

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. A man suffering from a hereditary disease married a healthy woman. They got 5 children, three girls and two boys. All the girls inherited their father's disease. What is the type of the disease inheritance?

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

3. An electronic microphotograph shows a macrophagic cell with erythrocytes at different stages of differentiation located along its processes. This is the cell of the following organ:

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

4. 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

5. Examination of a patient revealed a dense, movable skin tumour that is standing out distinctly from the surrounding tissues. Its section is found to be white and composed of fibrous tissue. Microscopic examination revealed interlacing collagen fibers and few cells. What tumour is it?

- A. Fibroma
- B. Myoma
- C. Histiocytoma
- D. Dermatofibroma
- E. Desmoid

6. A patient underwent a surgery for excision of a cyst on pancreas. After this he developed haemorrhagic syndrome with apparent disorder of blood coagulation. Development of this complication can be explained by:

- A. Activation of fibrinolytic system
- B. Insufficient fibrin production
- C. Reduced number of thrombocytes
- D. Activation of anticoagulation system
- E. Activation of Christmas factor

7. A mother consulted a doctor about her 5-year-old child who develops erythemas, vesicular rash and skin itch under the influence of sun. Laboratory studies revealed decreased iron concentration in the blood serum, increased uroporphyrinogen I excretion with the urine. What is the most likely inherited pathology in this child?

- A. Erythropoietic porphyria
- B. Methemoglobinemia
- C. Hepatic porphyria
- D. Coproporphyrria
- E. Intermittent porphyria

8. A baby refuses the breast, he is anxious, presents with arrhythmic respiration. The urine smells of "brewer's yeast" or "maple syrup". This pathology was caused by the inherited defect of the following enzyme:

- A. Dehydrogenase of branched-chain alpha-keto acids
- B. Glucose 6-phosphate dehydrogenase
- C. Glycerol kinase
- D. Aspartate aminotransferase
- E. UDP-glucuronil transferase

9. While studying a microslide obtained from the punctuate of a regional lymph node and stained by Romanovsky-Giemsa method a physician revealed some light-pink thin microorganisms with 12-14 regular spiral coils and pointed ends, up to 10-13 micrometer long. This might be the causative agent of the following disease:

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

10. 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

11. While examining a patient an otolaryngologist noticed hyperaemia and significantly edematous tonsils with a grayish film upon them. Microscopical examination of this film revealed some gram-positive bacilli placed at an angle with each other. What disease might be suspected?

- A. Diphtheria
- B. Angina
- C. Scarlet fever
- D. Meningococcal nasopharyngitis
- E. Epidemic parotitis

12. A 38-year-old patient with an uterine haemorrhage lasting for 2 days was delivered to the admission ward. Which of the following will be revealed in the patient's blood?

- A. Decrease in the haematocrite index
- B. Eosinophilia
- C. Deceleration in ESR
- D. Leukocytosis
- E. Increase in the colour index

13. After a hypertonic crisis a patient presents with lacking spontaneous movements in his right arm and leg, muscle tone of these extremities is increased. What type of motor dysfunction has developed in this case?

- A. Central paralysis
- B. Peripheral paralysis
- C. Peripheral paresis
- D. Reflectory paresis
- E. Central paresis

14. A patient's organism has decreased concentration of magnesium ions that are necessary for attachment of ribosomes

to the granular endoplasmatic reticulum. It is known that this causes protein biosynthesis disturbance. What stage of protein biosynthesis will be disturbed?

- A. Translation
- B. Transcription
- C. Replication
- D. Amino acid activation
- E. Termination

15. A patient suffering from stomach ulcer has been treated with an antacid drug almagel. 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

16. A 70-year-old patient suffers from atherosclerosis complicated by the lower limb thrombosis that has caused gangrene on his left toes. What is the most likely cause of the thrombosis origin?

- A. Thrombocyte adhesion
- B. Prothrombinase activation
- C. Transformation of prothrombin into thrombin
- D. Transformation of fibrinogen into fibrin
- E. Impaired heparin synthesis

17. 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

18. Bacteriological examination of purulent discharges from the urethra revealed gram-negative bacteria looking like coffee beans. They were localized in the leukocytes and could decompose glucose and maltose to acid. These are the causative agents of the following disease:

- A. Gonorrhoea
- B. Syphilis
- C. Veneral lymphogranulomatosis
- D. Soft chancre
- E. Melioidosis

19. 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

20. A 62-year-old female patient has developed a cataract (lenticular opacity) secondary to the diabetes mellitus. What type of protein modification is observed in case of diabetic cataract?

- A. Glycosylation
- B. Phosphorylation
- C. ADP-ribosylation
- D. Methylation
- E. Limited proteolysis

21. Examination of a 2-year-old child revealed physical developmental lag, the child often has pneumonias. The child was diagnosed with nonclosure of ductus arteriosus. Haemodynamics disorder was caused by the intercommunication of the following vessels:

- A. Aorta and pulmonary trunk
- B. Pulmonary trunk and pulmonary veins
- C. Superior cava and aorta
- D. Superior cava and pulmonary trunk
- E. Aorta and pulmonary veins

22. The temperature of the ambient environment is  $38^{\circ}\text{C}$  and relative air humidity is 50%. What ways of heat emission provide maintaining a constant temperature of the human body?

- A. Evaporation
- B. Radiation
- C. Heat conduction
- D. Convection
- E. Convection and conduction

23. A married couple consulted a specialist at the genetic consultation about probability of having children with hemophilia. Both spouses are healthy, but the wife's father has hemophilia. In this

family hemophilia may be passed to:

- A. Half of sons
- B. Both sons and daughters
- C. Daughters only
- D. Half of daughters
- E. All the children

24. 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

25. A female patient consulted a physician about digestive disorder, extended abdominal pain. Examination revealed drastic decrease in hemoglobin concentration. It is known from the anamnesis that while living in the Far East the patient used to eat freshly-salted caviar. Some relatives living with her had the similar condition. What is the most likely diagnosis?

- A. Diphyllbothriasis
- B. Echinococcosis
- C. Teniasis
- D. Trichiniasis
- E. Ascariasis

26. A man has normal sensitivity of his finger skin, however he doesn't sense his wedding ring around the finger. What process induced by wearing of the ring has caused this phenomenon?

