidosis
- D. Metabolic acidosis
- E. Excretory acidosis

80. A concentrated solution of sodium chloride was intravenously injected to an animal. This caused decreased reabsorption of sodium ions in the renal tubules. It is the result of the following changes of hormonal secretion:

- A. Aldosterone reduction
- B. Aldosterone increase
- C. Vasopressin reduction
- D. Vasopressin increase
- E. Reduction of atrial natriuretic factor

81. A patient has been diagnosed with alkaptonuria. Choose an enzyme whose deficiency can be the reason for this pathology:

- A. Homogentisic acid oxidase
- B. Phenylalanine hydroxylase
- C. Glutamate dehydrogenase
- D. Pyruvate dehydrogenase
- E. Dioxyphenylalanine decarboxylase

82. A patient consulted an urologist about pain during urination. Analysis of his urine taken in the daytime revealed eggs with a characteristic sharp point. It is known from the anamnesis that the patient has recently returned from Australia. What is the most likely diagnosis?

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

83. A 49-year old female patient has limitation of left limbs arbitrary movements. Muscular tonus of left hand and leg is overstrained and spasmodic, local tendon reflexes are strong, pathological reflexes are presented. What is the most likely development mechanism of hypertension and hyperreflexia?

- A. Reduction of descending inhibitory influence
- B. Motoneuron activation induced by stroke
- C. Activation of excitatory influence from the focus of stroke
- D. Activation of synaptic transmission
- E. Ihibition of cerebral cortex motoneurons

84. A 35-year-old patient complains about having severe rhinitis and loss of sense of smell for a week. Objectively: the nasal cavity contains a lot of mucus covering the mucous membrane and blocking olfactory receptors. In what region of the nasal cavity are these receptors located?

- A. Superior nasal concha
- B. Median nasal concha
- C. Inferior nasal concha
- D. Common nasal meatus
- E. Vestibule of nose

85. A 10-year-old child had the mantoux tuberculin test administered. 48 hours later a papule up to 8 mm in diameter appeared on the site of the injection. What type of hypersensitivity reaction developed after the tuberculin injection?

- A. Type IV hypersensitivity reaction
- B. Arthus phenomenon
- C. Seroreaction
- D. Atopic reaction
- E. Type II hypersensitivity reaction

86. Vitamin B_1 deficiency causes disturbance of oxidative decarboxylation of α -ketoglutaric acid. This leads to the impaired synthesis of the following coenzyme:

- A. Thiamine pyrophosphate
- B. Nicotinamide adenine dinucleotide
- C. Flavine adenine dinucleotide
- D. Lipoic acid
- E. Coenzyme A

87. Examination of a pregnant woman having Rh-negative blood revealed high level of antierythrocytic antibodies. For its reduction she was implanted with her husband's Rh-positive skin graft. The graft was rejected in two weeks. Its microscopic examination revealed circulatory disturbance, edema and cellular infiltration with lymphocytes, neutrophils and macrophages predominance. What is the most likely pathology?

- A. Graft immunity
- B. Immediate hypersensitivity
- C. Delayed-type hypersensitivity
- D. Granulomatous inflammation
- E. Interstitial inflammation

88. A 17-year-old girl took a high dose of phenobarbital to commit a suicide. An ambulance doctor cleansed her stomach and gave her an intravenous injection of bemegride and sodium hydrocarbonate solution. What was sodi-

um hydrocarbonate injected for?

- A. For increasing renal excretion of phenobarbital
- B. For breathing stimulation
- C. For arterial pressure normalization
- D. For phenobarbital inactivation
- E. For bringing the patient to consciousness

89. While examining the oral cavity a stomatologist revealed inflammation of papillae on the border of the median and posterior third of the back of tongue. What papillae are inflamed?

- A. *Papillae vallatae*
- B. *Papillae fungiformes*
- C. *Papillae foliatae*
- D. *Papillae filiformes*
- E. *Papillae conicae*

90. A patient is 44 years old. Laboratory examination of his blood revealed that content of proteins in plasma was 40 g/l. What influence will be exerted on the transcapillary water metabolism?

- A. Filtration will be increased, reabsorption - decreased
- B. Both filtration and reabsorption will be increased
- C. Both filtration and reabsorption will be decreased
- D. Filtration will be decreased, reabsorption - increased
- E. Metabolism will stay unchanged

91. A patient has corestenoma. What is the reason of such condition?

- A. Increased tonus of parasympathetic centres
- B. Increased tonus of sympathetic centres
- C. Increased activity of sympathoadrenal system
- D. Adrenaline action
- E. Noradrenaline action

92. A 46-year-old man had a bulging dark macula on skin that caused no discomfort. With time it began to increase in size and became painful. It turned dark brown and there was a nodule on palpation. Histological examination of tissues revealed spindle and polymorphous cells with multiple mitoses. Their cytoplasm contained brown pigment. What tumour is it?

- A. Melanoma
- B. Basalioma
- C. Hemangioma
- D. Nevus
- E. -

93. The patient with complaints of permanent thirst applied to the doctor. Hyperglycemia, polyuria and increased concentration of 17-ketosteroids in the urine were revealed. What disease is the most likely?

