

MINISTRY OF PUBLIC HEALTH OF UKRAINE

Department of human resources policy, education and science

Testing Board

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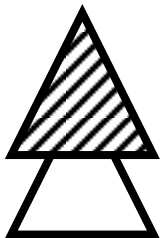
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Test items for licensing examination

Krok 1

MEDICINE



General Instruction

Every one of these numbered questions or unfinished statements in this chapter corresponds to answers or statements endings. Choose the answer (finished statements) that fits best and fill in the circle with the corresponding Latin letter on the answer sheet.

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The book includes test items for use at licensing integrated examination “Krok 1. Medicine” and further use in teaching.

The book has been developed for students of medical, pediatric and medical-and-prophylactic faculties and academic staff of higher medical educational establishments.

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1. A 35-year-old man has been delivered into a surgical ward with a suppurating wound in the neck, anterior to trachea (previsceral space). If a surgical operation is not performed urgently, there is a risk of infection spreading to:

- A. Thoracic cavity - anterior mediastinum
- B. Thoracic cavity - middle mediastinum
- C. Thoracic cavity - posterior mediastinum
- D. Retrovisceral space
- E. Interaponeurotic suprasternal space

2. Characteristic sign of glycogenosis is muscle pain during physical work. Blood examination usually reveals hypoglycemia. This pathology is caused by congenital deficiency of the following enzyme:

- A. Glycogen phosphorylase
- B. Glucose 6-phosphate dehydrogenase
- C. α -amylase
- D. γ -amylase
- E. Lysosomal glycosidase

3. Histologic specimen of a kidney demonstrates cells closely adjoined to the renal corpuscle in the distal convoluted tubule. Their basement membrane is extremely thin and has no folds. These cells sense the changes in sodium content of urine and influence renin secretion occurring in juxtaglomerular cells. Name these cells:

- A. Macula densa cells
- B. Juxtaglomerular cells
- C. Mesangial cells
- D. Podocytes
- E. Glomerular capillary endothelial cells

4. Bacteriological analysis of tap water has resulted in the following: total bacterial count in 1,0 ml of water is 80, coli index is 3. What would be the conclusion?

- A. The water is safe for consumption
- B. The water quality is doubtful
- C. The water quality is extremely doubtful
- D. The water is polluted
- E. The water is extremely polluted

5. The process of metabolism in the human body produces active forms of oxygen, including superoxide anion radical O_2^- . This anion is inactivated by the following enzyme:

- A. Superoxide dismutase
- B. Catalase
- C. Peroxidase
- D. Glutathione peroxidase
- E. Glutathione reductase

6. What kind of muscle contraction occurs in an upper limb during an attempt to lift a load beyond one's strength?

- A. Isometric
- B. Isotonic
- C. Auxotonic
- D. Phasic
- E. Single

7. A patient suffers from high fever, apnoea, pain in the thorax on the right. Pleurocentesis yielded 700 ml of yellow-green viscous liquid. Make the diagnosis:

- A. Pleural empyema
- B. Bronchial pneumonia
- C. Serous pleurisy
- D. Hemorrhagic pleurisy
- E. Pleural carcinomatosis

8. A patient suffers from disrupted patency of the airways at the level of small and medium-sized bronchial tubes. What changes of acid-base balance can occur in the patient?

- A. Respiratory acidosis
- B. Respiratory alkalosis
- C. Metabolic acidosis
- D. Metabolic alkalosis
- E. Acid-base balance remains unchanged

9. Upon toxic damage of hepatic cells resulting in disruption of liver function the patient developed edemas. What changes of blood plasma are the main cause of edema development?

- A. Decrease of albumin content
- B. Increase of globulin content
- C. Decrease of fibrinogen content
- D. Increase of albumin content
- E. Decrease of globulin content

10. A 6-year-old child with suspected active tuberculous process has undergone diagnostic Mantoux test. What immunobiological preparation was injected?

- A. Tuberculin
- B. BCG vaccine
- C. DTP vaccine
- D. Tularinum
- E. Td vaccine

11. A 15-year-old boy has been diagnosed with acute viral hepatitis. What blood value should be determined to confirm acute affection of hepatic cells?

- A. Aminotransferase activity (AST, ALT)
- B. Unconjugated and conjugated bilirubin content
- C. Erythrocytes sedimentation rate (ESR)
- D. Cholesterol content
- E. Protein fraction content

12. A 53-year-old man is diagnosed with

Paget's disease. Concentration of oxyproline in daily urine is sharply increased, which primarily means intensified disintegration of:

- A. Collagen
- B. Keratin
- C. Albumin
- D. Hemoglobin
- E. Fibrinogen

13. When taking exams students often have dry mouth. The mechanism that causes this state results from the following reflexes:

- A. Conditioned sympathetic
- B. Unconditioned parasympathetic
- C. Conditioned parasympathetic
- D. Unconditioned sympathetic
- E. Unconditioned peripheral

14. A patient has hoarseness of voice. During laryngoscopy a gray-white larynx tumor with papillary surface has been detected. Microscopic investigation has shown the following: growth of connective tissue covered with multilayer, strongly keratinized pavement epithelium, no cellular atypia. What is the most likely diagnosis?

- A. Papilloma
- B. Fibroma
- C. Polyp
- D. Angioma
- E. Angiofibroma

15. During autopsy approximately 2,0 liters of pus have been found in the abdominal cavity of the body. Peritoneum is dull and of grayish shade, serous tunic of intestines has grayish-colored coating that is easily removable. Specify the most likely type of peritonitis in the patient:

- A. Fibrinopurulent peritonitis
- B. Hemorrhagic peritonitis
- C. Serous peritonitis
- D. Tuberculous peritonitis
- E. -

16. Autopsy of a body revealed bone marrow hyperplasia of tubular and flat bones (pyoid marrow), splenomegaly (6 kg) and hepatomegaly (5 kg), enlargement of all lymph node groups. What disease are the identified changes typical of?

- A. Chronic myelogenous leukemia
- B. Chronic lymphocytic leukemia
- C. Multiple myeloma
- D. Polycythemia vera
- E. Hodgkin's disease

17. A bacteriological laboratory has been investigating a sample of homemade dried fish that was the cause of severe

food poisoning. Microscopy of the culture inoculated in Kitt-Tarozzi medium revealed microorganisms resembling a tennis racket. What diagnosis can be made?

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

18. An infant has been diagnosed with microcephaly. Doctors suspect that this brain disorder developed due to the fact that the mother had been taking actinomycin D during her pregnancy. What germinal layers have been affected by this teratogen?

- A. Ectoderm
- B. Entoderm
- C. Mesoderm
- D. Entoderm and mesoderm
- E. All germinal layers

19. A patient demonstrates sharp decrease of pulmonary surfactant activity. This condition can result in:

- A. Alveolar tendency to recede
- B. Decreased airways resistance
- C. Decreased work of expiratory muscles
- D. Increased pulmonary ventilation
- E. Hyperoxemia

20. A patient is diagnosed with diabetic coma. Blood sugar is 18,44 mmol/l. What glucose-regulating drug should be prescribed in the given case?

- A. Rapid-acting insulin
- B. Intermediate-acting insulin
- C. Long-acting insulin
- D. Biguanide
- E. Sulfonylurea derivative

21. Initial inoculation of water in 1% peptone water resulted in growth of a thin film on the medium surface in 6 hours. Such cultural properties are characteristic of causative agent of the following disease:

- A. Cholera
- B. Plague
- C. Tuberculosis
- D. Dysentery
- E. Pseudotuberculosis

22. An infant born prematurely 2 days ago presents with yellow coloring of skin and mucosa. Such a condition in the infant is caused by temporary deficiency of the following enzyme:

- A. UDP-glucuronyl transferase
- B. Aminolevulinatе synthase
- C. Heme oxygenase
- D. Heme synthetase
- E. Biliverdine reductase

23. It has been determined that one of a pesticide components is sodium arsenate that blocks lipoic acid. Enzyme activity can be impaired by this pesticide. Name this enzyme:

- A. Pyruvate dehydrogenase complex
- B. Microsomal oxidation
- C. Methemoglobin reductase
- D. Glutathione peroxidase
- E. Glutathione reductase

24. A 50-year-old woman diagnosed with cardiac infarction has been delivered into an intensive care ward. What enzyme will be the most active during the first two days?