- A. Receptor adaptation
- B. Development of the fibrous tissue
- C. Abnormality of the epidermis structure
- D. Impaired circulation
- E. Abnormality of the receptor structure

27. It is necessary to take the cerebrospinal fluid from a patient with suspected inflammation of brain tunics. Diagnostic puncture was performed between the arches of the lumbar vertebrae. During the puncture the needle went through the following ligament:

- A. Yellow (flaval)
- B. Iliolumbar
- C. Anterior longitudinal
- D. Posterior longitudinal
- E. Intertransverse

**28.** ECG study showed that the *T*-waves were positive in the standard extremity leads, their amplitude and duration were normal. The right conclusion would be that the following process runs normally in the heart ventricles:

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

**29.** A patient has an increased pyruvate concentration in blood. A large amount of it is excreted with the urine. What vitamin is lacking in this patient?

- A.** *B*<sub>1</sub>
- B.** *E*
- C.** *B*<sub>3</sub>
- D.** *B*<sub>6</sub>
- E.** *B*<sub>2</sub>

**30.** 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

**31.** Study of bacteriological sputum specimens stained by the Ziel-Neelsen method revealed some bright-red acid-resistant bacilli that were found in groups or singularly. When inoculated onto the nutrient media, the signs of their growth show up on the 10-15 day. These bacteria relate to the following family:

- A.** *Micobacterium tuberculosis*
- B.** *Yersinia pseudotuberculosis*
- C.** *Histoplasma dubrosii*
- D.** *Klebsiella rhinoscleromatis*
- E.** *Coxiella burnettii*

**32.** A patient with high rate of obesity was advised to use carnitine as a food additive in order to enhance "fat burning". What is the role of carnitine in the process of fat oxidation?

- A.** Transport of FFA (free fatty acids) from cytosol to the mitochondria
- B.** Transport of FFA from fat depots to the tissues
- C.** It takes part in one of reactions of FFA beta-oxidation
- D.** FFA activation
- E.** Activation of intracellular lipolysis

**33.** In a 2-year-old child with catarrhal presentations and skin rash a pediatrician suspected scarlet fever. The child was given intracutaneously a small dose of serum antibody to the streptococcal erythrogenic toxin; on the site of injection the rash disappeared. What do the reaction results mean?

- A.** The clinical diagnosis was confirmed
- B.** The child has hypersensitivity to the erythrogenic toxin
- C.** The disease wasn't caused by haemolytic streptococcus
- D.** The whole serum dose may be injected intravenously
- E.** The child has very weak immune system

**34.** A patient has a transversal laceration in the spinal cord. What respiratory changes will result from this?

- A.** Respiration will present no significant changes
- B.** Respiration will stop
- C.** Respiration will become less frequent
- D.** Respiration will become deeper
- E.** Respiration will become more frequent

**35.** A female patient suffering from bronchial asthma had got a viral infection that provoked status asthmaticus with fatal outcome. Histological examination of lungs revealed spasm and edema of bronchioles, apparent infiltration of their walls with lymphocytes, eosinophils and other leukocytes; labrocyte degranulation. What mechanism of hypersensitivity underlies the described alterations?

- A.** Reagin reaction
- B.** Inflammatory
- C.** Autoimmune
- D.** Immune complex
- E.** Immune cytolysis

**36.** In the perianal folds of a 5-year-old girl her mother has found some white "worms" that caused itch and anxiety in the child. The "worms" were sent to the laboratory. During examination the physician saw white filiform helminths 0,5-1 cm long, with pointed ends, some helminths had twisted ends. What is the most likely

diagnosis?

- A. Enterobiasis
- B. Diphyllbothriasis
- C. Teniasis
- D. Ascariidiasis
- E. Opisthorchiasis

37. Examination of a 27-year-old patient revealed pathological changes in liver and brain. Blood plasma analysis revealed an abrupt decrease in the copper concentration, urine analysis revealed an increased copper concentration. The patient was diagnosed with Wilson's degeneration. To confirm the diagnosis it is necessary to study the activity of the following enzyme in blood serum:

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

38. A patient complains about dyspnea provoked by the physical activity. Clinical examination revealed anaemia and presence of the paraprotein in the zone of gamma-globulins. To confirm the myeloma diagnosis it is necessary to determine the following index in the patient's urine:

- A. Bence Jones protein
- B. Bilirubin
- C. Haemoglobin
- D. Ceruloplasmin
- E. Antitrypsin

39. After a serious psycho-emotional stress a 45-year-old patient suddenly felt constricting heart pain irradiating to the left arm, neck and left scapula. His face turned pale, the cold sweat stood out on it. The pain attack was stopped with nitroglycerine. What process has developed in this patient?

- A. Stenocardia
- B. Myocardial infarction
- C. Stroke
- D. Psychogenic shock
- E. Stomach ulcer perforation

40. A 62-year-old female patient complains about frequent pains in the region of thorax and vertebral column, rib fractures. A physician suspected myelomatosis (plasmocytoma). Which of the following laboratory indices will be of the greatest diagnostic importance?

- A. Paraproteinemia
- B. Hyperalbuminemia
- C. Proteinuria
- D. Hypoglobulinemia
- E. Hypoproteinemia

41. An 8-year-old child was admitted to the infectious department with fever (up to 38°C) and punctuate bright-red skin rash. The child was diagnosed as having scarlet fever. Objectively: mucous membrane of pharynx is apparently hyperaemic and edematic, the tonsils are enlarged and have dull yellowish-grey foci with some black areas. What inflammation is the reason for the pharynx alterations?

- A. Purulent necrotic
- B. Fibrinous
- C. Haemorrhagic
- D. Serous
- E. Catarrhal

42. Nappies of a newborn have dark spots being the evidence of homogentisic acid formation. This is caused by the metabolic disorder of the following substance:

- A. Tyrosine
- B. Galactose
- C. Methionine
- D. Cholesterol
- E. Tryptophan

43. A histological specimen presents a receptor zone of a sensoepithelial sense organ. Cells of this zone are placed upon the basal membrane and include the following types: external and internal receptor cells, external and internal phalangeal cell, stem cells, external limiting cells and external supporting cell. The described receptor zone belongs to the following sense organ:

- A. Acoustic organ
- B. Visual organ
- C. Gustatory organ
- D. Equilibrium organ
- E. Olfactory organ

44. A patient was admitted to the hospital with an asphyxia attack provoked by a spasm of smooth muscles of the respiratory tracts. This attack was mainly caused by alterations in the following parts of the airways:

- A. Small bronchi
- B. Median bronchi
- C. Large bronchi
- D. Terminal bronchioles
- E. Respiratory part

45. While eating a child choked on food and aspirated it. The child has severe cough, cyanotic skin and mucous membranes, rapid pulse, infrequent respiration, prolonged expiration. The child has developed the following disorder of the external respiration:

- A. Expiratory dyspnea under asphyxia
- B. Inspiratory dyspnea under asphyxia
- C. Stenotic respiration
- D. Alternating respiration
- E. Biot's respiration

46. A 50-year-old patient complains about general weakness, appetite loss and cardiac arrhythmia. The patient presents with muscle hypotonia, flaccid paralyzes, weakened peristaltic activity of the bowels. Such condition might be caused by:

- A. Hypokaliemia
- B. Hypoproteinemia
- C. Hyperkaliemia
- D. Hypophosphatemia
- E. Hyponatremia

47. While playing volleyball a sportsman jumped and then landed across the external edge of his foot. This caused acute pain in the talocrural articulation, active movements became limited, passive movements remained unlimited but painful. In the region of the external ankle a swelling appeared, the skin turned red and became warmer to the touch. What type of peripheral circulation disorder has developed in this case?