- A. Steroid diabetes
- B. Insulin-dependent diabetes mellitus
- C. Myxoedema
- D. Type I glycogenosis
- E. Addison's disease

94. A 32-year-old patient consulted a doctor about the absence of lactation after parturition. Such disorder might be explained by the deficit of the following hormone:

- A. Prolactin
- B. Somatotropin
- C. Vasopressin
- D. Thyrocalcitonin
- E. Glucagon

95. An infant has pylorospasm, weakness, hypodynamia, convulsions as a result of frequent vomiting. What kind of acid-base disbalance is it?

- A. Excretory alkalosis
- B. Excretory acidosis
- C. Metabolic acidosis
- D. Exogenous nongaseous acidosis
- E. Gaseous alkalosis

96. A weightlifter has a disruption of thoracic lymphatic duct as a result of lifting a weight. Choose the most likely site of injury:

- A. In the region of aortic hiatus
- B. In the region of lumbosacral plexus
- C. In the posterior mediastinum
- D. In the region of venous angle
- E. In the region of neck

97. A woman suffering from osteochondrosis has acute pain in her humeral articulation that gets worse when she tries to abduct her shoulder. These symptoms might be caused by damage of the following nerve:

- A. Axillary nerve
- B. Subscapular nerve
- C. Dorsal scapular nerve
- D. Subclavicular nerve
- E. Thoracodorsal nerve

98. Pyeloureterography X-ray photo showed a renal pelvis with minor calyces only (major calyces were absent). What form of urinary tracts of a kidney was revealed?

- A. Embryonal
- B. Fetal
- C. Mature
- D. Ampullar
- E. -

99. A female patient presents with endocrine dysfunction of follicular cells of the ovarian follicles resulting from an inflammation. The synthesis of the following hormone will be inhibited:

- A. Estrogen
- B. Progesterone
- C. Lutropin
- D. Follicle stimulating hormone
- E. Follistatine

100. A 19-year-old female patient has had low haemoglobin rate of 90-95 g/l since childhood. Blood count results obtained after hospitalisation are as follows: erythrocytes - $3,2 \cdot 10^{12}/l$, Hb- 85 g/l, colour index - 0,78; leukocytes - $5,6 \cdot 10^9/l$, platelets - $210 \cdot 10^9/l$. Smear examination revealed anisocytosis, poikilocytosis and target cells. Reticulocyte rate is 6%. Iron therapy was ineffective. What blood pathology corresponds with the described clinical presentations?

- A. Thalassemia
- B. Enzymopathy
- C. Membranopathy
- D. Sickle-cell anemia
- E. Favism

101. A liquidator of a breakdown at a nuclear power plant who was irradiated complained about vomiting that occurs all of a sudden. What medication should be prescribed?

- A. Metoclopramide
- B. Reserpine
- C. Atropine
- D. Aeron
- E. De-Nol

102. A patient with acute myocardial infarction has been administered heparin

as a part of complex therapy. Some time after heparin injection the patient developed hematuria. What heparin antagonist should be injected in order to manage the complication?

- A. Protamine sulfate
- B. Vicasol
- C. Aminocaproic acid
- D. Neodicumarin
- E. Fibrinogen

103. A 45-year-old patient was admitted to the cardiological department. ECG data: negative *P* wave overlaps *QRS* complex, diastolic interval is prolonged after extrasystole. What type of extrasystole is it?

- A. Atrioventricular
- B. Sinus
- C. Atrial
- D. Ventricular
- E. Bundle-branch

104. A patient complains of hydruria (7 liters per day) and polydipsia. Examination reveals no disorders of carbohydrate metabolism. These abnormalities might be caused by the dysfunction of the following endocrine gland:

- A. Neurohypophysis
- B. Adenohypophysis
- C. Islets of Langerhans (pancreatic islets)
- D. Adrenal cortex
- E. Adrenal medulla

105. Before a surgery a blood sample of a 30-year-old man has been typed. Blood is Rh-positive. Standard serums of such groups as $0\alpha\beta$ (I), $A\beta$ (II), $B\alpha$ (III) didn't activate erythrocyte agglutination reaction. The group of the analyzed blood is:

- A. $0\alpha\beta$ (I)
- B. $A\beta$ (II)
- C. $B\alpha$ (III)
- D. AB (IV)
- E. -

106. Medical examination of a 20-year-old woman revealed a dense encapsulated node 1 cm in diameter that was palpated in the mammary gland. The postoperative biopsy revealed connective tissue overgrowth around the mammary ducts and glandular components of different diameter that didn't make lobules and bore no signs of cellular abnormality. What diagnosis will be made?

- A. Fibroadenoma
- B. Fibroma
- C. Metastatic cancer
- D. Adenoma
- E. Fibrocarcinoma

107. A 38-year-old male patient has been ill with systemic lupus erythematosus for three years. He was diagnosed with diffuse renal affection accompanied by massive edemata and expressive proteinuria. What is the most likely cause of proteinuria development?

- A. Autoimmune renal affection
- B. Aseptic renal affection
- C. Ischemic renal affection
- D. Urinary bladder inflammation
- E. Urinary tracts inflammation

108. A student failed to answer all the questions of examination paper correctly. As a result he blushed, felt hot and lost confidence. What type of arterial hyperemia has developed in this case?