- A. Aspartate aminotransferase
- B. Alanine aminotransferase
- C. Alanine aminopeptidase
- D. LDH_4
- E. LDH_5

25. Stool culture test of a 6-month-old bottlefed baby revealed a strain of intestinal rod-shaped bacteria of antigen structure 0-111. What diagnosis can be made?

- A. Colienteritis
- B. Gastroenteritis
- C. Choleraform disease
- D. Food poisoning
- E. Dysentery-like disease

26. Parents of a sick 5-year-old girl visited a genetic consultation. Karyotype investigation revealed 46 chromosomes. One chromosome of the 15th pair was abnormally long, having a part of the chromosome belonging to the 21st pair attached to it. What mutation occurred in this girl?

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

27. A patient consulted a doctor with complaints of dyspnea occurring after physical exertion. Physical examination revealed anemia, paraprotein was detected among gamma globulins. What value should be determined in the patient's urine to confirm the diagnosis of myeloma?

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

28. A patient complaining of dizziness, thirst, difficult swallowing, and impaired vision of close objects has addressed a doctor. Objectively: respiratory rate is increased, pupils are dilated, general agitation, talkativeness, though the speech is indistinct. BP is 110/70 mm Hg, heart rate is 110/min. Given symptoms can indicate overdose of the following drug:

- A. Atropine
- B. Morphine
- C. Ephedrine
- D. Aminazine
- E. Caffeine

29. A dry-cleaner's worker has been found to have hepatic steatosis. This pathology can be caused by disruption of synthesis of the following substance:

- A. Phosphatidylcholine
- B. Tristearin
- C. Urea
- D. Phosphatidic acid
- E. Cholic acid

30. A 35-year-old man with peptic ulcer disease has undergone antrectomy. After the surgery secretion of the following gastrointestinal hormone will be disrupted the most:

- A. Gastrin
- B. Histamine
- C. Secretin
- D. Cholecystokinin
- E. Neurotensin

31. A 16-year-old adolescent is diagnosed with hereditary UDP (uridine diphosphate) glucuronyltransferase deficiency. Laboratory tests revealed hyperbilirubinemia caused mostly by increased blood content of the following substance:

- A. Unconjugated bilirubin
- B. Conjugated bilirubin
- C. Urobilinogen
- D. Stercobilinogen
- E. Biliverdine

32. A 60-year-old patient with a long history of atherosclerosis and a previous myocardial infarction developed an attack of retrosternal pain. 3 days later the patient was hospitalized and then died of progressive cardiovascular insufficiency. During autopsy a white fibrous depressed area about 3 cm in diameter with clear margi-

ns was found within the area of posterior wall of the left ventricle and interventricular septum. The dissector considered these changes to be:

- A. Focal cardiosclerosis
- B. Myocardial ischemia
- C. Myocardial infarction
- D. Myocarditis
- E. Myocardial degeneration

33. A patient with hypertension has developed headache, tinnitus, vomiting, high BP up to 220/160 mm Hg. On examination: facial asymmetry on the right, volitional mobility is absent, increased tendon reflexes and muscle tone of extremities on the right. What motor disorder of nervous system occurred in this case?

- A. Hemiplegia
- B. Paraplegia
- C. Tetraplegia
- D. Hyperkinesia
- E. Monoplegia

34. A 7-year-old child in the state of allergic shock caused by a bee sting has been delivered into an emergency ward. High concentration of histamine was observed in blood. Production of this amine was the result of the following reaction:

- A. Decarboxylation
- B. Hydroxylation
- C. Dehydrogenation
- D. Deamination
- E. Reduction

35. A 26-year-old woman consulted a doctor about having stool with white flat moving organisms resembling noodles. Laboratory analysis revealed proglottids with the following characteristics: long, narrow, with a longitudinal channel of the uterus with 17-35 lateral branches on each side. What kind of intestinal parasite was found?

- A. *Taeniarhynchus saginatus*
- B. *Taenia solium*
- C. *Hymenolepis nana*
- D. *Diphyllobothrium latum*
- E. *Echinococcus granulosus*

36. A man is 28 years old. Histological investigation of the cervical lymph node revealed a change of its pattern due to proliferation of epithelioid, lymphoid cells and macrophages with horseshoe-shaped nuclei. In the center of some cell clusters there were non-structured light-pink areas with fragments of nuclei. What disease are these changes typical of?

- A. Tuberculosis
- B. Hodgkin's disease
- C. Actinomycosis
- D. Tumor metastasis
- E. Syphilis

37. Sex chromatin was detected during examination of a man's buccal epithelium. It is characteristic of the following chromosome disease:

- A. Klinefelter's syndrome
- B. Down's disease
- C. Turner's syndrome
- D. Triple X syndrome
- E. Hypophosphatemic rickets

38. A patient, having suffered a thermal burn, developed painful boils filled with turbid liquid in the skin. What morphological type of inflammation has developed in the patient?

- A. Serous
- B. Proliferative
- C. Croupous
- D. Granulomatous
- E. Diphtheritic

39. Autopsy of a man with tuberculosis revealed a 3x2 cm large cavity in the superior lobe of the right lung. The cavity was interconnected with a bronchus, its wall was dense and consisted of three layers: the internal layer was pyogenic, the middle layer was made of tuberculous granulation tissue and the external one was made of connective tissue. What is the most likely diagnosis?

- A. Fibrous cavernous tuberculosis
- B. Fibrous focal tuberculosis
- C. Tuberculoma
- D. Acute focal tuberculosis
- E. Acute cavernous tuberculosis

40. A 7-year-old child has acute onset of disease: temperature rise up to 38°C, rhinitis, cough, lacrimation, and large-spot rash on the skin. Pharyngeal mucosa is edematous, hyperemic, with whitish spots in the buccal area. What kind of inflammation caused the changes in the buccal mucosa?

- A. Catarrhal inflammation
- B. Suppurative inflammation
- C. Fibrinous inflammation
- D. Hemorrhagic inflammation
- E. Serous inflammation

41. After a traffic accident a 36-year-old patient has developed muscle paralysis of the extremities on the right, lost pain and thermal sensitivity on the left, and partially lost tactile sensitivity on both sides. What part of the brain is the most likely to be

damaged?

- A. Right-hand side of the spinal cord
- B. Motor cortex on the left
- C. Left-hand side of the spinal cord
- D. Anterior horn of the spinal cord
- E. Posterior horn of the spinal cord

42. A 4-year-old child has been admitted to an orthopaedic department with displaced shin fracture. Bone fragments reposition requires analgesia. What drug should be chosen?

- A. Promedol
- B. Analgin
- C. Morphine hydrochloride
- D. Panadol
- E. -

43. While examining foot blood supply a doctor checks the pulsation of a large artery running in the separate fibrous channel in front of *articulatio talocruralis* between the tendons of long extensor muscles of hallux and toes. What artery is it?

- A. *A. dorsalis pedis*
- B. *A. tibialis anterior*
- C. *A. tarsea medialis*
- D. *A. tarsea lateralis*
- E. *A. fibularis*

44. Representatives of a certain human population can be characterized by elongated body, height variability, decreased volume of muscle mass, increased length of limbs, decreased size and volume of rib cage, increased perspiration, decreased indices of base metabolism and fat synthesis. What type of adaptive evolution is it?

- A. Tropical
- B. Arctic
- C. Moderate
- D. Intermediate
- E. Mountain

45. A 59-year-old woman has been hospitalized in a surgical ward due to exacerbation of chronic osteomyelitis of the left shin. Blood test: leukocytes - $15,0 \cdot 10^9/l$. Leukogram: myelocytes - 0%, metamyelocytes - 8%, stab neutrophils - 28%, segmented neutrophils - 32%, lymphocytes - 29%, monocytes - 3%. Such blood count would be called:

- A. Regenerative left shift
- B. Right shift
- C. Hyperregenerative left shift
- D. Degenerative left shift
- E. Regenerative-degenerative left shift

46. A 41-year-old man has a history of recurrent attacks of heartbeats

(paroxysms), profuse sweating, headaches. Examination revealed hypertension, hyperglycemia, increased basal metabolic rate, and tachycardia. These clinical presentations are typical of the following adrenal pathology:

- A. Hyperfunction of the medulla
- B. Hypofunction of the medulla
- C. Hyperfunction of the adrenal cortex
- D. Hypofunction of the adrenal cortex
- E. Primary aldosteronism

47. During autopsy of a man, who died of acute transmural cardiac infarction, the following has been detected on the pericardium surface: fibrous whitish-brown deposit connecting parietal and visceral pericardial layers. What kind of inflammation occurred in the pericardium?