- A. Arterial hyperaemia
- B. Stasis
- C. Embolism
- D. Venous hyperaemia
- E. Thrombosis

48. 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

49. 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

50. A 12-year-old adolescent suffering from bronchial asthma has a severe attack of asthma: he presents with marked expiratory dyspnea, skin pallor. What type of alveolar ventilation disorder is observed?

- A. Obstructive
- B. Restrictive
- C. Thoracodiaphragmatic
- D. Central
- E. Neuromuscular

51. 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

52. A patient who had myocardial infarction was administered 75 mg of acetylsalicylic acid a day. What is the purpose of this administration?

- A. Reduction of thrombocyte aggregation
- B. Inflammation reduction
- C. Pain relief
- D. Temperature reduction
- E. Coronary vessel dilatation

53. Medical examination at the mili-

tary 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

54. To prevent the transplant rejection after organ transplantation it is required to administer hormonotherapy for the purpose of immunosuppression. What hormones are used for this purpose?

- A. Glucocorticoids
- B. Mineralocorticoids
- C. Sexual hormones
- D. Catecholamines
- E. Thyroid

55. A 53-year-old female patient was diagnosed with liver rupture resulting from a blunt abdominal injury. The escaped blood will be assembled in the following anatomic formation:

- A. Rectouterine pouch
- B. Vesicouterine pouch
- C. Right mesenteric sinus
- D. Omental bursa
- E. Left mesenteric sinus

56. A patient complains about edemata of legs, skin cyanosis, small ulcers on one side of the lateral condyle. Examination revealed a swelling, enlarged veins, formation of nodes. The pathological process has started in the following vein:

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

57. A 1,5-year-old child presents with both mental and physical lag, decolorizing of skin and hair, decrease in catecholamine concentration in blood. When a few drops of 5% solution of trichloroacetic iron had been added to the child's urine it turned olive green. Such alteration are typical for the following pathology of the amino acid metabolism:

- A. Phenylketonuria
- B. Alkaptonuria
- C. Tyrosinosis
- D. Albinism
- E. Xanthinuria

58. 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

59. 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

60. Continuous use of a certain drug may cause osteoporosis, erosions of stomach mucosa, hypokaliemia, retention of sodium and water in the organism, decreased concentration of corticotropin in blood. What drug is it?

- A. Prednisolone
- B. Hypothiazide
- C. Digoxin
- D. Indometacin
- E. Reserpine

61. 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. -

62. A 63-year-old patient with collapse presentations was delivered to the emergency hospital. A physician has chosen noradrenalin against hypotension.

What is its mechanism of action?

- A. Activation of  $\alpha_1$ -adrenoreceptors
- B. Activation of serotonin receptors
- C. Activation of  $\beta$ -adrenoreceptors
- D. Activation of dopamine receptors
- E. Block of *M*-cholinoreceptors

63. 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

64. A patient suffering from syphilis has been treated with bismuth preparations. As a result of it some grey spots turned up on the mucous membrane of the oral cavity; nephropathy symptoms were also present. What drug should be used for treatment of bismuth intoxication?

- A. Unithiol
- B. Methylene blue
- C. Naloxone
- D. Bemegride
- E. Nalorphine

65. ECG of a patient shows such alterations: *P*-wave is normal, *P* – *Q*-interval is short, ventricular *QRST* complex is wide, *R*-wave is double-peak or two-phase. What form of arrhythmia is it?

- A. WPW syndrome (Wolff-Parkinson-White)
- B. Frederick's syndrome (atrial flutter)
- C. Atrioventricular block
- D. Ventricular fibrillation
- E. Ciliary arrhythmia

66. In a histological specimen parenchyma of an organ is represented by lymphoid tissue that forms lymph nodes; the latter are arranged in a diffuse manner and enclose a central artery. What anatomic formation has such morphological structure?

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

67. Examination of a patient with frequent haemorrhages from the internal organs

and mucous membranes revealed proline and lysine within the collagen fibers. Disorder of their hydroxylation is caused by lack of the following vitamin:

- A. Vitamin *C*
- B. Vitamin *K*
- C. Vitamin *A*
- D. Vitamin *B*<sub>1</sub>
- E. Vitamin *E*

68. During a prophylactic medical examination a 7-year-old boy was diagnosed with daltonism. His parents are healthy and have normal colour vision, but his grandfather on his mother's side has the same abnormality. What is the type of the abnormality inheritance?

- A. Recessive, sex-linked
- B. Dominant, sex-linked
- C. Semidominance
- D. Autosomal recessive
- E. Autosomal dominant

69. In a healthy adult speed of the excitement conduction through the atrioventricular node is 0,02-0,05 m/sec. Atrioventricular delay enables:

- A. Sequence of atrial and ventricular contractions
- B. Simultaneity of both atria contractions
- C. Simultaneity of both ventricles contractions
- D. Sufficient force of atrial contractions
- E. Sufficient force of ventricular contractions

70. 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. -

71. Stimulation of an excitable cell by the electric current has led to the depolarization of its membrane. The depolarization has been caused mainly by the following ions penetrating into the cell through its membrane:



- A.  $Na^+$
- B.  $HCO_3^-$
- C.  $Ca^{2+}$
- D.  $Cl^-$
- E.  $K^+$

72. Products of some proteins hydrolysis and modification are the biologically active substances called hormones. Lipotropin, corticotropin, melanotropin and endorphins are synthesized in the hypophysis of the following protein:

- A. Proopiomelanocortin (POMC)
- B. Neuroalbumin
- C. Neurostromin
- D. Neuroglobulin
- E. Thyreoglobulin

73. In patients with the biliary tract obstruction the blood coagulation is inhibited; the patients have frequent haemorrhages caused by the subnormal assimilation of the following vitamin:

- A. K
- B. A
- C. D
- D. E
- E. C

74. A 48-year-old patient was admitted to the hospital with complaints about weakness, irritability, sleep disturbance. Objectively: skin and scleras are of yellow colour. In blood: increased concentration of total bilirubin with prevailing direct bilirubin. The feces are acholic. The urine is dark (contains bile pigments). What type of jaundice is it?