- A. Neurotonic hyperemia
- B. Neuroparalytic hyperemia
- C. Metabolic hyperemia
- D. Pathologic hyperemia
- E. Postishemic hyperemia

109. Acute renal impairment caused death of a bleeding patient. Autopsy revealed enlarged kidneys with a broad pale pink cortical layer expressively demarcated from dark red renal pyramids. Macroscopic examination revealed lack of epithelial nuclei of convoluted tubules, tubulorrhesis, phlebostasis. The cell nuclei of choroid glomus and straight tubules were present. What pathology is it?

- A. Necronephrosis
- B. Infarction
- C. Glomerulonephritis
- D. Pyelonephritis
- E. Nephrosis

110. A female patient consulted a doctor about pain and limited movements in the knee joints. Which of the following nonsteroid anti-inflammatory drugs should be administered taking into consideration that the patient has a history of chronic gastroduodenitis?

- A. Celecoxib
- B. Diclofenac sodium
- C. Promedol
- D. Acetylsalicylic acid
- E. Butadiounum

111. A patient presents with icteritinousness of skin, scleras and mucous membranes. Blood plasma the total bilirubin is increased, stercobilin is increased in feces, urobilin is increased in urine. What type of jaundice is it?

- A. Haemolytic
- B. Gilbert's disease
- C. Parenchymatous
- D. Obturational
- E. Cholestatic

112. Blood plasma of a healthy man contains several dozens of proteins. During an illness new proteins can originate, namely the protein of "acute phase". Select such protein from the listed below:

- A. C-reactive protein
- B. Prothrombin
- C. Fibrinogen
- D. G immunoglobulin
- E. A immunoglobulin

113. A patient working at a pig farm complains about paroxysmal abdominal pain, liquid feces with admixtures of mucus and blood, headache, weakness, fever. Examination of large intestine revealed ulcers from 1 mm up to several cm large, feces contained oval unicellular organisms with cilia. What disease should be suspected?

- A. Balantidiasis
- B. Amebiasis
- C. Toxoplasmosis
- D. Lambliasis
- E. Trichomoniasis

114. During hypersensitivity test a patient got subcutaneous injection of an antigen which caused reddening of skin, edema, pain as a result of histamine action. This biogenic amine is generated as a result of transformation of the following histidine amino acid:

- A. Decarboxylation
- B. Methylation
- C. Phosphorylation
- D. Isomerization
- E. Deamination

115. During fighting a man had a cardiac arrest as a result of a hard blow to the

upper region of anterior abdominal wall. Which of the described mechanisms might have provoked the cardiac arrest?

- A. Parasympathetic unconditioned reflexes
- B. Sympathetic unconditioned reflexes
- C. Parasympathetic conditioned reflexes
- D. Sympathetic conditioned reflexes
- E. Peripheric reflexes

116. There is a severe time restriction for people's staying at a height of over 800 m above the sea level without oxygen bombs. What is the life limiting factor in this case?

- A. Partial oxygen pressure
- B. Ultraviolet intensity
- C. Moisture level
- D. Temperature
- E. Earth gravity

117. A patient with marked pneumofibrosis that developed after infiltrating pulmonary tuberculosis has been diagnosed with respiratory failure. What is its pathogenetic type?

- A. Restrictive
- B. Obstructive
- C. Dysregulatory
- D. Reflex
- E. Apneistic

118. During surgical manipulations a patient has been given novocaine injection for anesthesia. 10 minutes later the patient developed paleness, dyspnea, hypotension. What type of allergic reaction is it?

- A. Anaphylactic immune reaction
- B. Cellulotoxic immune reaction
- C. Aggregate immune reaction
- D. Stimulating immune reaction
- E. Cell-mediated immune reaction

119. A sensitive neural ganglion consists of roundish neurocytes with one extension that divides into axon and dendrite at a some distance from the perikaryon. What are these cells called?

- A. Pseudounipolar
- B. Unipolar
- C. Bipolar
- D. Multipolar
- E. Apolar

120. A patient complained about dizziness, memory impairment, periodical convulsions. It was revealed that these changes were caused by a product of decarboxylation of glutamic acid. Name

this product:

- A. GABA
- B. Pyridoxal phosphate
- C. TDP
- D. ATP
- E. THFA

121. It was found out that some compounds, for instance fungi toxins and some antibiotics can inhibit activity of *RNA*-polymerase. What process will be disturbed in a cell in case of inhibition of this enzyme?

- A. Transcription
- B. Processing
- C. Replication
- D. Translation
- E. Reparation

122. During an experiment the myotatic reflex has been studied in frogs. After extension in a skeletal muscle its reflectory contraction was absent. The reason for it might be a dysfunction of the following receptors:

- A. Muscle spindles
- B. Nociceptors
- C. Articular
- D. Golgi tendon organs
- E. Tactile

123. An adult man presents with systemic arterial pressure drop from 120/70 to 90/50 mm Hg. This resulted in reflex vasoconstriction. Vasoconstriction will be minimal in the following organ:

- A. Heart
- B. Skin
- C. Bowels
- D. Skeletal muscles
- E. Liver

124. A culture of monkey cells (Vero) and a group of mouse sucklings were infected with an inoculum taken from a child with provisional diagnosis "enterovirus infection". There was no cytopathic effect on the cell culture but mouse sucklings died. What enteric viruses might have caused disease of this child?