- A. Croupous
- B. Diphtheritic
- C. Serous
- D. Suppurative
- E. Granulomatous

48. A 12-year-old child developed nephritic syndrome (proteinuria, hematuria, cylindruria) 2 weeks after a case of tonsillitis, which is a sign of affected glomerular basement membrane in the kidneys. What mechanism is the most likely to cause the basement membrane damage?

- A. Immune complex
- B. Granulomatous
- C. Antibody-mediated
- D. Reagenic
- E. Cytotoxic

49. A man arrived into a traumatological department with a trauma of the right shoulder. Examination revealed a displaced humeral shaft fracture on the right in the middle one-third of the humerus; the patient cannot extend the fingers of his right hand. What nerve is damaged?

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

50. Work in a mine is known to cause inhalation of large amounts of coal dust. Inhaled coal dust can be detected in the following pulmonary cells:

- A. Alveolar macrophages
- B. Respiratory epithelial cells
- C. Secretory epithelial cells
- D. Capillary endothelial cells
- E. Pericapillary cells

51. What drug will be the most appropriate for a patient suffering from chronic gastritis with increased secretion?

- A. Pirenzepine
- B. Pancreatine
- C. Pepsin
- D. Aprotinin
- E. Chlorphentermine

52. A 63-year-old man, who has been suffering from chronic fibrous-cavernous pulmonary tuberculosis for 24 years, has been delivered to a nephrology department with uremia. Intravital diagnostic test for amyloid in the kidneys was positive. What amyloidosis is it in this case?

- A. Secondary systemic
- B. Primary systemic
- C. Localized (focal)
- D. Hereditary (genetic)
- E. Senile

53. Cells of a healthy liver actively synthesize glycogen and proteins. What organelles are the most developed in them?

- A. Granular and agranular endoplasmic reticulum
- B. Cell center
- C. Lysosomes
- D. Mitochondria
- E. Peroxisomes

54. Immune-enzyme assay has detected HBs antigen in blood serum. What disease is it characteristic of?

- A. Viral hepatitis type B
- B. Viral hepatitis type A
- C. AIDS
- D. Tuberculosis
- E. Syphilis

55. A patient has been diagnosed with gonorrhea. As fluoroquinolones are the drugs of choice for treatment of gonorrhea the patient should be prescribed:

- A. Ciprofloxacin
- B. Furazolidone
- C. Fluorouracil
- D. Sulfacarbamide (Urosulfanum)
- E. Cefazolin

56. Autopsy of a Middle-Eastern woman, who had been suffering from wasting fever for a long time, revealed enlarged blackened liver and spleen. Bone marrow was hyperplastic and black-colored as well. Cerebral cortex was smoky grey. What disease is it characteristic of?

- A. Malaria
- B. AIDS
- C. Epidemic typhus
- D. Sepsis
- E. Hepatitis

57. Human red blood cells contain no mitochondria. What is the main pathway for ATP production in these cells?

- A. Anaerobic glycolysis
- B. Aerobic glycolysis
- C. Oxidative phosphorylation
- D. Creatine kinase reaction
- E. Cyclase reaction

58. Atria of an experimental animal were superdistended with blood, which resulted in decreased reabsorption of Na^+ and water in renal tubules. This can be explained by the influence of the following factor on kidneys:

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

59. A woman gave birth to a stillborn baby with numerous malformations. What protozoan disease could cause intrauterine death?

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

60. A 42-year-old patient complains of pain in the epigastral area, vomiting; vomit masses have the color of coffee-grounds; the patient suffers from melena. Anamnesis records gastric ulcer disease. Blood formula: erythrocytes - $2,8 \cdot 10^{12}/l$, leukocytes - $8 \cdot 10^9/l$, Hb- 90 g/l. What complication is it?

- A. Hemorrhage
- B. Penetration
- C. Perforation
- D. Canceration
- E. Pyloric stenosis

61. A patient has been hospitalised with provisional diagnosis of virus B hepatitis. Serological reaction based on complementation of antigen with antibody chemically bound to peroxidase or alkaline phosphatase was used for disease diagnostics. What is the name of the applied serological reaction?

- A. Immune-enzyme analysis
- B. Radioimmunoassay
- C. Immunofluorescence test
- D. Bordet-Gengou test
- E. Antigen-binding assay

62. A patient with insulin-dependent diabetes mellitus has been administered insulin. After a certain period of time the patient developed fatigue, irritability, excessive sweating. What is the main mechanism of such presentations developing?

- A. Carbohydrate starvation of the brain
- B. Increased glycogenolysis
- C. Increased ketogenesis
- D. Increased lipogenesis
- E. Decreased glyconeogenesis

63. Examination of a 52-year-old woman has revealed a decrease in the amount of red blood cells and an increase in free hemoglobin in the blood plasma (hemoglobinemia). Color index is 0,85. What type of anemia is being observed in the patient?

- A. Acquired hemolytic
- B. Hereditary hemolytic
- C. Acute hemorrhagic
- D. Chronic hemorrhagic
- E. Anemia due to diminished erythropoiesis

64. Poisoning caused by mercury (II) chloride (corrosive sublimate) occurred in the result of safety rules violation. In 2 days the patient's diurnal diuresis was 620 ml. The patient developed headache, vomiting, convulsions, dyspnea; moist crackles were observed in the lungs. Name this pathology:

- A. Acute renal failure
- B. Chronic renal failure
- C. Uremic coma
- D. Glomerulonephritis
- E. Pyelonephritis

65. For people adapted to high external temperatures profuse sweating is not accompanied by loss of large volumes of sodium chloride. This is caused by the effect the following hormone has on perspiratory glands:

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

66. The processes of heat transfer in a naked person at room temperature have been studied. It was revealed that under these conditions the greatest amount of heat is transferred by:

- A. Heat radiation
- B. Heat conduction
- C. Convection
- D. Evaporation
- E. -

67. Due to destruction of certain structures of the brainstem an animal has lost its orientation reflexes in response to strong light stimuli. What structures were destroyed?

- A. Anterior quadrigeminal bodies
- B. Posterior quadrigeminal bodies
- C. Red nuclei
- D. Vestibular nuclei
- E. Substantia nigra

68. Urine analysis has shown high levels of protein and erythrocytes in urine. This can be caused by the following:

- A. Renal filter permeability
- B. Effective filter pressure
- C. Hydrostatic blood pressure in glomerular capillaries
- D. Hydrostatic primary urine pressure in capsule
- E. Oncotic pressure of blood plasma

69. Along with normal hemoglobin types there can be pathological ones in the organism of an adult. Name one of them:

- A. HbS
- B. HbF
- C. HbA₁
- D. HbA₂
- E. HbO₂

70. Development of both immune and allergic reactions is based upon the same mechanisms of immune system response to an antigen. What is the main difference between immune and allergic reactions?

- A. Development of tissue lesion
- B. Amount of released antigen
- C. Antigen structure
- D. Routes by which antigens are delivered into the body
- E. Hereditary predisposition

71. Histologic preparation stained with orcein demonstrates from 40 to 60 fenestrated elastic membranes within the middle coat of vessel. Name this vessel:

- A. Elastic artery
- B. Muscular artery
- C. Mixed type artery
- D. Muscular vein
- E. Nonmuscular vein

72. Angiocardiology of a 60-year-old man revealed constriction of a vessel located in

the left coronary sulcus of the heart. Name this pathological vessel:

- A. *Ramus circumflexus*
- B. *Ramus interventricularis posterior*
- C. *A. coronaria dextra*
- D. *V. cordis parva*
- E. *Ramus interventricularis anterior*

73. A comatose patient was taken to the hospital. He has a history of diabetes mellitus. Objectively: Kussmaul breathing, low blood pressure, acetone odor of breath. After the emergency treatment the patient's condition improved. What drug had been administered?

- A. Insulin
- B. Adrenaline
- C. Isadrinum
- D. Glibenclamide
- E. Furosemide

74. A patient complains of pain in the right lateral abdomen. Palpation revealed a dense, immobile, tumor-like formation. The tumor is likely to be found in the following part of the digestive tube:

- A. *Colon ascendens*
- B. *Colon transversum*
- C. *Colon descendens*
- D. *Colon sigmoideum*
- E. *Caecum*

75. A patient hospitalized due to mercury intoxication presents with the following processes in the kidneys: focal necrotic changes of tubules of major renal regions, edema, leukocyte infiltration and hemorrhages in the interstitial tissue, venous congestion. What condition developed in the patient?

