

1. 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

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

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

3. During an operation a patient got injection of muscle relaxant dithylinum. Relaxation of skeletal muscles and inhibition of respiration lasted two hours. This condition was caused by absence of the following enzyme in blood serum:

- A. Butyrylcholin esterase
- B. Catalase
- C. Acetylcholinesterase
- D. Glucose 6-phosphatase
- E. Glutathione peroxidase

4. A couple has a son with haemophilia. The parents are healthy but the maternal grandfather also has haemophilia. Specify the type of inheritance:

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

5. Examination of newborns in one of the Ukrainian cities revealed a baby with phenylketonuria. The baby's parents don't suffer from this disease and have two other healthy children. Specify the most likely parents' genotype with phenylketonuria gene:

- A. $Aa \times Aa$
- B. $AA \times aa$
- C. $aa \times aa$
- D. $Aa \times aa$
- E. $Aa \times AA$

6. A patient has a right-sided fracture in the region of the frontal third of mandible accompanied by a haematoma in the region of chin. It is caused by the injury of the following artery:

- A. Mental
- B. Inferior labial
- C. Lingual
- D. Facial
- E. Palatine

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

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

8. As a result of a cold a patient has the abnormal pain and temperature sensitivity of the frontal 2/3 of his tongue. Which nerve must have been damaged?

- A. Trigeminus
- B. Sublingual
- C. Accessory
- D. Vagus
- E. Glossopharyngeal

9. A 60 year old patient has impaired perception of high-frequency sounds. These changes were caused by damage of the following auditory analyzer structures:

- A. Main cochlea membrane near the oval window
- B. Main cochlea membrane near the helicotrema
- C. Eustachian tube
- D. Middle ear muscles
- E. Tympanic membrane

10. After a trauma of soft tissues in the region of the posterior surface of medial condyle of humerus a patient has got a skin prickle of medial forearm surface. Which of the listed nerves is located in the affected region?

- A. *N.ulnaris*
- B. *N.musculocutaneu*
- C. *N.dorsalis scapularis*
- D. *N.subscapularis*
- E. *N.radialis*

11. A boy has fallen down from a tree. Now he finds it difficult to abduct his arm

into horizontal position. Which muscle is most likely to be injured?

- A. *M. deltoideus*
- B. *M. triceps brachii*
- C. *M. anconeus*
- D. *M. coracobrachialis*
- E. *M. supinator*

12. A female patient with a tumour of pancreas has developed mechanic jaundice resulting from compression of a bile-excreting duct. Which duct is compressed?

- A. *Ductus choledochus*
- B. *Ductus cysticus*
- C. *Ductus hepaticus communis*
- D. *Ductus hepaticus dexter*
- E. *Ductus hepaticus sinister*

13. A 28 year old woman has been diagnosed with extrauterine pregnancy complicated by the fallopian tube rupture. The blood is most likely to penetrate the following peritoneal space:

- A. Rectouterine
- B. Vesicouterine
- C. Right mesenteric sinus
- D. Left mesenteric sinus
- E. Intersigmoid sinus

14. Patients with similar complaints applied to the doctor: weakness, pain in the intestines, disorder of GIT. Examination of the faeces revealed that one patient with four nucleus cysts should be hospitalized immediately. For what protozoa are such cysts typical?

- A. Dysenteric amoeba
- B. Intestinal amoeba
- C. *Balantidium*
- D. *Trichomonas*
- E. *Lamblia*

15. Autopsy of a 58 year old man revealed that bicuspid valve was deformed, thickened and unclosed. Microscopically: foci of collagen fibrilla are eosinophilic, react positively to fibrin. The most probably it is:

- A. Fibrinoid swelling
- B. Fibrinous inflammation
- C. Mucoïd swelling
- D. Hyalinosis
- E. Amyloidosis

16. Chronic inflammation and transformation of the one-layer ciliated epithelium into multiple-layers flat epithelium was revealed in the thickened mucous

membrane of the bronchus biopate of the patient with smoke abuse. Which of the processes is the most likely?