- A. Coxsackie A
- B. Coxsackie B
- C. ECHO virus
- D. Polioviruses
- E. Unclassified enteric viruses 68-71

125. An electron microphotography of a fragment of proper gastric gland shows

a big irregular round-shaped cell. There are a lot of intracellular tubules and mitochondria in the cytoplasm. Specify this cell:

- A. Parietal cell
- B. Principal cell
- C. Undifferentiated cell
- D. Mucous cell
- E. Endocrine cell

126. Blood count of an athlete is as follows: erythrocytes - $5,5 \cdot 10^{12}/l$, Hb-180 g/l, leukocytes - $7 \cdot 10^9/l$, neutrophils - 64%, basophils - 0,5%, eosinophils - 0,5%, monocytes - 8%, lymphocytes - 27%. First of all, such results indicate the stimulation of:

- A. Erythropoiesis
- B. Leukopoiesis
- C. Lymphopoiesis
- D. Granulocytopoiesis
- E. Immunogenesis

127. A patient died from cardiopulmonary decompensation. Histological examination revealed diffused pulmonary affection along with interstitial edema, infiltration of tissue by lymphocytes, macrophages, plasmocytes; pulmonary fibrosis, panacinar emphysema. What is the most likely diagnosis?

- A. Fibrosing alveolitis
- B. Chronic bronchitis
- C. Bronchopneumonia
- D. Pulmonary atelectasis
- E. Bronchial asthma

128. If a man has an attack of bronchi-ospasm it is necessary to reduce the effect of vagus on smooth muscles of bronchi. What membrane cytoceptors should be blocked for this purpose?

- A. *M*-cholinoreceptors
- B. *N*-cholinoreceptors
- C. α -adrenoreceptors
- D. β -adrenoreceptors
- E. α - and β -adrenoreceptors

129. A male patient has been diagnosed with gastric ulcer. Bacteriological examination of biopsy material from the affected part of stomach revealed small colonies of gram-negative, oxide reductase-positive flexibacteria that grew on the chocolate agar on the fifth day. Which of the following microorganisms is the most likely causative agent?

- A. *Helicobacter pylori*
- B. *Campilobacter jejuni*
- C. *Campilobacter fetus*
- D. *Mycoplasma hominis*
- E. *Chlamydia trachomatis*

130. There are several groups of molecular mechanisms playing important part in pathogenesis of insult to cells which contributes to the pathology development. What processes are stimulated by proteinic damage mechanisms?

- A. Enzyme inhibition
- B. Lipid peroxidation
- C. Phospholipase activation
- D. Osmotic membrane distension
- E. Acidosis

131. A patient has been diagnosed with a compression fracture of a lumbar vertebra. As a result he has a considerable increase in curvature of the lumbar lordosis. Which ligament damage can induce such changes in the spine curvature?

- A. Anterior longitudinal ligament
- B. Posterior longitudinal ligament
- C. Yellow ligament
- D. Iliolumbar ligament
- E. Interspinous ligament

132. A 49-year-old patient with croupous pneumonia died from pneumococcal septicemia. Autopsy revealed up to 700 ml of turbid greenish-yellow foul-smelling liquid in the left pleural cavity. The pleural leaflets were dull and plethoric. What form of pleural inflammation is it?

- A. Empyema
- B. Chronic abscess
- C. Acute abscess
- D. Phlegmon
- E. Fibrinous inflammation

133. A 35-year-old man developed acute heart failure while running for a long time. What changes in ionic composition can be observed in the cardiac muscle?

- A. Accumulation of Na^+ and Ca^{2+} ions in the myocardium cells
- B. Accumulation of K^+ and Mg^{2+} ions in the myocardium cells
- C. Reduction of Na^+ and Ca^{2+} ions in the myocardium cells
- D. Reduction of K^+ and Mg^{2+} ions in the extracellular space
- E. Reduction of Na^+ and Ca^{2+} ions in the extracellular space

134. A child with a history of frequent angine and pharyngitis has been diagnosed with lymphadenopathy and splenomegaly. His appearance is characterised by pastosity and paleness, muscular tissue is poorly developed. Lymphocytosis is present. What kind of diathesis is it?

- A. Lymphohypoplastic diathesis
- B. Exudative diathesis
- C. Gouty diathesis
- D. Asthenic diathesis
- E. Hemorrhagic diathesis

135. In response to a change in body position from horizontal to vertical blood circulation system develops reflexory pressor reaction. Which of the following is its compulsory component?

- A. Systemic constriction of the venous vessels
- B. Systemic dilatation of the arterial resistive vessels
- C. Decrease in the circulating blood volume
- D. Increase in the heart rate
- E. Weakening of the pumping ability of heart

136. After an immunoassay a child was diagnosed with immunodeficiency of humoral immunity. What is the reason for the primary immunodeficiency development in the child?

- A. Hereditary abnormality of immune system
- B. Embryonal development abnormalities
- C. Pathometabolism in mother's organism
- D. Immune responsiveness and resistance disorders
- E. Toxic damage of B-lymphocytes

137. Life cycle of a cell includes the process of DNA autoreplication. As a result of it monochromatid chromosomes turn into bichromatid ones. What period of cell cycle does this phenomenon fall into?