- A. Acute necrotic nephrosis
- B. Acute glomerulonephritis
- C. Chronic renal failure
- D. Acute pyelonephritis
- E. Chronic pyelonephritis

76. According to phenotypic diagnosis a female patient has been provisionally diagnosed with X-chromosome polysomia. This diagnosis can be confirmed by cytogenetic method. What karyotype will confirm the diagnosis?

- A. 47(XXX)
- B. 48(XXXXY)
- C. 48(XXYY)
- D. 47(XXY)
- E. 46(XX)

77. An unconscious young man in the state of morphine intoxication has been delivered into an admission room. The patient's respi-

ration is slow and shallow due to suppression of the respiratory center. What kind of respiratory failure occurred in this case?

- A. Ventilatory disregulation
- B. Ventilatory obstruction
- C. Ventilatory restriction
- D. Perfusion
- E. Diffusion

78. On histological examination of uterine mucosa the following is detected: sinuous glands, serratiform and corkscrew-shaped elongated growths of stroma with cell proliferation. Make the diagnosis:

- A. Glandular endometrial hyperplasia
- B. Acute endometritis
- C. Leiomyoma
- D. Vesicular mole
- E. Placental polyp

79. 10 minutes after the beginning of heavy physical work a person demonstrates increase of erythrocyte number in blood from $4,0 \cdot 10^{12}/l$ to $4,5 \cdot 10^{12}/l$. What is the cause of this phenomenon?

- A. Erythrocytes exit from depot
- B. Suppression of erythrocyte destruction
- C. Erythropoiesis activation
- D. Increase of cardiac output
- E. Water loss

80. A patient has a traumatic injury of sternocleidomastoid muscle. This has resulted in a decrease of the following value:

- A. Inspiratory reserve volume
- B. Expiratory reserve volume
- C. Respiratory volume
- D. Residual volume
- E. Functional residual lung capacity

81. Autopsy of a 40-year-old woman, who died of cerebral hemorrhage during hypertensive crisis, revealed: upper-body obesity, hypertrichosis, hirsutism, stretchmarks on the skin of thighs and abdomen. Pituitary basophil adenoma is detected in the anterior lobe. What diagnosis is the most likely?

- A. Cushing's disease
- B. Essential hypertension
- C. Alimentary obesity
- D. Simmonds' disease
- E. Hypothalamic obesity

82. A specimen shows an organ covered with the connective tissue capsule with radiating trabeculae. There is also cortex containing lymph nodules, and medullary cords made of lymphoid cells. What organ is under study?

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

83. After a craniocerebral injury a patient has lost the ability to recognize shapes of objects by touch (stereognosis). What area of cerebral cortex normally contains the relevant center?

- A. Superior parietal lobule
- B. Inferior parietal lobule
- C. Supramarginal gyrus
- D. Postcentral gyrus
- E. Angular gyrus

84. Monoamine oxidase inhibitors are widely used as psychopharmacological drugs. They change the level of nearly all neurotransmitters in synapses, with the following neurotransmitter being the exception:

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

85. A worker of an agricultural enterprise had been suffering from an acute disease with aggravating intoxication signs, which resulted in his death. On autopsy: the spleen is enlarged, flaccid, dark cherry-red in the section, yields excessive pulp scrape. Soft meninges of fornix and base of the brain are edematous and saturated with blood ("cardinal's cap"). Microscopically: serous-hemorrhagic inflammation of meninges and cerebral tissues. Make the diagnosis:

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

86. Autopsy of an 8-month-old boy, who died of severe pneumonia complicated with sepsis, revealed absence of thymus. Lymph nodes have no lymphoid follicles and cortical substance. In the spleen the follicles are decreased in size and have no light centers. What is the cause of such changes?

- A. Thymus agenesis
- B. Thymus aplasia
- C. Thymus atrophy
- D. Thymus hypoplasia
- E. Accidental thymic involution

87. A patient has been delivered into a surgical ward with an incised wound of the anterior surface of the shoulder in its lower

one-third. Flexing function was disrupted in the shoulder and elbow joints, which is caused by the damage to the:

- A. Biceps muscle of the arm
- B. Triceps muscle of the arm
- C. Anconeus muscle
- D. Deltoid muscle
- E. Coracobrachial muscle

88. A 40-year-old patient suffers from bronchial asthma and prolonged tachycardia. Choose the optimal drug for rapid relief of bronchial spasm in the given case:

- A. Salbutamol
- B. Adrenalin hydrochloride
- C. Ephedrine hydrochloride
- D. Orciprenaline
- E. Isoprenaline (Isadrinum)

89. A patient with urolithiasis has developed severe pain attacks. For pain shock prevention he was administered an antispasmodic narcotic analgesic along with atropine. Name this drug:

- A. Promedol
- B. Nalorphine
- C. Tramadol
- D. Ethylmorphine hydrochloride
- E. Morphine hydrochloride

90. A patient suffers from acute cardiopulmonary failure with pulmonary edema. What diuretic should be prescribed in the given case?

- A. Furosemide
- B. Triamterene
- C. Spironolactone
- D. Hydrochlorothiazide (Dichlothiazidum)
- E. Acetazolamide (Diacarb)

91. 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 to remove the complication?

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

92. The key reaction of fatty acid synthesis is production of malonyl-CoA. What metabolite is the source of malonyl-CoA synthesis?

- A. Acetyl-CoA
- B. Succinyl-CoA
- C. Acyl-CoA
- D. Malonate
- E. Citrate

93. A family of healthy students, who have arrived from Africa, gave birth to a child with signs of anemia. The child has died shortly after. Examination has revealed that the child's erythrocytes are abnormally crescent-shaped. The disease is characterized by autosomal recessive inheritance. Determine the genotype of the child's parents:

- A. Aa x Aa
- B. Aa x aa
- C. AA x AA
- D. aa x aa
- E. Aa x AA

94. At a certain stage of cell cycle chromosomes reach cellular poles, undergo despiralization; nuclear membranes are being formed around them; nucleolus is restored. What stage of mitosis is it?

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

95. Cardiac arrest occurred in a patient during a surgery of the small intestine. What regulatory mechanisms resulted in the cardiac arrest in this case?

- A. Unconditioned parasympathetic reflexes
- B. Unconditioned sympathetic reflexes
- C. Conditioned parasympathetic reflexes
- D. Conditioned sympathetic reflexes
- E. Metasympathetic reflexes

96. Vestibular receptors of semicircular canals of an animal have been destroyed. What reflexes will disappear as a result?

- A. Statokinetic reflex during movements with angular acceleration
- B. Statokinetic reflex during movements with linear acceleration
- C. Head-righting reflex
- D. Body-righting reflex
- E. Primary orienting reflex

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

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

98. Blood group of a 30-year-old man has been determined before a surgery. The blood was Rhesus-positive. Agglutination did not occur with standard 0 (I), A (II), and B (III) serums. The blood belongs to the following group:

- A. 0 (I)
- B. A (II)
- C. B (III)
- D. AB (IV)
- E. -

99. Histological specimen of a hemopoietic organ shows clusters of node- and band-shaped lymphocytes that along with stroma elements compose cortical and medullar substances. Name this organ:

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

100. It is known that in catecholamine metabolism a special role belongs to monoamine oxidase (MAO). This enzyme inactivates mediators (noreadrenalin, adrenalin, dopamine) by:

- A. Oxidative deamination
- B. Adjoining amino groups
- C. Removing methyl groups
- D. Carboxylation
- E. Hydrolysis

101. Cellular composition of exudate largely depends on the etiological factor of inflammation. What leukocytes are the first to be involved in the focus of inflammation caused by pyogenic bacteria?

- A. Neutrophil granulocytes
- B. Monocytes
- C. Myelocytes
- D. Eosinophilic granulocytes
- E. Basophils

102. A surgeon has detected inflammation of the Meckel's diverticulum in a patient. During surgical invasion it can be located in the:

- A. Ileum
- B. Jejunum
- C. Colon
- D. Duodenum
- E. Sigmoid colon

103. A patient complains of acute pain attacks in the right lumbar region. During examination the nephrolithic obturation of the right ureter in the region between its abdominal and pelvic segments was detected. What anatomical boundary exists between those two segments?

- A. *Linea terminalis*
- B. *Linea semilunaris*
- C. *Linea arcuata*
- D. *Linea transversa*
- E. *Linea inguinalis*

104. A patient died of cancerous cachexia with primary localization of cancer in the stomach. Autopsy revealed acutely enlarged liver with uneven surface and numerous protruding nodes; the nodes had clear margins in the section, rounded shape, gray-pink color, varying density, sometimes contained necrotic foci. Histologically: there are atypical cells in the nodes. What pathologic process occurred in the liver?