- A. Metaplasia
- B. Hyperplasia of the epithelium
- C. Squamous cancer
- D. Leucoplacia
- E. Epithelium hypertrophy

17. During postembryonal haemopoiesis in the red bone marrow the cells of one of the cellular differons demonstrate a gradual decrease in cytoplasmic basophilia as well as an increase in oxyphilia, the nucleus is being forced out. Such morphological changes are typical for the following haemopoiesis type:

- A. Erythropoiesis
- B. Lymphopoiesis
- C. Neutrophil cytopoiesis
- D. Eosinophil cytopoiesis
- E. Basophil cytopoiesis

18. Students who are taking examinations often have dry mouth. The mechanism that causes this state is the realization of the following reflexes:

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

19. The temperature of the ambient environment is 38°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

20. A microspecimen of heart shows rectangular cells from 50 to 120 μm large with central position of nucleus, developed myofibrils. The cells are connected by intercalated discs. These cells are responsible for the following function:

- A. Function of heart contractions
- B. Function of impulse conduction
- C. Endocrine
- D. Protective
- E. Regeneratory

21. A 30 year old woman has subnormal

concentration of enzymes in the pancreatic juice. This might be caused by the hyposecretion of the following gastrointestinal hormone:

- A. Cholecystokinin-pancreozymin
- B. Somatostatin
- C. Secretin
- D. Gastro-inhibiting peptide
- E. Vaso-intestinal peptide

22. 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

23. A patient has a trauma of sternocleidomastoid muscle. This caused a decrease in value of the following indicator of external respiration:

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

24. A month after surgical constriction of rabbit's renal artery the considerable increase of systematic arterial pressure was observed. What of the following regulation mechanisms caused the animal's pressure change?

- A. Angiotensin-II
- B. Vasopressin
- C. Adrenaline
- D. Noradrenaline
- E. Serotonin

25. Microscopic examination of the enlarged neck gland of a 14 year old girl revealed destruction of the tissue structure of the node, absence of the lymph follicles, sclerotic areas and necrosis foci, cell constitution of the node is polymorphous, lymphocytes, eosinophiles, big atypical cells with multilobular nuclei (Beresovsky-Sternberg cells) and mononuclear cells of the large size are present. What is the most likely diagnosis?

- A. Lymphogranulomatosis
- B. Acute lympholeucosis
- C. Chronic lympholeucosis
- D. Berkitt's lymphoma
- E. Fungoid mycosis

26. A child has abnormal formation of tooth enamel and dentin as a result of low concentration of calcium ions in blood. Such abnormalities might be caused by deficiency of the following hormone:

- A. Parathormone
- B. Thyrocalcitonin
- C. Thyroxin
- D. Somatotropic hormone
- E. Triiodothyronine

27. A sportsman was examined after an intensive physical activity. The examination revealed disorder of movement coordination but the force of muscle contractions remained the same. It can be explained by retarded speed of excitement conduction through:

- A. Central synapses
- B. Neuromuscular synapses
- C. Efferent nerves
- D. Afferent nerves
- E. Conduction tracts

28. After a long training session a sportsman has developed fatigue accompanied by abrupt performance decrement. What link of the reflex arch was the fatigue initiated in?

- A. Nerve centres
- B. Afferent conductor
- C. Receptors
- D. Efferent conductor
- E. Muscles

29. Blood minute volume of a 30 year old woman at rest is 5 l/m. What blood volume is pumped through the pulmonary vessels per minute?

- A. 5 l
- B. 3,75 l
- C. 2,5 l
- D. 2,0 l
- E. 1,5 l

30. After a tourniquet application a patient was found to have petechial haemorrhages. The reason for it is the dysfunction of the following cells:

- A. Platelets
- B. Eosinophils
- C. Monocytes
- D. Lymphocytes
- E. Neutrophils

31. A patient under test was subjected to a moderate physical stress. His minute blood volume amounted 10 l/min. What blood volume was pumped through his lung vessels every minute?

- A. 10 l/min
- B. 5 l/min
- C. 4 l/min
- D. 6 l/min
- E. 7 l/min

32. A patient presents with the following motor activity disturbances: tremor, ataxia and asynergia movements, dysarthria. The disturbances are most likely to be localized in:

- A. Cerebellum
- B. Basal ganglions
- C. Limbic system
- D. Brainstem
- E. Medulla oblongata

33. A man has a considerable decrease in diuresis as a result of 1,5 l blood loss. The primary cause of such diuresis disorder is the hypersecretion of the following hormone:

- A. Vasopressin
- B. Corticotropin
- C. Natriuretic
- D. Cortisol
- E. Parathormone

34. The patient with thymoma (thymus gland tumour) has cyanosis, extention of subcutaneous venous net and edema of the soft tissues of face, neck, upper part of the trunk and upper extremities. What venous trunk is pressed with tumour?