- A. *S*
- B. *G_o*
- C. *G₁*
- D. *G₂*
- E. *M*

138. Examination of a 12-year-old boy with developmental lag revealed achondroplasia: disproportional constitution with evident shortening of upper and lower limbs as a result of growth disorder of epiphyseal cartilages of long tubal bones. This disease is:

- A. Inherited, dominant
- B. Inherited, recessive
- C. Inherited, sex-linked
- D. Congenital
- E. Acquired

139. 2 days after labour a woman developed shock along with DIC syndrome that caused her death. Autopsy revealed purulent endomyometritis, regional purulent lymphangitis, lymphadenitis and purulent thrombophlebitis. There were also dystrophic alterations and interstitial inflammation of parenchymal organs. What is the most likely diagnosis?

- A. Septicemia
- B. Syphilis
- C. Tuberculosis of genital organs
- D. Chorioadenoma destruens
- E. Hydatid mole

140. After a craniocerebral trauma a patient lost the ability to execute learned purposeful movements (apraxia). The injury is most likely localized in the following region of the cerebral cortex:

- A. *Gyrus supramarginalis*
- B. *Gyrus angularis*
- C. *Gyrus paracentralis*
- D. *Gyrus lingualis*
- E. *Gyrus parahippocampalis*

141. Tissue inositol triphosphates are generated as a result of the phosphatidylinositol diphosphate hydrolysis and act as secondary agents (mediators) in the mechanism of hormone action. Their effect in cells is directed at:

- A. Calcium ion liberation from cellular depot
- B. Adenylate cyclase activation
- C. Protein kinase A activation
- D. Phosphodiesterase inhibition
- E. Protein kinase A inhibition

142. A patient with coronary disease and arrhythmia has been administered a drug that blocks potassium channels and prolongs the action potential. What drug is it?

- A. Amiodarone
- B. Corglyconum
- C. Nitroglycerin
- D. Dobutamine
- E. Lisinopril

143. A patient takes digoxin for cardiac insufficiency. What diuretic may increase digoxin toxicity due to the intensified excretion of K^+ ions?

- A. Hydrochlorothiazide
- B. Spironolactone
- C. Panangine
- D. Siliborum
- E. Lisinopril

144. During starvation muscle proteins break up into free amino acids. These compounds will be the most probably involved into the following process:

- A. Gluconeogenesis in liver
- B. Gluconeogenesis in muscles
- C. Synthesis of higher fatty acids
- D. Glycogenolysis
- E. Decarboxylation

145. A female patient consulted a doctor about a sense of epigastric discomfort, nausea and anorexia. A duodenal content analysis revealed lamblia. What drug should be prescribed?

- A. Metronidazole
- B. Chingamin
- C. Rifampicin
- D. Isoniazid
- E. Acyclovir

146. A 28-year-old female patient consulted a gynecologist about sterility. Examination revealed underdeveloped ovaries and uterus, irregular menstrual cycle. Analysis of the sex chromatin revealed 2 Barr's bodies in most somatic cells. What chromosome disease is most likely?

- A. Triple X syndrome
- B. Edwards' syndrome
- C. Patau's syndrome
- D. Klinefelter's syndrome
- E. Turner's syndrome

147. A 1-year-old baby has been hospitalised for body and limbs lesions. Exami-

nation revealed carnitine deficiency in the child's muscles. A biochemical reason for this pathology is the disorder of:

- A. Transport of fatty acids to mitochondria
- B. Regulation of Ca^{2+} rate in mitochondria
- C. Substrate-linked phosphorylation
- D. Utilization of lactic acid
- E. Oxidative phosphorylation

148. During anesthetization a patient presented with symptoms of tonus increase of parasympathetic nervous system such as hypersalivation and laryngospasm. What drug could have prevented these undesirable effects?

- A. Atropine sulphate
- B. Adrenaline hydrochloride
- C. Neostigmine
- D. Analgin
- E. Pyracetam

149. Some students developed myodynia after continuous physical activity during physical education. The reason for such condition was accumulation of lactic acid in the skeletal muscles. It was generated in the students' bodies after activation of the following process:

- A. Glycolysis
- B. Gluconeogenesis
- C. Pentose-phosphate cycle
- D. Lipolysis
- E. Glycogeny

150. A newborn develops dyspepsia after the milk feeding. When the milk is substituted by the glucose solution the dyspepsia symptoms disappear. The newborn has the subnormal activity of the following enzyme:

- A. Lactase
- B. Invertase
- C. Maltase
- D. Amylase
- E. Isomaltase

151. A doctor asked a patient to breath out fully after taking a normal breath. What muscles contract during such exhalation?

- A. Abdominal muscles
- B. External intercostal muscles
- C. Diaphragm
- D. Trapezius muscles
- E. Pectoral muscles

152. On an electron micrograph a scientist has identified a structure formed

by eight histone proteins and a part of DNA molecule which makes about 1,75 revolutions around the molecules. Which structure has been identified?

- A. Nucleosoma
- B. Elementary fibril
- C. Half-chromatid
- D. Chromatid
- E. Chromosome

153. A patient with massive burns developed acute renal insufficiency characterized by a significant and rapid deceleration of glomerular filtration. What is the mechanism of its development?

- A. Reduction of renal blood flow
- B. Damage of glomerular filter
- C. Reduction of functioning nephron number
- D. Rise of pressure of tubular fluid
- E. Renal artery embolism

154. A three-year-old child has had marked diarrhea for three days. Immune electron microscopy of his excrements revealed bilayer pseudocovered capsid viruses that looked like small spoke wheels. What viruses have been revealed?