- A. Cancer metastases
- B. Abscesses
- C. Regeneratory nodes
- D. Infarction
- E. Hepatic cancer

105. A patient has insufficient blood supply to the kidneys, which caused the development of pressor effect due to the constriction of arterial resistance vessels. This is the result of the vessels being greatly affected by the following substance:

- A. Angiotensin II
- B. Angiotensinogen
- C. Renin
- D. Catecholamines
- E. Norepinephrine

106. Experimental stimulation of sympathetic nerve branches that innervate heart caused an increase in force of heart contractions because membrane of typical cardiomyocytes permitted an increase in:

- A. Calcium ion entry
- B. Calcium ion exit
- C. Potassium ion exit
- D. Potassium ion entry
- E. Calcium and potassium ion exit

107. Parents of a 5-year-old child report him to have frequent colds that develop into pneumonias, presence of purulent rashes on the skin. Laboratory tests have revealed the following: absence of immunoglobulins of any type; naked cells are absent from the lymph nodes punctate. What kind of immune disorder is it?

- A. X-linked hypogammaglobulinemia (Bruton type agammaglobulinemia)
- B. Autosomal recessive agammaglobulinemia (Swiss type)
- C. Hypoplastic anemia
- D. Agranulocytosis
- E. Louis-Barr syndrome

108. A microslide contains the specimen of a gland composed of several secretory sacculle-shaped parts that open in the common excretory duct. What gland is it?

- A. Simple branched alveolar gland
- B. Compound branched alveolar gland
- C. Simple unbranched alveolar gland
- D. Compound unbranched alveolar gland
- E. Simple branched tubular gland

109. Microelectrode technique allowed to register a potential following "all-or-none" law and capable of undecremental spreading. Specify this potential:

- A. Action potential
- B. Excitatory postsynaptic potential
- C. Rest potential
- D. Inhibitory postsynaptic potential
- E. Receptor potential

110. Examination of a patient revealed hypertrophy and inflammation of lymphoid tissue, edema of mucous membrane between palatine arches (acute tonsillitis). What tonsil is normally situated in this area?

- A. *Tonsilla palatina*
- B. *Tonsilla pharyngealis*
- C. *Tonsilla tubaria*
- D. *Tonsilla lingualis*
- E. -

111. Histological specimen of an ovary demonstrates a spherical structure composed of large glandular cells containing lutein. What hormone is produced by the cells of this structure?

- A. Progesterone
- B. Estrogens
- C. Testosterone
- D. Corticosterone
- E. Aldosterone

112. A patient, who has been subsisting exclusively on polished rice, has developed polyneuritis due to thiamine deficiency. What substance is an indicator of such avitaminosis, when it is excreted with urine?

- A. Pyruvic acid
- B. Malate
- C. Methylmalonic acid
- D. Uric acid
- E. Phenyl pyruvate

113. When blood circulation in the damaged tissue is restored, lactate accumulation stops and glucose consumption decelerates. These metabolic changes are caused by activation of the following process:

- A. Aerobic glycolysis
- B. Anaerobic glycolysis
- C. Lipolysis
- D. Gluconeogenesis
- E. Glycogen biosynthesis

114. A 67-year-old patient complains of periodic heartache, dyspnea during light physical activities. ECG reveals extraordinary contractions of heart ventricles. Such arrhythmia is called:

- A. Extrasystole
- B. Bradycardia
- C. Tachycardia
- D. Flutter
- E. Fibrillation

115. In investigation of serum proteins various physical and physicochemical methods can be used. In particular, serum albumins and globulins can be separated by the method of:

- A. Electrophoresis
- B. Polarography
- C. Dialysis
- D. Spectrography
- E. Refractometry

116. Pupil dilation occurs when a person steps from a light room into a dark one. What reflex causes such a reaction?

- A. Sympathetic unconditioned reflex
- B. Sympathetic conditioned reflex
- C. Metasympathetic reflex
- D. Parasympathetic unconditioned reflex
- E. Parasympathetic conditioned reflex

117. Cells of a person working in the Chernobyl Exclusion Zone have undergone a mutation in DNA molecule. However, with time the damaged interval of DNA molecule has been restored to its initial structure with a specific enzyme. In this case the following occurred:

- A. Repair
- B. Replication
- C. Transcription
- D. Reverse transcription
- E. Translation

118. Autopsy of a 5-year-old child revealed in the area of the vermis of cerebellum a soft grayish-pink node 2 cm in diameter with blurred margins and areas of haemorrhage. Histologically this tumour consisted of atypical monomorphous small round cells

with large polymorphous nuclei. What tumour is it?

- A. Medulloblastoma
- B. Meningioma
- C. Glioblastoma
- D. Astrocytoma
- E. Oligodendroglioma

119. When studying the signs of pulmonary ventilation, reduction of forced expiratory volume has been detected. What is the likely cause of this phenomenon?

- A. Obstructive pulmonary disease
- B. Increase of respiratory volume
- C. Increase of inspiratory reserve volume
- D. Increase of pulmonary residual volume
- E. Increase of functional residual lung capacity

120. A specimen of a parenchymal organ shows poorly delineated hexagonal lobules surrounding a central vein, and the interlobular connective tissue contains embedded triads (an artery, a vein and an excretory duct). What organ is it?

- A. Liver
- B. Pancreas
- C. Thymus
- D. Spleen
- E. Thyroid

121. A patient had a trauma that caused dysfunction of motor centers regulating activity of head muscles. In what parts of cerebral cortex can these centers normally be located?

- A. Inferior part of precentral gyrus
- B. Superior part of precentral gyrus
- C. Supramarginal gyrus
- D. Superior parietal lobule
- E. Angular gyrus

122. At the post-mortem examination the stomach of a patient with renal failure was found to have a yellow-brown coating on the thickened mucosa. The coating was firmly adhering to its surface and had significant thickness. Microscopy revealed congestion and necrosis of mucosal and submucosal layers, fibrin presence. What is the most likely diagnosis?

- A. Fibrinous gastritis
- B. Croupous gastritis
- C. Gastric abscess
- D. Esogastritis
- E. Corrosive gastritis

123. A 60-year-old man suffering from chronic hepatitis frequently observes nasal and gingival hemorrhages, spontaneous hemorrhagic rashes on the skin and mucosa.

Such presentations result from:

- A.** Decreased synthesis of prothrombin and fibrinogen
- B.** Increased blood content of aminotransferases
- C.** Decreased synthesis of serum albumins
- D.** Increased blood content of macroglobulins and cryoglobulins
- E.** Decreased blood content of cholinesterase

124. Leading symptoms of primary hyperparathyroidism are osteoporosis and renal damage resulting in urolithiasis development. What substances are the basis of uroliths in such cases?

- A.** Calcium phosphate
- B.** Uric acid
- C.** Cystine
- D.** Bilirubin
- E.** Cholesterol

125. An oncology department has admitted a patient with suspected pulmonary tumor. On examination a pathology localized within the lower lobe of the right lung was detected. How many bronchopulmonary segments are there in this lobe?

- A.** 5
- B.** 6
- C.** 4
- D.** 3
- E.** 2

126. A 45-year-old woman suffers from arterial hypertension with high blood concentration of angiotensin II. What antihypertensive drug is the most recommended in the given case?

- A.** Lisinopril
- B.** Prazosin
- C.** Metoprolol
- D.** Reserpine
- E.** Verapamil

127. An alcoholic suffers from alcoholic psychosis with evident psychomotor agitation. What neuroleptic drug should be administered for emergency aid?

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

128. In one of Polesia regions there was an outbreak of helminthiasis manifested by cramps and facial edemas. The developed preventive measures in particular included ban for eating infested pork even after heat processing. What helminthiasis was the

case?