- A. Mechanic
- B. Haemolytic
- C. Parenchymatous
- D. Gilbert's syndrome
- E. Crigler-Najjar syndrome

75. A bacteriological laboratory has received smears from the sputum of a patient with a chronic pulmonary disease. Microscopical examination of the smears stained by the Ziehl-Neelsen technique revealed red bacilli. What property of the tuberculosis bacillus has shown itself?

- A. Acid resistance
- B. Alkali resistance
- C. Alcohol resistance
- D. Capsule formation
- E. Spore formation

76. 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 limbus 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

77. Two weeks after lacunar tonsillitis a 20-year-old man started complaining about general weakness, lower eyelid edemata. After examination the patient was diagnosed with acute glomerulonephritis. What are the most likely pathological changes in the urine formula?

- A. Proteinuria
- B. Cylindruria
- C. Presence of fresh erythrocytes
- D. Pyuria
- E. Natriuria

78. 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

79. 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

80. 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

**81.** 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

**82.** 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

**83.** 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

**84.** A 49-year-old patient consulted a doctor about increased fatigability and dyspnea provoked by physical activity. ECG results: heart rate - 50/min, *PQ*-interval is prolonged, *QRS*-complex is unchanged, the number of *P*-waves exceeds the number of *QRS*-complexes. What type of arrhythmia is it?

- A. Atrioventricular block
- B. Extrasystole
- C. Sinus bradycardia
- D. Ciliary arrhythmia
- E. Sinoatrial block

**85.** A patient suffering from coronary artery disease had taken a certain drug many times a day in order to arrest stenocardia attacks. Overdose of this drug finally caused intoxication. Objectively: cyanotic skin and mucous membranes, dramatic fall in the arterial pressure, tachycardia, respiration inhibition. Blood has increased concentration of methemoglobin. The drug the patient had taken relates to the following group:

- A. Organic nitrates
- B.  $\alpha$ -adrenoceptor blockers
- C. Calcium channel blockers
- D. Adenosine drugs
- E. Myotropic spasmolytics

**86.** A patient with android-type obesity had been suffering from arterial hypertension, hyperglycemia, glycosuria for a long time and died from the cerebral haemorrhage. Pathologic examination revealed pituitary basophil adenoma, adrenal cortex hyperplasia. What is the most likely diagnosis?

- A. Itsenko-Cushing's syndrome
- B. Diabetes mellitus
- C. Acromegalia
- D. Pituitary nanism
- E. Adiposogenital dystrophy

**87.** A middle-aged man went to a foreign country because he had been offered a job there. However he had been unemployed for quite a long time. What endocrine glands were exhausted most of all in this man?

- A. Adrenal glands
- B. Parathyroid glands
- C. Seminal glands
- D. Substernal gland
- E. Thyroid gland

**88.** A girl has been diagnosed with adrenogenital syndrome (pseudohermaphroditism). This pathology is caused by hypersecretion of the following adrenal hormone:

- A. Androgens
- B. Estrogens
- C. Mineralocorticoids
- D. Glucocorticoids
- E. Catecholamines

89. A woman delivered a dead child with multiple developmental defects. What protozoan disease might have caused the intrauterine death?

- A. Toxoplasmosis
- B. Leishmaniasis
- C. Malaria
- D. Amebiasis
- E. Lambliasis

90. A patient has a massive haemorrhage caused by damage of the dorsal lingual artery by cancer of tongue back. What vessel should be ligated for the haemorrhage arrest?

- A. Lingual artery
- B. Dorsal lingual artery
- C. Deep artery of tongue
- D. Facial artery
- E. Ascending pharyngeal artery

91. 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

92. As a result of increased permeability of the erythrocyte membrane in a patient with microspherocytic anaemia (Minkowsky-Shauffard disease) cells receive sodium ions and water. Erythrocytes take form of spherocytes and can be easily broken down. What is the leading mechanism of erythrocyte damage in this case?

- A. Electrolytic osmotic
- B. Calcium
- C. Acidotic
- D. Protein
- E. Nucleic

93. 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

94. Cooling of the human body in water is much more faster than in the air. What way of heat emission in water is much more effective?

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

95. 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*

96. After a surgery a 36-year-old woman was given an intravenous injection of concentrated albumin solution. This has induced intensified water movement in the following direction:

- A. From the intercellular fluid to the capillaries
- B. From the intercellular fluid to the cells
- C. From the cells to the intercellular fluid
- D. From the capillaries to the intercellular fluid
- E. No changes of water movement will be observed

97. 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

**98.** 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

**99.** During examination of an 11-month-old infant a pediatrician revealed osteoectasia of the lower extremities and delayed mineralization of cranial bones. Such pathology is usually provoked by the deficit of the following vitamin:

- A. Cholecalciferol
- B. Thiamin
- C. Pantothenic acid
- D. Bioflavonoids
- E. Riboflavin

**100.** Examination of a patient suffering from chronic hepatitis revealed a significant decrease in the synthesis and secretion of bile acids. What process will be mainly disturbed in the patient's bowels?

- A. Fat emulsification
- B. Protein digestion
- C. Carbohydrate digestion
- D. Glycerin absorption
- E. Amino acid absorption

**101.** Retrospective diagnostics of bacterial dysentery involved serological analysis of blood serum intended for determination of Shigella antibody titre. Which of the following reactions should be applied for this purpose?

- A. Passive haemagglutination
- B. Complement binding
- C. Precipitation
- D. Haemolysis
- E. Bacteriolysis

**102.** You are studying functioning of a bacteria operon. The operator gene

has been released from the repressor gene. Immediately after this the following process will start in the cell:

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

**103.** While determining power inputs of a patient's organism it was established that the respiratory coefficient equaled 1,0. This means that in the cells of the patient the following substances are mainly oxidized:

- A. Carbohydrates
- B. Proteins
- C. Fats
- D. Proteins and carbohydrates
- E. Carbohydrates and fats

**104.** During an experiment the dorsal roots of the spinal cord of an animal have been cut. What changes will be observed in the innervation zone?

- A. Sensitivity loss
- B. Loss of motor functions
- C. Decrease in muscle tone
- D. Increase in muscle tone
- E. Sensitivity loss and loss of motor functions

**105.** An experimental animal has lost orientative reflexes as a result of destruction of certain brainstem structures. What structures had been destroyed?