- A. Rotaviruses
- B. Coxsackie viruses
- C. ECHO viruses
- D. Coronaviruses
- E. Reoviruses

155. A male patient has fever and enanthesis. As a result of the examination involving serological tests he has been diagnosed with fasciola hepatica. It was found out that the patient had been infected through raw river water. Which stage of fasciola life cycle is invasive for humans?

- A. Adolescaria
- B. Metacercaria
- C. Ovum
- D. Miracidium
- E. Cysticercus

156. A patient with high-titer antinuclear antibodies died from progressing renal impairment. Autopsy revealed mesangioliferative glomerulonephritis and abacterial polypous endocarditis. There was periarterial bulbar sclerosis in spleen and productive proliferative vasculitis in skin. What is the most likely diagnosis?

- A. Systemic lupus erythematosus
- B. Nephrotic syndrome
- C. Rheumatism
- D. Dermatomyositis
- E. Periarteritis nodosa

157. Electronic microphotography of pulmonary alveole's wall presents a big cell. Its cytoplasm has a lot of mitochondria, developed Golgi apparatus, osmiophil lamellated corpuscles. What is the main function of this cell?

- A. It produces surfactant
- B. It is a component of blood-air barrier
- C. It warms the air
- D. It purifies the air
- E. It absorbs microorganisms

158. A patient has food poisoning. Laboratory analysis revealed a culture of anaerobic gram-positive spore-forming bacteria. What is the most likely kind of the isolated causative agent?

- A. *C. perfringens*
- B. *Proteus vulgaris*
- C. *P. mirabilis*
- D. *Vibrio parahemolyticus*
- E. *Esherichia coli*

159. An animal has an increased tonus of extensor muscles. This the result of intensified information transmission to the motoneurons of the spinal cord through the following descending pathways:

- A. Vestibulospinal
- B. Medial corticospinal
- C. Reticulospinal
- D. Rubrospinal
- E. Lateral corticospinal

160. A 70-year-old male patient died from acute coronary insufficiency. He had knee joint swelling, gonycampsis and gonalgia during his lifetime. Pathomorphologic examination of the deformed joints and synovial membranes revealed membrane hyperaemia with multiple perivascular inflammatory infiltrations made by lymphocytes, plasmocytes and macrophagocytes. There was an accumulation of organized fibrin covering some areas of synovium membrane and looking like rice grains in the articular liquid. What is the most likely diagnosis?

- A. Atrophic arthritis
- B. Periarteritis nodosa
- C. Ankylosing spondylitis
- D. Tuberculous arthritis
- E. Deforming arthrosis

161. A man having a hearing loss after a head trauma was delivered to the neurosurgery department. The cause of the hearing loss might be the damage of the following lobe of cerebral cortex:

- A. Temporal
- B. Postcentral gyrus
- C. Parietal
- D. Occipital
- E. Frontal

162. A pregnant woman was registered in an antenatal clinic and underwent complex examination for a number of infections. Blood serum contained *IgM* to the rubella virus. What is this result indicative of?

- A. Of primary infection
- B. Of a chronic process
- C. The woman is healthy
- D. Of exacerbation of a chronic disease
- E. Of recurring infection with rubella virus

163. A patient with tuberculosis died from progressing cardiopulmonary decompensation. Autopsy in the region of the right lung apex revealed a cavity 5 cm in diameter communicating with lumen of a segmental bronchus. On the inside cavity walls are covered with caseous masses with epithelioid and Langhans cells beneath them. What morphological form of tuberculosis is it?

- A. Acute cavernous tuberculosis
- B. Tuberculoma
- C. Caseous pneumonia
- D. Infiltrative tuberculosis
- E. Acute focal tuberculosis

164. Vomiting matters of a patient suspected of having cholera were delivered to the bacteriological laboratory. The material was used for preparing a "hanging drop"specimen. What type of microscopy will be applied for identification of the causative agent by its mobility?

- A. Phase-contrast microscopy
- B. Electron microscopy
- C. Immune and electron microscopy
- D. Fluorescence microscopy
- E. Immersion microscopy

165. A patient with enteritis accompanied

by massive diarrhea has low water rate in the extracellular space, high water rate inside the cells and low blood osmolality. What is such disturbance of water-electrolytic metabolism called?

- A. Hypo-osmolar hypohydration
- B. Hyperosmolar hypohydration
- C. Osmolar hypohydration
- D. Hypo-osmolar hyperhydration
- E. Hyperosmolar hyperhydration

166. Examination of a 6-month-old child revealed a delay in closure of the occipital fontanelle. When should it normally close?

- A. Until 3 months
- B. Before the child is born
- C. Until 6 months
- D. Until the end of the first year of life
- E. Until the end of the second year of life

167. A newborn child was found to have reduced intensity of sucking, frequent vomiting, hypotonia. Urine and blood exhibit increased concentration of citrulline. What metabolic process is disturbed?