- A.** Trichinosis
- B.** Taeniarhynchosis
- C.** Teniasis
- D.** Echinococcosis
- E.** Alveococcosis

129. A patient demonstrates functional loss of nasal halves of the retinas. What area of visual pathways is affected?

- A.** Optic chiasm
- B.** Left optic tract
- C.** Right optic tract
- D.** Left optic nerve
- E.** Right optic nerve

130. A 26-year-old woman with bronchitis has been administered a broad spectrum antibiotic as a causal treatment drug. Specify this drug:

- A.** Doxycycline
- B.** Interferon
- C.** BCG vaccine
- D.** Ambroxol
- E.** Dexamethasone

131. A 16-year-old young man suffering from seasonal allergic rhinitis has been prescribed a highly active second-generation H1 blocker, which can be characterized by absence of marked sedative action. Name this drug:

- A.** Loratadine
- B.** Pipolphen
- C.** Chloropyramine (Suprastin)
- D.** Indometacin
- E.** Erythromycin

132. Examination of a 56-year-old woman with a history of type 1 diabetes mellitus revealed a disorder of protein metabolism that is manifested by aminoacidemia in the laboratory blood test values, and clinically by the delayed wound healing and decreased synthesis of antibodies. Which of the following mechanisms causes the development of aminoacidemia?

- A.** Increased proteolysis
- B.** Albuminosis
- C.** Decrease in the concentration of amino acids in blood
- D.** Increase in the oncotic pressure in the blood plasma
- E.** Increase in low-density lipoprotein level

133. A patient with injury sustained to a part of the central nervous system demonstrates disrupted coordination and movement amplitude, muscle tremor during volitional movements, poor muscle tone. What part of the central nervous system was injured?

- A. Cerebellum
- B. Medulla oblongata
- C. Olfencephalon
- D. Mesencephalon
- E. Prosencephalon

134. A 36-year-old patient has been administered a depolarizing muscle relaxant during a surgery. Name this drug:

- A. Dithylinum
- B. Proserin
- C. Pipecuronium bromide (Arduan)
- D. Diazepam
- E. Aminazine

135. A man has suffered multiple bone fractures of his lower extremities during a traffic accident. During transportation to a hospital his condition was further aggravated: blood pressure decreased, there were signs of pulmonary artery embolism. What kind of embolism is the most likely in the given case?

- A. Fat embolism
- B. Air embolism
- C. Gas embolism
- D. Tissue embolism
- E. Thromboembolism

136. UN volunteers have arrived in Nigeria to assist the locals in aftermath of earthquakes. What drug should they prescribe for individual chemoprophylaxis of malaria?

- A. Chingamin
- B. Pyrantel
- C. Pyrimethamine (Chloridinum)
- D. Primaquine
- E. Interferon (Laferon)

137. After an extended treatment with sulfanamides a patient has developed macrocytic anemia. Production of active forms of the following vitamin is disrupted in such a condition:

- A. Folic acid
- B. Thiamine
- C. Riboflavin
- D. Pyridoxine
- E. Cyanocobalamin

138. A woman resting in the countryside has been stung by a bee. Immediately after she developed pain in the stung area. In a few minutes there developed a vesicle, erythema and intense itch; later - urticaria and expiratory dyspnea. What factors resulted in the patient developing expiratory dyspnea?

- A. Histamine
- B. Hageman's factor
- C. Lysosomal enzymes
- D. Noradrenaline
- E. Adrenaline

139. Autopsy of a 28-year-old patient, who had been suffering from rheumatism and died of heart failure, revealed pancarditis. Histological investigation of myocardium of the left ventricle posterior wall and interventricular septum detected perivascular cellular focal infiltrates composed of macrophages and creating palisade structures surrounding areas of fibrinoid necrosis. Determine the type of myocarditis:

- A. Granulomatous
- B. Diffuse interstitial productive
- C. Diffuse interstitial exudative
- D. Focal interstitial exudative
- E. -

140. When ascending to the top of Elbrus, a mountain climber experiences oxygen starvation, dyspnea, palpitations, and numbness of the extremities. What kind of hypoxia has developed in the mountain climber?

- A. Hypoxic
- B. Circulatory
- C. Hemic
- D. Tissue
- E. Cardiac

141. A 2-year-old boy is diagnosed with Down syndrome. What chromosomal changes can cause this disease?

- A. Trisomy 21
- B. Trisomy 13
- C. Trisomy X
- D. Trisomy 18
- E. Monosomy X

142. A 62-year-old patient has been hospitalized due to massive cerebral hemorrhage. Blood pressure is 70/30 mm Hg, heart rate is 120/min., respiratory rate is 4/min., unconscious, no response to external stimuli. Such condition can be determined as:

- A. Coma
- B. Shock
- C. Collapse
- D. Stress
- E. Agony

143. A 3-year-old girl with mental retardation has been diagnosed with sphingomyelin lipidosis (Niemann-Pick disease). In this condition synthesis of the following substance is disrupted:

- A. Sphingomyelinase
- B. Glycosyltransferase
- C. Sphingosine
- D. Ceramides
- E. Gangliosides

144. What condition may develop 15-30 minutes after re-administration of an antigen as a result of the increased level of antibodies, mainly IgE, that are adsorbed on the surface of target cells, namely tissue basophils (mast cells) and blood basophils?

- A. Anaphylaxis
- B. Antibody-dependent cytotoxicity
- C. Delayed-type hypersensitivity
- D. Immune complex hyperresponsiveness
- E. Serum sickness

145. Local anesthetics (novocaine, lidocaine and others) decreases pain sensitivity of tissues by blocking Na^+ and K^+ ions from permeating membranes of nerve fibers and endings. Such mechanism of drug action is called:

- A. Membrane ionic
- B. Receptor
- C. Enzyme
- D. Antienzyme
- E. Direct chemical

146. After a road accident a victim has tachycardia, arterial blood pressure 130/90 mm Hg, tachypnoe, the skin is pale and dry, excitation of central nervous system is observed. What shock stage is the patient most likely in?

- A. Erectile
- B. Terminal
- C. Torpid
- D. Preshock (compensation stage)
- E. Agony

147. A woman complaining of sharp pain in her lower abdomen has been delivered into an admission room. A gynecologist on examination makes a provisional diagnosis of extrauterine pregnancy. What anatomical structure should be punctated to confirm diagnosis?

- A. Rectouterine pouch
- B. Utriculosaccular chamber
- C. Recto-vesical pouch
- D. Retropubic space
- E. Intersigmoidal recess

148. A passenger of a fixed-run taxi has a sudden and expressed attack of tachycardia. A doctor travelling by the same taxi has managed to slow down his heart rate by pressing upon the eyeballs and thus causing

the following reflex:

- A. Dagnini-Aschner reflex
- B. Bainbridge reflex
- C. Holtz's reflex
- D. Hering-Breuer reflex
- E. Frank-Starling mechanism

149. A 47-year-old man developed intestinal colic against the background of essential hypertension. In this situation it would be the most efficient to arrest the colic by administering drugs of the following group:

- A. Myotropic antispasmodics
- B. Anticholinesterase agents
- C. Sympathomimetics
- D. M-cholinomimetics
- E. Adrenomimetics

150. A therapist has an appointment with a 40-year-old patient complaining of recurrent pain attacks in his hallux joints and their swelling. Urine analysis revealed its marked acidity and pink color. What substances can cause such changes in urine?

- A. Uric acid salt
- B. Chlorides
- C. Ammonium salts
- D. Calcium phosphate
- E. Magnesium sulfate

151. Exophthalmus observed during thyrotoxicosis is caused by accumulation of highly water-binding substances within the retrobulbar tissues. Name these substances:

- A. Glycosaminoglycans
- B. Cholesterol
- C. ATP
- D. Kreatine
- E. Phospholipids

152. A patient presents with dry peeling skin, frequent cases of acute respiratory diseases, xerophthalmia. What vitamin preparation should be prescribed in this case?

- A. Retinol acetate
- B. Thiamine
- C. Cyanocobalamin
- D. Menadione (Vikasolum)
- E. Ergocalciferol

153. Parenchyma of an organ is composed of pseudounipolar neurons localized under the capsule of connective tissue. Central place belongs to nerve fibers. Name this organ:

- A. Spinal ganglion
- B. Sympathetic ganglion
- C. Intramural ganglion
- D. Nerve trunk
- E. Spinal cord

154. A patient consulted a physician about chest pain, cough, fever. Roentgenography of lungs revealed eosinophilic infiltrates that were found to contain larvae. What kind of helminthiasis are these presentations typical of?