- A. Superior vena cava
- B. External jugular vein
- C. Clavicular vein
- D. Internal jugular vein
- E. Frontal jugular vein

35. An experimental animal that was kept on protein-free diet developed fatty liver infiltration, in particular as a result of deficiency of methylating agents. This is caused by disturbed generation of the following metabolite:

- A. Choline
- B. DOPA
- C. Cholesterol
- D. Acetoacetate
- E. Linoleic acid

36. Vegetative abnormalities in the sleep, heat regulation, all kinds of metabolism, diabetes insipidus are developing in the patient due to growth of the tumour in the III ventricle of brain. Irritation of the nucleus of what part of the brain can cause this symptoms?

- A. Hypothalamus
- B. Cerebral peduncles (cruces cerebri)
- C. Mesencephalic tegmentum
- D. Pons cerebelli
- E. Medulla

37. 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

38. Examination of a child who hasn't got fresh fruit and vegetables during winter revealed numerous subcutaneous hemorrhages, gingivitis, carious cavities in teeth. What vitamin combination should be prescribed in this case?

- A. Ascorbic acid and rutin
- B. Thiamine and pyridoxine
- C. Folic acid and cobalamin
- D. Riboflavin and nicotinamide
- E. Calciferol and ascorbic acid

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

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

40. 46 chromosomes were revealed on

karyotype examination of the 5 year old girl. One of the 15th pair of chromosomes is longer than usual due to connected chromosome from the 21 pair. What type of mutation does this girl have?

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

41. A 62 year old woman complains of frequent pain attacks in the area of her chest and backbone, rib fractures. Her doctor suspected myeloma (plasmocytoma). What of the following laboratory characteristics will be of the greatest diagnostic importance?

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

42. Before the cells can utilize the glucose, it is first transported from the extracellular space through the plasmatic membrane inside them. This process is stimulated by the following hormone:

- A. Insulin
- B. Glucagon
- C. Thyroxin
- D. Aldosterone
- E. Adrenalin

43. Parodontitis is treated with calcium preparations and a hormone that stimulates tooth mineralization and inhibits tissue resorption. What hormone is it?

- A. Calcitonin
- B. Parathormone
- C. Adrenalin
- D. Aldosterone
- E. Thyroxine

44. A child has an acute renal failure. What biochemical factor found in saliva can confirm this diagnosis?

- A. Increase in urea concentration
- B. Increase in glucose concentration
- C. Decrease in glucose concentration
- D. Increase in concentration of higher fatty acids
- E. Decrease in nucleic acid concentration

45. After implantation of a cardiac valve a young man constantly takes indirect anti-coagulants. His state was complicated by

hemorrhage. What substance content has decreased in blood?

- A. Prothrombin
- B. Haptoglobin
- C. Heparin
- D. Creatin
- E. Ceruloplasmin

46. After severe viral hepatitis a 4 year old boy presents with vomiting, occasional loss of consciousness, convulsions. Blood test revealed hyperammonemia. Such condition is caused by a disorder of the following biochemical hepatic process:

- A. Disorder of ammonia neutralization
- B. Disorder of biogenic amines neutralization
- C. Protein synthesis inhibition
- D. Activation of amino acid decarboxylation
- E. Inhibition of transamination enzymes

47. Having helped to eliminate consequences of a failure at a nuclear power plant, a worker got an irradiation dose of 500 roentgen. He complains of headache, nausea, dizziness. What changes in leukocytes quantity can be expected 10 hours after irradiation?

- A. Neutrophilic leukocytosis
- B. Lymphocytosis
- C. Leukopenia
- D. Agranulocytosis
- E. Leukemia

48. Bacterioscopic examination of a smear from the pharynx of a diphtheria suspect revealed bacilli with volutine granules. What etiologic drug should be chosen in this case?

- A. Antidiphtheritic antitoxic serum
- B. Bacteriophage
- C. Diphtheritic anatoxin
- D. Eubiotic
- E. Interferon

49. A patient with a history of chronic glomerulonephritis presents with azotemia, oliguria, hypo- and isosthenuria, proteinuria. What is the leading factor in the pathogenesis of these symptoms development under chronic renal failure?