- A. Ornithinic cycle
- B. Tricarboxylic acid cycle
- C. Glycolysis
- D. Glyconeogenesis
- E. Cori cycle

168. A male patient has been diagnosed with acute radiation disease. Laboratory examination revealed a considerable reduction of platelet serotonin level. The likely cause of platelet serotonin reduction is the disturbed metabolism of the following substance:

- A. 5-oxytryptofane
- B. Tyrosine
- C. Histidine
- D. Phenylalanine
- E. Serine

169. In course of a conditional experiment the development of mesenchyma cells was completely inhibited. Development of the following muscular tissue will be disturbed:

- A. Smooth muscular tissue
- B. Neural muscular tissue
- C. Epidermal muscular tissue
- D. Cardiac muscular tissue
- E. Skeletal muscular tissue

170. A histologic specimen shows an organ's parenchyma which is presented

by lymphoid tissue making some lymph nodes. The nodes are located diffusively and contain a central artery. What anatomic formation might have such morphological structure?

- A. Spleen
- B. Red bone marrow
- C. Thymus
- D. Tonsil
- E. Lymph node

171. A victim with a head trauma in the temporal region has been diagnosed with epidural hematoma. What artery is most likely to be damaged?

- A. Medial membranous artery
- B. Medial cerebral artery
- C. Superficial temporal artery
- D. Anterior membranous artery
- E. Posterior auricular artery

172. A child has mental and physical retardation, grave damage of internal connective tissue. Urine analysis reveals keratan sulfates. What metabolic process is disturbed?

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

173. A tooth extraction in a patient with chronic persistent hepatitis was complicated with prolonged hemorrhage. What is the reason for the haemorrhagic syndrome?

- A. Decrease in thrombin production
- B. Increase in thromboplastin production
- C. Decrease in fibrin production
- D. Increase in fibrinogen synthesis
- E. Fibrinolysis intensification

174. Sex chromosomes of a woman didn't separate and move to the opposite poles of a cell during gametogenesis (meiosis). The ovum was impregnated with a normal spermatozoon. Which chromosomal disease can be found in her child?

- A. Turner's syndrome
- B. Down's syndrome
- C. Patau's syndrome
- D. Edwards' syndrome
- E. Cat cry syndrome

175. A female patient was administered loratadine for allergic cheilitis treatment. What is the mechanism of the drug's acti-

on?

- A. It blocks the activity of H_1 histamine receptors
- B. It blocks the adrenergic receptors
- C. It stimulates the activity of monoamine oxidase
- D. It inhibits the activity of Na,K-ATP
- E. It inhibits the activity of choline esterase

176. Ultramicroscopical examination of "dark" hepatocyte population in the cell cytoplasm detected a developed granular endoplasmic reticulum. What function has this organelle in these cells?

- A. Synthesis of blood plasma proteins
- B. Carbohydrate synthesis
- C. Deintoxicative function
- D. Bile production
- E. Calcium ion depositing

177. A doctor prescribed a cephalosporin antibiotic to the patient after appendectomy for infection prevention. Antimicrobial activity of this group of antibiotics is based upon the disturbance of the following process:

- A. Microbial wall formation
- B. Nucleic acid synthesis
- C. Ribosome protein synthesis
- D. Energy metabolism
- E. Choline esterase block

178. A patient underwent an extraction of a part of a CNS structures by medical indications. As a result of the extraction the patient developed atony, astasia, intention tremor, ataxy and adiadochokinesis. Which part of CNS structure had been extracted?

- A. Cerebellum
- B. Amygdaloid corpus
- C. Hippocamp
- D. Basal ganglions
- E. Limbic system

179. A patient has been diagnosed with influenza. His condition became drastically worse after taking antipyretic drugs. His consciousness is confused, AP is 80/50 mm Hg, Ps is 140/m, body temperature dropped down to 35, 8°C. What complication developed in this patient?

- A. Collapse
- B. Hyperthermia
- C. Hypovolemia
- D. Acidosis
- E. Alkalosis

180. A patient consulted a doctor about loss of taste sensitivity on the tongue root. The doctor revealed that it is caused by nerve affection. Which nerve is it?

- A. Glossopharyngeal
- B. Vagus nerve
- C. Facial nerve
- D. Superlaryngeal nerve
- E. Trigeminal nerve

181. Which muscle contraction will be observed in the upper extremity during holding (but not moving) a load in a certain position?

- A. Isometric
- B. Isotonic
- C. Auxotonic
- D. Concentric
- E. Excentric

182. An older woman has been hospitalised for acute pain and edema of the right hip joint that appered after a fall. Objectively: the hip is adduced inwards, hip joint movements are impaired. The patient is most likely to have a fracture of the following bone or bone part:

- A. Femoral neck
- B. Shaft of femur
- C. Condyle of femur
- D. Pubic bone
- E. Ischial bone

183. A 45-year-old woman has breast cancer. Her left arm has symptoms of lymphatic system insufficiency - limb edema, lymph node enlargement. What form of lymphatic circulation insufficiency is it?

- A. Mechanic insufficiency
- B. Dynamic insufficiency
- C. Resorption insufficiency
- D. Combined insufficiency
- E. -

184. Study of conversion of a food colouring agent revealed that neutralization of this xenobiotic takes place only in one phase - microsomal oxydation. Name a component of this phase:

- A. Cytochrome P-450
- B. Cytochrome B
- C. Cytochrome C
- D. Cytochrome A
- E. Cytochrome oxidase

185. While performing an inguinal canal operation on account of hernia a surgeon

damaged the canal's contents. What exactly was damaged?