- A. Quadrigeminal plate
- B. Medial nuclei of the reticular formation
- C. Red nuclei
- D. Vestibular nuclei
- E. Black substance

**106.** A patient has osmotic pressure of blood plasma at the rate of 350 mOsmol/l (norm is 300 mOsmol/l). This will cause hypersecretion of the following hormone:

- A. Vasopressin
- B. Aldosterone
- C. Cortisol
- D. Adrenocorticotropin
- E. Natriuretic

**107.** After a sprint an untrained person develops muscle hypoxia. This leads to the accumulation of the following metabolite in muscles:

- A. Lactate
- B. Ketone bodies
- C. Acetyl CoA
- D. Glucose 6-phosphate
- E. Oxaloacetate

**108.** Cytoplasm of the myocytes contains a lot of dissolved metabolites resulting from glucose oxidation. Name the metabolite that turns directly into lactate:

- A. Pyruvate
- B. Oxaloacetate
- C. Glycerophosphate
- D. Glucose-6-phosphate
- E. Fructose-6-phosphate

**109.** A young man complains about urination disorder. Examination of the external genitals revealed that the urethra was split and urine could flow out of this orifice. What anomaly of the external genitals development is it?

- A. Epispadia
- B. Phimosis
- C. Hermaphroditism
- D. Paraphimosis
- E. Hypospadia

**110.** 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. Dicrocoeliasis

**111.** Colonoscopy of a patient with dysentery revealed that the mucous membrane of the large intestine was hyperemic, edematic, and its surface was covered with grey-and-green layerings. What morphological form of dysenteric colitis is it?

- A. Fibrinous
- B. Catarrhal
- C. Ulcerous
- D. Purulent
- E. Necrotic

**112.** Examination of a patient 24 hours after appendectomy revealed neutrophilic leukocytosis with a regenerative shift. What is the most likely mechanism of leukocytosis development?

- A. Intensification of leukopoiesis
- B. Redistribution of the leukocytes in the organism
- C. Deceleration of leukocyte breakdown
- D. Deceleration of leukocyte migration to the tissues
- E. Intensification of leukopoiesis and deceleration of leukocyte migration to the tissues

**113.** 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

**114.** 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

**115.** Vitamin  $B_1$  deficiency causes disturbance of oxidative decarboxylation of  $\alpha$ -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

**116.** On the ground of clinical presentations a patient was prescribed pyridoxal phosphate. This medication is recommended for correction of the following processes:

- A. Transamination and decarboxylation of amino acids
- B. Oxidative decarboxylation of ketonic acids
- C. Desamination of purine nucleotides
- D. Synthesis of purine and pyrimidin bases
- E. Protein synthesis

**117.** A patient with clinical presentations of immunodeficiency has undergone immunological tests. They revealed significant decrease in number of cells that form rosettes with sheep erythrocytes. What conclusion can be drawn on the ground of the analysis data?

- A. Decrease in *T*-lymphocyte level
- B. Decrease in *B*-lymphocyte level
- C. Decrease in natural killer level (*NK*-cells)
- D. Decrease in complement system level
- E. Lack of effector cells of the humoral immunity

**118.** A man had worked in a coal mine for over 20 years. After his death autopsy revealed that his lungs were dense, grayish-black and had large areas of neogenic connective tissue containing a lot of microphages with black pigment in the cytoplasm. What is the most likely diagnosis?

- A. Anthracosis
- B. Anthracosilicosis
- C. Silicoanthracosis
- D. Talcosis
- E. Siderosis

**119.** Autopsy of a man who died from sepsis revealed a phlegmonous inflammation in the femoral bone of lower extremity. The inflammation was seen in the bone marrow, haversian canals and periosteum. There were also multiple abscesses underneath the periosteum; the surrounding soft tissues of the thigh were also affected by the phlegmonous inflammation. What pathological process is it?

- A. Acute haematogenous osteomyelitis
- B. Osteoporosis
- C. Chronic haematogenous osteomyelitis
- D. Osteopetrosis
- E. -

**120.** After the prior sensibilization an experimental animal was given a subcutaneous injection of an antigen. The place of injection exhibited a fibrinous inflammation with alteration of the vessel walls, basal substance and fibrous structures of the connective tissue in form of mucoid and fibrinoid swelling and necrosis. What immunological reaction is it?

- A. Immediate hypersensitivity
- B. Delayed-type hypersensitivity
- C. Reaction of transplantation immunity
- D. Normergic reaction
- E. Granulomatosis

**121.** 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*

**122.** Autopsy of a 50-year-old man revealed the following changes: his right lung was moderately compact in all parts, the dissected tissue was found to be airless, fine-grained, dryish. Visceral pleura had greyish-brown layers of fibrin. What is the most likely diagnosis?

- A. Croupous pneumonia
- B. Tuberculosis
- C. Bronchopneumonia
- D. Interstitial pneumonia
- E. Pneumofibrosis

**123.** In the pubertal period cells of the male sexual glands start producing the male sexual hormone testosterone that is responsible for formation of the secondary sexual characters. What cells of the male sexual glands produce this hormone?

- A. Leydig cells
- B. Sustenocytes
- C. Sertoli's cells
- D. Sustentacular cells
- E. Spermatozoa

**124.** Examination of a patient revealed overgrowth of facial bones and soft tissues, tongue enlargement, wide interdental spaces in the enlarged dental arch. What changes of the hormonal secretion are the most likely?

- A. Hypersecretion of the somatotropic hormone
- B. Hyposecretion of the somatotropic hormone
- C. Hypersecretion of insulin
- D. Hyposecretion of thyroxin
- E. Hyposecretion of insulin

**125.** Autopsy of a man, who had been suffering from the multiple bronchiectasis

for 5 years and died from chronic renal insufficiency, revealed that kidneys were dense and enlarged, with thickened cortical layer of white colour with greasy lustre. What renal disease might be suspected?

- A. Secondary amyloidosis
- B. Glomerulonephritis
- C. Chronic pyelonephritis
- D. Necrotic nephrosis
- E. -

**126.** Autopsy of a 49-year-old woman who died from chronic renal insufficiency, revealed: kidneys were dense, reduced, multicoloured, with haemorrhagic areas. Microscopic examination revealed some hematoxylin bodies in the nuclei of the renal tubule epithelium; "wire-loop" thickening of the glomerular capillary basement membrane; here and there in the capillaries some hyaline thrombi and foci of fibrinoid necrosis were present. What is the most likely diagnosis?

- A. Systemic lupus erythematosus
- B. Rheumatism
- C. Arteriosclerotic pneumosclerosis
- D. Amyloidosis
- E. Atherosclerotic nephrosclerosis

**127.** As a result of durative antibiotic therapy a 37-year old patient developed intestinal dysbacteriosis. What type of drugs should be used in order to normalize intestinal microflora?