- A. Ascariasis
- B. Echinococcosis
- C. Fascioliasis
- D. Cysticercosis
- E. Trichinosis

155. During appendectomy a patient had the *a. appendicularis ligated*. This vessel branches from the following artery:

- A. *A. ileocolica*
- B. *A. colica dextra*
- C. *A. colica media*
- D. *A. sigmoidea*
- E. *A. mesenterica inferior*

156. A patient with signs of osteoporosis and urolithiasis has been admitted to an endocrinology department. Blood test revealed hypercalcemia and hypophosphatemia. These changes are associated with abnormal synthesis of the following hormone:

- A. Parathyroid hormone
- B. Calcitonin
- C. Cortisol
- D. Aldosterone
- E. Calcitriol

157. Prescription of penicillin G sodium salt has caused development of neurotoxic effects (hallucinations, convulsions). Such reaction is the result of antagonism with the following neurotransmitter:

- A. GABA
- B. Dopamine
- C. Serotonin
- D. Adenosine
- E. Acetylcholine

158. A 30-year-old woman exhibits signs of virilism (growth of body hair, balding temples, menstrual disorders). This condition can be caused by overproduction of the following hormone:

- A. Testosterone
- B. Oestriol
- C. Relaxin
- D. Oxytocin
- E. Prolactin

159. During a surgery for femoral hernia a surgeon operates within the boundaries of femoral trigone. What structure makes up its upper margin?

- A. *Lig. inguinale*
- B. *Arcus iliopectineus*
- C. *Lig. lacunare*
- D. *Lig. pectinale*
- E. *Fascia lata*

160. Activation of a number of hemostatic factors occurs through their joining with calcium ions. What structural component allows for adjoining of calcium ions?

- A. Gamma-carboxyglutamic acid
- B. Gamma-aminobutyric acid
- C. Gamma-oxybutyric acid
- D. Hydroxyproline
- E. Monoamine-dicarboxylic acids

161. A patient has arterial hypertension. What long-acting calcium channel blocker should be prescribed?

- A. Amlodipine
- B. Octadine
- C. Pyrroxanum
- D. Atenolol
- E. Reserpine

162. Material obtained from a patient contains several types of microorganisms (staphylococci and streptococci) causative of the patient's disease. Name this type of infection:

- A. Mixed infection
- B. Superinfection
- C. Reinfection
- D. Consecutive infection
- E. Coinfection

163. A laboratory has been investigating virulence of a diphtheria agent. In the process of the experiment the infection was introduced intraperitoneally into test animals. The dosage of bacteria resulting in 95% mortality of test animals was found. What unit of virulence measurement was determined?

- A. DLM
- B. DCL
- C. LD50
- D. ID
- E. LD5

164. A patient complains of palpitations

after stress. Pulse is 104/min., P-Q=0,12 seconds, there are no changes in QRS complex. What type of arrhythmia does the patient have?

- A. Sinus tachycardia
- B. Sinus bradycardia
- C. Sinus arrhythmia
- D. Ciliary arrhythmia
- E. Extrasystole

165. A patient consulted a dentist about restricted mouth opening (trismus). He has a history of a stab wound of the lower extremity. What infection can cause these symptoms?

- A. Tetanus
- B. Brucellosis
- C. Whooping cough
- D. Wound anaerobic infection
- E. Tularemia

166. Patient's systolic blood pressure is 90 mm Hg, diastolic - 70 mm Hg. Such blood pressure is caused by decrease of the following factor:

- A. Pumping ability of the left heart
- B. Pumping ability of the right heart
- C. Aortic compliance
- D. Total peripheral resistance
- E. Vascular tone

167. A 29-year-old man with a knife wound of the neck presents with bleeding. During the initial debridement of the wound a surgeon revealed the injury of a vessel situated along the lateral edge of the sternocleidomastoid muscle. Specify this vessel:

- A. *V. jugularis externa*
- B. *V. jugularis anterior*
- C. *A. carotis externa*
- D. *A. carotis interna*
- E. *V. jugularis interna*

168. A 6-year-old child suffers from delayed growth, disrupted ossification processes, decalcification of the teeth. What can be the cause?

- A. Vitamin D deficiency
- B. Decreased glucagon production
- C. Insulin deficiency
- D. Hyperthyroidism
- E. Vitamin C deficiency

169. A patient addressed a hospital with complaints of lost sensitivity of the skin of the little finger. What nerve is the most likely to be damaged?

- A. Ulnar
- B. Median
- C. Radial
- D. Musculocutaneous
- E. Medial cutaneous nerve of the forearm

170. A 30-year-old patient's blood test has revealed the following: erythrocyte count is $6 \cdot 10^{12}/l$, hemoglobin is 10,55 mmol/l. Vaquez's disease was diagnosed. Name the leading part of pathogenesis:

- A. Neoplastic erythroid hyperplasia
- B. Iron-deficiency
- C. B_{12} -deficiency
- D. Hypoxia
- E. Acidosis

171. Pancreas is known as a mixed gland. Endocrine functions include production of insulin by beta cells. This hormone affects metabolism of carbohydrates. What is its effect on the activity of glycogen phosphorylase (GP) and glycogen synthase (GS)?

- A. It inhibits GP and activates GS
- B. It activates both GP and GS
- C. It inhibits both GP and GS
- D. It activates GP and inhibits GS
- E. It does not affect the activity of GP and GS

172. This year influenza epidemic is characterised by patients' body temperature varying from $36,9^{\circ}C$ to $37,9^{\circ}C$. Such fever is called:

- A. Subfebrile
- B. High
- C. Hyperpyretic
- D. Apyretic
- E. Moderate

173. Fructosuria is known to be connected with inherited deficiency of fructose 1-phosphate aldolase. What product of fructose metabolism will accumulate in the organism resulting in toxic action?

- A. Fructose 1-phosphate
- B. Glucose 1-phosphate
- C. Glucose 6-phosphate
- D. Fructose 1,6-biphosphate
- E. Fructose 6-phosphate

174. A woman complains of visual impairment. Examination revealed obesity in the patient and her fasting plasma glucose level is hyperglycemic. What diabetes complication can cause visual impairment/blindness?

- A. Microangiopathy
- B. Macroangiopathy
- C. Atherosclerosis
- D. Neuropathy
- E. Glomerulopathy

175. Administration of doxycycline hydrochloride has caused an imbalance of the symbiotic intestinal microflora. Specify the kind of imbalance caused by the antibiotic therapy:

- A. Dysbacteriosis
- B. Sensibilization
- C. Idiosyncrasy
- D. Superimposed infection
- E. Bacteriosis

176. Cholesterol content in blood serum of a 12-year-old boy is 25 mmol/l. Anamnesis states hereditary familial hypercholesterolemia caused by synthesis disruption of receptor-related proteins for:

- A. Low-density lipoproteins
- B. High-density lipoproteins
- C. Chylomicrons
- D. Very low-density lipoproteins
- E. Middle-density lipoproteins

177. During recording of a spirogram a patient calmly exhaled. How do we call the volume of air remaining in the lungs?

- A. Functional residual capacity
- B. Pulmonary residual volume
- C. Expiratory reserve volume
- D. Tidal volume
- E. Vital capacity of lungs

178. A 40-year-old woman was diagnosed with glomerulonephritis based on her clinical symptoms and the results of urine analysis. Anamnesis states chronic tonsillitis. What microorganisms are the most likely cause for the kidney damage in this case?

- A. Streptococci
- B. Staphylococci
- C. Escherichia
- D. Mycoplasma
- E. Meningococci

179. A man is suffering from diarrhea. In summer he spent his vacation in the south at the sea coast. Bacteria with the following properties were detected in his feces: gram-negative curved mobile monotrichous bacilli that do not produce spores or capsules. Bacilli are undemanding to nutrient medium but require alkaline reaction (pH 8,5-9,5). Described are the agents of the following enteric infection:

- A. Cholera
- B. Shigellosis
- C. Typhoid fever
- D. Colienteritis
- E. Pseudotuberculosis

180. An athlete (long-distance runner) during a contest developed a case of acute cardiac insufficiency. This pathology resulted from:

- A. Cardiac volume overload
- B. Disrupted coronary circulation
- C. Direct damage to myocardium
- D. Pericardium pathology
- E. Cardiac pressure overload

181. Parkinson's disease is caused by disruption of dopamine synthesis. What brain structure synthesizes this neurotransmitter?

- A. Substantia nigra
- B. Globus pallidus
- C. Corpora quadrigemina
- D. Red nucleus
- E. Hypothalamus

182. Name the halogen-containing antiseptic with fungicidal properties, which is used to treat dermatomycosis:

- A. Iodine solution
- B. Formalin solution
- C. Methylene blue
- D. Brilliant green
- E. Boric acid solution

183. Due to severe pain syndrome a patient was prescribed a narcotic analgesic. Name this drug:

- A. Morphine
- B. Metamizole (Analgin)
- C. Nimesulide
- D. Dimethyl sulfoxide
- E. Indometacin

184. During pathomorphological renal investigation of a patient, who for a long time had been suffering from osteomyelitis and died of progressing renal failure, the following was revealed: deposits of homogeneous eosinophilic masses in glomerular mesangium, arterial and arteriolar walls, and stroma, which colored red when stained with Congo red. What pathological process is this?