- A. *Funiculus spermaticus*
- B. *Urachus*
- C. *Lig. teres uteri*
- D. *Lig. inguinale*
- E. -

186. A patient with myocardial infarction was admitted to the cardiological department. For pain relief it was decided to potentiate fentanyl action with a neuroleptic. Which of the following neuroleptics is the most suitable for neuroleptanalgesia?

- A. Droperidol
- B. Aminazine
- C. Triftazine
- D. Haloperidol
- E. Sulpiride

187. A 25-year-old man has spent a long time in the sun under high air humidity. As a result of it his body temperature rose up to 39°C. What pathological process is it?

- A. Hyperthermia
- B. Infectious fever
- C. Hypothermia
- D. Noninfectious fever
- E. Burn disease

188. A 26-year-old man is in the torpid shock phase as a result of a car accident. In blood: $3,2 \cdot 10^9/l$. What is the leading mechanism of leukopenia development?

- A. Redistribution of leukocytes in bloodstream
- B. Leikopoiesis inhibition
- C. Disturbed going out of mature leukocytes from the marrow into the blood
- D. Lysis of leukocytes in the blood-forming organs
- E. Intensified elimination of leukocytes from the organism

189. A patient consulted a doctor about a sensation of imbalance which appeared after a trauma. Which nerve is damaged?

- A. Vestibulocochlear nerve
- B. Trigeminal nerve
- C. Facial nerve
- D. Intermediate nerve
- E. Vagus nerve

190. An alcoholic has alcoholic psychosis with evident psychomotor agitation. What neuroleptic drug should be administered

for emergency care?

- A. Aminazine
- B. Diazepam
- C. Sodium bromide
- D. Reserpine
- E. Halothane

191. A patient who has been treated in a neural clinic and has been taking a sedative for a long time got the following complication: cough, rhinitis, epiphora. What drug caused these disturbances?

- A. Sodium bromide
- B. Diazepam
- C. Valerian
- D. Phenazepam
- E. Reserpine

192. The liver puncture biopsy of a patient with hepatocellular insufficiency revealed hydropic and ballooning degeneration of hepatocytes, necrosis of certain cells, presence of Kaunsilmen's bodies. Portal and lobular stroma were infiltrated mostly with lymphocytes and macrophages as well as with a small number of polymorphonuclear lymphocytes. What is the most likely diagnosis?

- A. Acute viral hepatitis
- B. Chronic persistent hepatitis
- C. Chronic aggressive hepatitis
- D. Autoimmune hepatitis
- E. Alcoholic hepatitis

193. In order to accelerate healing of a radiation ulcer a vitamin drug was administered. What drug is it?

- A. Retinol acetate
- B. Retabolil
- C. Prednisolone
- D. Levamisole
- E. Methyluracil

194. After inoculation of the material obtained from the pharynx of an angina patient onto the blood-tellurite agar, grey colonies could be observed. They were 4-5 mm in diameter, radially striated (in form of rosettes). Microscopical examination revealed gram-positive bacilli with clavate swollen ends arranged in form of wide-spread fingers. Identify these microorganisms:

- A. Diphtheria corynebacteria
- B. Clostridium botulinum
- C. Diphtheroids
- D. Streptococci
- E. Streptobacilli

195. Cytogenetic examination of a patient with reproductive dysfunction revealed normal karyotype $46 XY$ in some cells, but most cells have karyotype of Klinefelter's syndrome - $47 XXY$. Such cell heterogeneity is called:

- A. Mosaicism
- B. Inversion
- C. Transposition
- D. Duplication
- E. Monomorphism

196. A patient presents with acne and inflammatory alterations of facial skin. Microscopical investigation of lesion foci has revealed live arthropods sized 0,2-0,5 mm. They have prolate vermiform form and four pairs of thin short limbs located in the middle part of the body. The revealed arthropods cause:

- A. Demodicosis
- B. Scabies
- C. Pediculosis
- D. Phthiriasis
- E. Dermamyiasis

197. Surgical approach to the thyroid gland from the transverse (collar) approach involves opening of interaponeurotic suprasternal space. What anatomic structure localized in this space is dangerous to be damaged?

- A. Jugular venous arch
- B. External jugular vein
- C. Subclavicular vein
- D. Inferior thyroid artery
- E. Superior thyroid artery

198. An injured person was delivered to the hospital with a penetrating wound in the left lateral region of abdomen. What part of the large intestine is most likely damaged?

- A. *Colon descendens*
- B. *Colon ascendens*
- C. *Colon transverses*
- D. *Caecum*
- E. *Rectum*

199. A 4-year-old child presents with general weakness, sore throat and deglutitive problem. After his examination a doctor suspected diphtheria and sent the material to the bacteriological laboratory. In order to determine the diphtheria causative agent the material should be inoculated into the following differential diagnostic medium:

- A. Blood tellurite agar
- B. Endo's agar
- C. Ploskyrev's agar
- D. Sabouraud's agar
- E. Levenshtein-Yessen agar

200. Examination of the anterior abdominal wall of a pregnant woman revealed a tumour-like formation that arose on the spot of a tumour that was removed two years ago. The neoplasm was well-defined, dense, 2x1 cm large. Histological examination revealed that the tumour was composed of differentiated connective tissue with prevailing collagen fibres. What tumour might be suspected?

- A. Desmoid
- B. Lipoma
- C. Fibrosarcoma
- D. Hibernoma
- E. Leiomyoma