- A. Eubiotics
- B. Sulfanilamides
- C. Bacteriophages
- D. Autovaccines
- E. Vitamins

**128.** A married couple came to the genetic counseling. The husband suffers from the insulin-dependant diabetes, the wife is healthy. What is the probability that this couple will have an insulin-dependant child?

- A. Higher than throughout the population
- B. The same as throughout the population
- C. Lower than throughout the population
- D. 100%
- E. 50%

**129.** An elderly female patient suffers from the type 2 diabetes mellitus accompanied by obesity, atherosclerosis, coronary artery disease. Basal hyperinsulinemia is also present. What treatment would be the most appropriate?

- A. Glibenclamid
- B. Insulin
- C. Retabolil
- D. Lovastatin
- E. Amlodipine

**130.** 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

**131.** Preventive examination of a patient revealed an enlarged lymph node of metastatic origin on the medial wall of the left axillary crease. Specify the most likely localization of the primary tumour:

- A. Mammary gland
- B. Submandibular salivary gland
- C. Lung
- D. Stomach
- E. Thyroid gland

**132.** A man suffering from osteochondrosis got acute pain in the abdominal muscles (lateral and anterior). During objective examination a physician diagnosed increased pain sensitivity of skin in the hypogastric region. This pain might be caused by affection of the following nerve:

- A. Iliohypogastric
- B. Sciatic
- C. Obturator
- D. Femoral
- E. Genitofemoral

**133.** 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. -

**134.** Autopsy of a man who died from influenza revealed that the heart was slightly enlarged and pastose. The surface of the incision of myocardium appeared to be pale, with specks. Microscopic examination revealed signs of parenchymatous adipose and hydropic

degeneration, edematic stroma with scant lymphocytic and macrophage infiltration; plethoric vessels; perivascular petechial haemorrhages. What type of myocarditis is it?

- A. Serous diffuse
- B. Interstitial proliferative
- C. Serous focal
- D. Purulent
- E. Granulomatous

**135.** In spite of treatment with cardiotonics and thiazide diuretic a patient suffering from chronic cardiac failure still presents with edemata and faces a risk of ascites. What medication should be administered in order to increase the diuretic effect of the above mentioned drugs?

- A. Spironolactone
- B. Furosemide
- C. Amiloride
- D. Clopamide
- E. Manithol

**136.** Gynecological examination of the uterine cervix in a 30-year-old woman revealed some bright-red lustrous spots that easily bleed when touched. Biopsy showed that a part of the uterine cervix was covered with cylindrical epithelium with papillary outgrowths; in the depth of tissue the growth of glands was present. What pathology of the uterine cervix was revealed?

- A. Pseudoerosion
- B. True erosion
- C. Endocervicitis
- D. Glandular hyperplasia
- E. Leukoplakia

**137.** A stillborn child was found to have thickened skin resembling of the tortoise shell, underdeveloped auricles. Histological examination of skin revealed hyperkeratosis, atrophy of the granular epidermis layer; inflammatory changes were not present. What is the most likely diagnosis?

- A. Ichthyosis
- B. Leukoplakia
- C. Xerodermia
- D. Erythroplakia
- E. Dermatomyositis

**138.** A patient presents with twilight vision impairment. Which of the following vitamins should be administered?

- A. Retinol acetate
- B. Cyanocobalamin
- C. Pyridoxine hydrochloride
- D. Ascorbic acid
- E. Nicotinic acid

**139.** 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

**140.** Depressions and emotional insanities result from the deficit of noradrenalin, serotonin and other biogenic amines in the brain. Their concentration in the synapses can be increased by means of the antidepressants that inhibit the following enzyme:

- A. Monoamine oxidase
- B. Diamine oxidase
- C. L-amino-acid oxidase
- D. D-amino-acid oxidase
- E. Phenylalanine-4-monooxygenase

**141.** 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

**142.** A pathology-histology laboratory received a vermiform appendix up to 2,0 cm thick. Its serous membrane was pale, thick and covered with yellowish-green films. The wall was flaccid, of grayish-red colour. The appendix lumen was dilated and filled with yellowish-green substance. Histological examination revealed that the appendix wall was infiltrated with neutrophils. Specify the appendix disease:



- A. Acute phlegmonous appendicitis
- B. Acute gangrenous appendicitis
- C. Acute superficial appendicitis
- D. Acute simple appendicitis
- E. Chronic appendicitis

**143.** While on holiday in the countryside a boy found a spider with the following morphological peculiarities: body length of 2 cm, round black abdomen with two rows of red dots on its dorsal surface, four pairs of segmented extremities covered with tiny black hairs. Identify this arthropod:

- A. Karakurt spider
- B. Scorpion
- C. Solifugae
- D. Mite
- E. Tarantula

**144.** As a result of a trauma a patient has developed traumatic shock that led to the following disorders: AP is 140/90 mm Hg, Ps is 120 bpm. The patient is fussy, talkative, pale. Such state relates to the following shock phase:

- A. Erectile
- B. Latent period
- C. Terminal
- D. Torpid
- E. -

**145.** Examination of a patient admitted to the surgical department with symptoms of acute appendicitis revealed the following changes in the white blood cells: the total count of leukocytes is  $16 \cdot 10^9/l$ . Leukocyte formula: basophils - 0, eosinophils - 2%, juvenile forms - 2%, stabnuclear - 8%, segmentonuclear - 59%, lymphocytes - 25%, monocytes- 4%. The described changes can be classified as:

- A. Neutrophilia with regenerative left shift
- B. Neutrophilia with right shift
- C. Neutrophilia with degenerative left shift
- D. Neutrophilic leukemoid reaction
- E. Neutrophilia with hyperregenerative left shift

**146.** After a trauma a patient lost ability of elbow extension. This might have been caused by dysfunction of the following main muscle:

- A. *m. triceps brachii*
- B. *m. subscapularis*
- C. *m. teres major*
- D. *m. infraspinatus*
- E. *m. levator scapulae*

**147.** A student came to see a doctor and asked to administer him a drug for treatment of allergic rhinitis that occurs in the period of linden flowering. What drug may be used?

- A. Loratadine
- B. Noradrenaline hydrotartrate
- C. Propanolol
- D. Ambroxol
- E. Losartan

**148.** In an embryo the process of dorsal mesoderm segmentation and somite formation is disturbed. What part of skin will probably have developmental abnormalities?