- A. Amyloidosis
- B. Mucoïd swelling
- C. Calcinosis
- D. Carbohydrate degeneration
- E. Hyalinosis

185. During experiment a dog has developed conditioned digestive reflex in

response to a sound stimulus. This conditioned reflex will not be exhibited anymore after the extirpation of the following areas of the cerebral hemispheres:

- A. Temporal lobe on both sides
- B. Occipital lobe on one side
- C. Parietal lobe on both sides
- D. Temporal lobe on one side
- E. Occipital lobe on both sides

186. Coenzym A participates in numerous important metabolic reactions. It is a derivative of the following vitamin:

- A. Pantothenic acid
- B. Thiamine
- C. Niacin
- D. Calciferol
- E. Ubiquinone

187. A patient diagnosed with acute dysentery has been treated for 3 days in an infectious diseases hospital. On admission there were complaints of high temperature, stomachache and fluid excrements with mucus up to 8-10 times a day. What sample should be taken for analysis?

- A. Feces
- B. Urine
- C. Bile
- D. Liquor
- E. Blood

188. A patient with arthritis has been prescribed an anti-inflammatory selective COX-2 inhibitor. Select this drug among those given below:

- A. Celecoxib
- B. Phenylbutazone (Butadion)
- C. Dimethylsulfoxide (Dimexid)
- D. Indometacin
- E. Metamizole (Analgin)

189. A person with the fourth blood group (genotype IAIB) has in erythrocytes both antigen A controlled by allele IA and antigen B controlled by allele IB. This phenomenon is an example of the following gene interaction:

- A. Codominance
- B. Complementarity
- C. Semidominance
- D. Polymery
- E. Epistasis

190. A patient with diabetes mellitus suffers from persistently nonhealing surgical wound, which is a sign of disrupted tissue trophism. What is the cause of such disorder?

- A. Disruption of protein metabolism regulation
- B. Hypoglycemia
- C. Ketonemia
- D. Increased lipid catabolism
- E. Anemia

191. A patient with signs of intestinal infection (vomiting, diarrhea, abdominal pain) has been presenting with increasing symptoms of intoxication for three days. Papular rash appeared on the uncovered skin areas and spread to the torso. A doctor suspected pseudotuberculosis. What laboratory test allows confirming this diagnosis within the first week from the onset of disease?

- A. Bacteriological
- B. Microscopic
- C. Serological
- D. Allergic
- E. Biological

192. A microslide demonstrates an organ with its wall consisting of three membranes. The inner membrane has tubular glands and undergoes cyclic changes. Name this organ:

- A. Uterus
- B. Esophagus
- C. Vagina
- D. Ureter
- E. Urinary bladder

193. A patient with femoral neck fracture, who for a long time had to remain in bed in a forced (supine) position, has developed dark-brown lesions along the backbone; soft tissues are swollen, in the areas of maceration there is a foul-smelling liquid. Name the clinicopathologic type of necrosis:

- A. Bedsore
- B. Infarction
- C. Sequestrum
- D. Coagulation necrosis
- E. Dry gangrene

194. A patient is 20 years old, an athlete. He addressed a doctor with complaints of fatigue, fever up to 38°C - 40°C . Objectively: the liver and spleen are enlarged, lymph nodes on palpation are slightly enlarged, dense, painless. Blood test: Hb- 100 g/l; erythrocytes - $2,9 \cdot 10^{12}/\text{l}$; leukocytes - $4,4 \cdot 10^9/\text{l}$. Leukogram: 68% of blast cells. Cytochemical investigation of blast cells revealed negative reactions to glycogen, peroxidase, non-specific esterase, lipids. Name this disease:

- A. Acute undifferentiated leukemia
- B. Acute myeloid leukemia
- C. Acute monoblastic leukemia
- D. Acute lymphoblastic leukemia
- E. Acute megakaryoblastic leukemia

195. Impression smear of mucosa biopsy material has been obtained from a patient with peptic ulcer disease of the stomach. Gram-negative arcuate bent microorganisms were detected, urease activity test was positive. What microorganisms were detected in the patient?

- A. Helicobacter
- B. Spirochete
- C. Spirilla
- D. Leptospira
- E. Treponema

196. A patient after disrupted cerebral circulation has developed paralysis. Choose the anticholinesterase drug to be prescribed in this case:

- A. Proserin
- B. Cordiamin
- C. Aceclidine
- D. Methacin
- E. Hexamethonium (Benzohexonium)

197. 30 minutes after drinking mango juice a child suddenly developed a local swelling in the area of the soft palate, which impeded swallowing and, eventually, respiration. Mucosa of the swollen area was hyperemic and painless. Blood test revealed moderate eosinophilia. Body temperature was normal. Anamnesis states that the elder sister of the child has been suffering from bronchial asthma attacks. What kind of

edema has developed in the child?

- A. Allergic
- B. Inflammatory
- C. Cardiac
- D. Alimentary
- E. Hepatic

198. During examination of a patient a doctor should use anatomical division of anterior abdominal wall into regions for more precise diagnostics. How many regions can abdomen be divided into?

- A. 9
- B. 8
- C. 6
- D. 5
- E. 4

199. A child has a wound located posterior to the mastoid process. Bright red blood flows from the wound. Damaged are the branches of the following artery:

- A. *A. occipitalis*
- B. *A. temporalis superior*
- C. *A. maxillaris*
- D. *A. carotis externa*
- E. *A. carotis interna*

200. When investigating human saliva it is necessary to assess its hydrolytic properties. What substance should be used as a substrate in the process?

- A. Starch
- B. Proteins
- C. Fats
- D. Fiber
- E. Amino acids

INSTRUCTIONAL BOOK

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List of abbreviations

A/G	Albumin/globulin ratio	HR	Heart rate
A-ANON	Alcoholics anonymous	IDDM	Insulin dependent diabetes mellitus
ACT	Abdominal computed tomography	IFA	Immunofluorescence assay
ADP	Adenosine diphosphate	IHD	Ischemic heart disease
ALT	Alanin aminotransferase	IU	International unit
AMP	Adenosine monophosphate	LDH	Lactate dehydrogenase
AP	Action potential	MSEC	Medical and sanitary expert committee
ARF	Acute renal failure	NAD	Nicotine amide adenine dinucleotide
AST	Aspartat aminotransferase	NADPH	Nicotine amide adenine dinucleotide phosphate restored
ATP	Adenosine triphosphate	NIDDM	Non-Insulin dependent diabetes mellitus
BP	Blood pressure	PAC	Polyunsaturated aromatic carbohydrates
bpm	Beats per minute	PAS	Periodic acid & Schiff reaction
C.I.	Color Index	pCO ₂	CO ₂ partial pressure
CBC	Complete blood count	pO ₂	CO ₂ partial pressure
CHF	Chronic heart failure	pm	Per minute
CT	Computer tomography	Ps	Pulse rate
DIC	Disseminated intravascular coagulation	r	roentgen
DCC	Doctoral controlling committee	RBC	Red blood count
DM-2	Non-Insulin dependent diabetes mellitus	RDHA	Reverse direct hemagglutination assay
DTP	Anti diphtheria-tetanus vaccine	Rh	Rhesus
ECG	Electrocardiogram	(R)CFT	Reiter's complement fixation test
ESR	Erythrocyte sedimentation rate	RIHA	Reverse indirect hemagglutination assay
FC	Function class	RNA	Ribonucleic acid
FAD	Flavin adenine dinucleotide	RR	Respiratory rate
FADH ₂	Flavin adenine dinucleotide restored	S1	Heart sound 1
FEGDS	Fibro-esophago-gastro-duodenoscopy	S2	Heart sound 2
FMNH ₂	Flavin mononucleotide restored	TU	Tuberculin unit
GIT	Gastrointestinal tract	U	Unit
GMP	Guanosine monophosphate	USI	Ultrasound investigation
Hb	Hemoglobin	V/f	Vision field
HbA1c	Glycosylated hemoglobin	WBC	White blood count
Hct	Hematocrit	X-ray	Roentgenogram
HIV	Human immunodeficiency virus		