- A. Dermis
- B. Hair
- C. Sebaceous glands
- D. Epidermis
- E. Perspiratory glands

**149.** A 9-month-old infant is fed with artificial formulas with unbalanced vitamin  $B_6$  concentration. The infant presents with pellagral dermatitis, convulsions, anaemia. Convulsion development might be caused by the disturbed formation of:

- A. GABA
- B. Histamine
- C. Serotonin
- D. DOPA
- E. Dopamine

**150.** 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

**151.** During an experiment vagus branches that innervate heart are being stimulated. This has stopped conduction of excitement from the atria to the ventricles. The reason for it are electrophysical changes in the following structures:

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

**152.** A man has worked in an African country for 3 years. A month after his return to Ukraine he consulted an ophthalmologist and complained about eye ache, eyelid edema, lacrimation and temporary visual impairment. Underneath the eye conjunctiva the doctor revealed helminths 30-50 mm long with elongated filiform body. What diagnosis might be suspected?

- A. Filariasis
- B. Diphyllbothriasis
- C. Ascariasis
- D. Enterobiasis
- E. Trichocephaliasis

**153.** After a disease a 16-year-old boy is presenting with decreased function of protein synthesis in the liver as a result of vitamin *K* deficiency. This may cause disorder of:

- A. Blood coagulation
- B. Erythrocyte sedimentation rate
- C. Anticoagulant production
- D. Erythropoietin production
- E. Osmotic blood pressure

**154.** 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

**155.** Life cycle of a cell includes a process of DNA autoreduplication. As a result of this process monochromatid chromosomes become bichromatid. This phenomenon is observed within the following period of the cell cycle:

- A. *S*
- B. *G*<sub>0</sub>
- C. *G*<sub>1</sub>
- D. *G*<sub>2</sub>
- E. *M*

**156.** As a result of a road accident a driver has gotten a trauma. Now he is in shock condition and presents with a decrease in daily diuresis down to 300 ml. What is the main pathogenetic factor of such alteration

in the diuresis?

- A. Arterial pressure drop
- B. Oncotic blood pressure drop
- C. Increase in vascular permeability
- D. Decrease in number of the functioning glomerules
- E. Secondary hyperaldosteronism

**157.** Examination of a patient revealed autoimmune haemolytic anaemia (cytotoxic type). What substances act as antigens in the II-type allergic reactions?

- A. Modified receptors of cell membranes
- B. Antibiotics
- C. Hormones
- D. Serum proteins
- E. Inflammation modulators

**158.** A patient suffers from the haemorrhagic syndrome that shows itself in frequent nasal bleedings, posttraumatic and spontaneous intracutaneous and intra-articular haemorrhages. After a laboratory study a patient was diagnosed with the type B haemophilia. This disease is provoked by the deficit of the following factor of blood coagulation:

- A. IX
- B. VIII
- C. XI
- D. V
- E. VII

**159.** 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*

**160.** A 58-year-old patient suffers from the cerebral atherosclerosis. Examination revealed hyperlipidemia. What class of lipoproteins will most probably show increase in concentration in this patient's blood serum?

- A. Low-density lipoproteins
- B. High-density lipoproteins
- C. Fatty acid complexes with albumins
- D. Chylomicrons
- E. Cholesterol

**161.** A patient consulted a physician about muscle rigidity, constrained movements,

permanent arm tremor. The patient was diagnosed with Parkinson's disease. What preparation should be administered?

- A. Levodopa
- B. Phenytoin
- C. Phenobarbital
- D. Diazepam
- E. Ethosuximide

**162.** A patient with coronary artery disease was admitted to the cardiological department. For stenocardia prevention a drug from the group of  $\beta$ -adrenoceptor blockers was administered. What drug is it?

- A. Metoprolol
- B. Atropine sulfate
- C. Morphine hydrochloride
- D. Oxytocin
- E. Furosemide

**163.** 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

**164.** A patient with drug intoxication presented with the dryness of oral mucous membrane and mydriatic pupils. Such action of this drug is associated with the following effect:

- A. Muscarinic cholinoreceptor block
- B. Muscarinic cholinoreceptor stimulation
- C. Nicotinic cholinoreceptor stimulation
- D. Adrenoreceptor stimulation
- E. Adrenoreceptor block

**165.** 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

**166.** A man presents with increased heart rate, mydriatic pupils, dry mouth. This condition results from the activation of the following system of function regulation:

- A. Sympathetic
- B. Parasympathetic
- C. Metasympathetic
- D. Vago-insular
- E. Hypothalamo-pituitary-adrenal

**167.** A patient with a limb fracture must be administered a depolarizing drug from the myorelaxant group for the purpose of a short-time surgery. What drug is it?

- A. Dithylinum
- B. Tubocurarine chloride
- C. Cytitonum
- D. Atropine sulfate
- E. Pentaminum

**168.** A patient suffering from chronic bronchitis takes a synthetic mucolytic drug that facilitates the sputum thinning. What drug is it?

- A. Acetylcysteine
- B. Diazepam
- C. Heparin
- D. Furosemide
- E. Enalapril

**169.** 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

**170.** A patient with severe course of respiratory viral infection presented with clinical signs of progressing heart failure that led to his death in the 2nd week of disease. Autopsy revealed that the heart cavities were significantly dilated, the heart was flabby. Histological examination of the myocardium revealed microvascular plethora and diffuse stroma infiltration with lymphocytes and histiocytes. What is the most likely diagnosis?

- A. Myocarditis
- B. Stenocardia
- C. Acute coronary insufficiency
- D. Myocardial infarction
- E. Cardiomyopathy

**171.** During the regular sanitary-epidemiological inspection of a pharmacy, the bacteriological analysis of air was performed. The air was found to have bacilli, yeast fungi, hemolytic streptococci, micrococci. Which of the detected microorganisms indicate the direct epidemic danger?

- A. Haemolytic streptococci
- B. Micrococci
- C. Bacilli
- D. Yeast fungi
- E. -

**172.** A man with an injury in the nuchal region (*regio nuchae*) was admitted to the resuscitation department. What muscle occupies this region?

- A. *m. trapezius*
- B. *m. sternocleidomastoideus*
- C. *m. latissimus dorsi*
- D. *m. rhomboideus minor*
- E. *m. scalenus anterior*

**173.** A section of the left lung was found to have an area of dense red tissue. The area was cone-shaped, stood out distinctly from the healthy tissue, with its base directed to the pleura. The dissected tissue was granular, dark-red. What is the most likely diagnosis?

- A. Haemorrhagic infarction
- B. Lung abscess
- C. Lung gangrene
- D. Primary tuberculous affection
- E. Croupous pneumonia

**174.** 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

**175.** Following exposure to radiation a lot of mutant cells appeared in a patient. Some time later most of them were detected and destroyed by the following

cells of the immune system:

- A. *T*-lymphocytes-killers
- B. Plasmoblasts
- C. *T*-lymphocytes-suppressors
- D. *B*-lymphocyte
- E. Stem cells

**176.** A 65-year-old man has purulent abscess on his neck. Analyses revealed a culture of gram-positive cocci with plasmocoagulase activity. This culture relates most likely to:

- A. *Staphylococcus aureus*
- B. *Streptococcus pyogenes*
- C. *Staphylococcus epidermidis*
- D. *Staphylococcus saprophyticus*
- E. -

**177.** In clinical practice tuberculosis is treated with izoniazid preparation - that is an antivitamin able to penetrate into the tuberculosis bacillus. Tuberculostatic effect is induced by the interference with replication processes and oxidation-reduction reactions due to the buildup of pseudo-coenzyme:

- A. NAD
- B. FAD
- C. FMN
- D. TDP
- E. CoQ

**178.** 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

**179.** Vagus nerves of an experimental animal have been cut on the both sides. What respiratory changes will result from this?

- A. Respiration will become deep and infrequent
- B. Respiration will become shallow and frequent
- C. Respiration will become deep and frequent
- D. Respiration will become shallow and infrequent
- E. There will be no respiratory changes

**180.** Before tooth extraction a patient was advised to take a certain drug for

haemorrhage prevention. What drug was advised?

- A. Vicasolum
- B. Heparin
- C. Asparcam
- D. Magnesium sulfate
- E. Dimedrol

**181.** A patient who has been taking a drug for a long time cannot abruptly stop its use, because this may lead to psychic and somatic dysfunctions. Name the syndrome of different disorders caused by a drug withdrawal:

- A. Abstinence
- B. Sensibilization
- C. Idiosyncrasy
- D. Tachyphylaxis
- E. Cumulation

**182.** A 45-year-old patient suffers from neurosis characterized by irritability, sleeplessness, motiveless anxiety. What drug would eliminate all the symptoms?

- A. Diazepam
- B. Valerian extract
- C. Pyracetam
- D. Caffeine sodium benzoate
- E. Levodopa

**183.** After taking poor-quality food a patient developed repeated episodes of diarrhea. On the next day he presented with decreased arterial pressure, tachycardia, extrasystole. Blood *pH* is 7,18. These abnormalities were caused by the development of:

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

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

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

**185.** A patient has lost skin sensitivity in the region of the medial surface of his shoulder. This is the result of dysfunction of the following nerve:

- A. Medial brachial cutaneous nerve
- B. Medial antebrachial cutaneous nerve
- C. Radial nerve
- D. Ulnar nerve
- E. Axillary nerve

**186.** Examination of a young woman revealed a tumour up to 3 cm in diameter in form of a knot localized along the acoustic nerve. The tumour is homogenous, soft and elastic, of pink-and-white colour. Microscopically the tumour contains clusters of cells with oval nuclei. Fibrous cell clusters form regular structures made up by parallel rows of regularly oriented cells arranged in form of a palisade. Zones between the rows of cells are acellular and homogenous (Verocai bodies). What tumour is it?

- A. Neurinoma
- B. Malignant neurinoma
- C. Ganglioneuroma
- D. Neuroblastoma
- E. Ganglioneuroblastoma

**187.** 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

**188.** Treatment course of bacterial pneumonia included benzylpenicillin sodium salt. What is the mechanism of its antimicrobial action?

- A. Inhibition of cell wall synthesis of the microorganism
- B. Inhibition of the intracellular protein synthesis
- C. Inhibition of the cholinesterase activity
- D. Inhibition of the *SH* enzyme groups of the microorganisms
- E. Antagonism with the paraaminobenzoic acid

**189.** A 49-year-old driver complains about unbearable constricting pain behind the breastbone irradiating to the neck. The pain arose 2 hours ago. Objectively: the patient's condition is grave, he is pale, heart tones are decreased. Laboratory studies revealed high activity of creatine kinase and *LDH*<sub>1</sub>. What disease are these

symptoms typical for?

- A. Acute myocardial infarction
- B. Acute pancreatitis
- C. Stenocardia
- D. Cholelithiasis
- E. Diabetes mellitus

190. A 60-year-old patient presents with weakened peristaltic activity of the bowels. Which of the following foodstuffs would stimulate peristalsis most of all?

- A. Brown bread
- B. White bread
- C. Meat
- D. Lard
- E. Tea

191. 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

192. A microspecimen of the submandibular salivary gland shows some basket-shaped cells concentrated around the acines and excretory ducts. These cells surround bases of the serous cells and are called myoepitheliocytes. These cells relate to the following tissue:

- A. Muscular tissue
- B. Epithelial tissue
- C. Neural tissue
- D. Special connective tissue
- E. Loose fibrous connective tissue

193. It was established that agglutination of the recipient's blood erythrocytes had been caused by the standard sera from the *I* and *II* groups. Serum from the *III* group as well as anti-Rh serum hadn't provoke any agglutination. Which blood group and rhesus is allowed to be transfused this recipient?

- A. *B, α (III) Rh<sup>-</sup>*
- B. *A, β (II) Rh<sup>-</sup>*
- C. *0, α, β, (I) Rh<sup>+</sup>*
- D. *AB (IV), Rh<sup>+</sup>*
- E. *AB (IV), Rh<sup>-</sup>*

194. Pharmacological effects of antidepressants are based upon blocking (inhibiting) the enzyme that acts as a catalyst for the breakdown of biogenic amines noradrenalin and serotonin in the mitochondria of cephalic neurons. What enzyme takes part in this process?

- A. Monoamine oxidase
- B. Transaminase
- C. Decarboxylase
- D. Peptidase
- E. Lyase

195. An oncological patient was administered methotrexate. With the lapse of time the target cells of the tumour lost sensitivity to this preparation. We can observe changes in the gene expression of the following enzyme:

- A. Dihydrofolate reductase
- B. Thiminase
- C. Desaminase
- D. Folate oxidase
- E. Folate decarboxylase

196. A patient with a hypertensive crisis was admitted to the cardiological department. He was given an intravenous injection of an antihypertensive drug - alkali-earth metal salt. What drug was injected?

- A. Magnesium sulfate
- B. Potassium chloride
- C. Sodium hydrocarbonate
- D. Calcium lactate
- E. Benzohexonium

197. 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*

198. After a road accident a driver was delivered to the hospital with an injury of the medial epicondyle of humerus. What nerve might be damaged in this case?

- A. *n. ulnaris*
- B. *n. radialis*
- C. *n. axillaris*
- D. *n. muscolocutaneus*
- E. *n. medianus*

**199.** A man with a stab wound in the region of the quadrilateral foramen consulted a doctor about it. Examination revealed that the injured couldn't abduct his arm from the body. What nerve is most likely damaged?

- A. *n. axillaris*
- B. *n. medianus*
- C. *n. radialis*
- D. *n. ulnaris*
- E. *n. subclavius*

**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