- A. Mass decrease of active nephrons
- B. Intensification of glomerular filtration
- C. Tubular hyposecretion
- D. Disturbed permeability of glomerular membranes
- E. Intensification of sodium reabsorption

50. After an attack of bronchial asthma a patient had his peripheral blood tested. What changes can be expected?

- A. Eosinophilia
- B. Leukopenia
- C. Lymphocytosis
- D. Thrombocytopenia
- E. Erythrocytosis

51. A 70 year old female patient was diagnosed with fracture of left femoral neck accompanied by disruption of ligament of head of femur. The branch of the following artery is damaged:

- A. Obturator
- B. Femoral
- C. External iliac
- D. Inferior gluteal
- E. Internal pudendal

52. ECG of a patient shows prolongation of T-wave. This is caused by deceleration in ventricles of:

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

53. After the traumatic tooth extraction a patient is complaining of acute, dull, poorly-localized pain in gingiva, body temperature rise up to $37,5^{\circ}\text{C}$. The patient has been diagnosed with alveolitis. Specify the kind of pain in this patient:

- A. Protopathic
- B. Epicritic
- C. Visceral
- D. Heterotopic
- E. Phantom

54. A 50 year old patient suffers from essential hypertension. After a physical stress he experienced muscle weakness, breathlessness, cyanosis of lips, skin and face. Respiration was accompanied by distinctly heard bubbling rales. What mechanism underlies the development of this syndrome?

- A. Acute left-ventricular failure
- B. Chronic right-ventricular failure
- C. Chronic left-ventricular failure
- D. Collapse
- E. Cardiac tamponade

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

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

56. A patient suffering from chronic myeloleukemia has got the following symptoms of anemia: decreased number of erythrocytes and low haemoglobin concentration, oxyphilic and polychromatophilic normocytes, microcytes. What is the leading pathogenetic mechanism of anemia development?

- A. Substitution of haemoblast
- B. Intravascular hemolysis of erythrocytes
- C. Deficiency of vitamin B_{12}
- D. Reduced synthesis of erythropoietin
- E. Chronic haemorrhage

57. A patient with obliterating endarteritis underwent ganglionic sympathectomy. What type of arterial hyperaemia should have developed as a result of the surgery?

- A. Neuroparalytic
- B. Neurotonic
- C. Metabolic
- D. Functional
- E. Reactive

58. Autopsy of a woman with cerebral atherosclerosis revealed in the left cerebral hemisphere a certain focus that is presented by flabby, anhistic, greyish and yellowish tissue with indistinct edges. What pathological process is the case?

- A. Ischemic stroke
- B. Multifocal tumor growth with cystic degeneration
- C. Multiple foci of fresh and old cerebral hemorrhage
- D. Focal encephalitis
- E. Senile encephalopathy

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. 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 α_1 -adrenoreceptors
- B. Activation of serotonin receptors
- C. Activation of β -adrenoreceptors
- D. Activation of dopamine receptors
- E. Block of *M*-cholinoreceptors

61. Autopsy of a man who had 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 by tuberculous granulation tissue and the external one was made by 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

62. 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

63. Autopsy of a man who died from ethylene glycol poisoning revealed that his kidneys are a little bit enlarged, edematous; their capsule can be easily removed. Cortical substance is broad and light-grey. Medullary substance is dark-red. What pathology had this man?

- A. Necrotic nephrosis
- B. Acute pyelonephritis
- C. Acute glomerulonephritis
- D. Acute tubular-interstitial nephritis
- E. Lipoid nephrosis

64. A 44 year old woman complains of general weakness, heart pain, significant increase of body weight. Objectively: moon face, hirsutism, AP is 165/100 mm Hg, height - 164 cm, weight - 103 kg; the fat is mostly accumulated on her neck, thoracic girdle, belly. What is the main pathogenetic mechanism of obesity?

- A. Increased production of glucocorticoids
- B. Reduced production of thyroid hormones
- C. Increased insulin production
- D. Reduced glucagon production
- E. Increased mineralocorticoid production

65. A man with a long-term history of bronchial asthma died from asphyxia. Histological examination of his lungs revealed that the lumens of bronchioles and minor bronchi contained a lot of mucus with some eosinophils. There was also sclerosis of interalveolar septa, dilatation of alveole lumens. What mechanism accounts for the development of hypersensitivity reaction?

- A. Reagine reaction
- B. Cytotoxic reaction
- C. Immune complex reaction
- D. Lymphocyte-mediated cytolysis
- E. Granulomatosis

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

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

67. Bacterioscopy of nasopharyngeal mucus taken from a 2,5 year old child with nasopharyngitis revealed gram-positive diplococci looking like coffee grains. What organs of the child are most likely to be affected if these microorganisms penetrate the blood?

- A. Brain tunics
- B. Cardiac valves
- C. Renal glomeruli
- D. Urogenital tracts
- E. Lymph nodes

68. Histologic analysis of uterus mucous membrane revealed twisting glands, serrated and spined, they were extended by stroma growth with proliferation of its cells. Formulate a diagnosis:

- A. Glandular hyperplasia of endometrium
- B. Acute endometritis
- C. Leiomyoma
- D. Cystic mole
- E. Placental polyp

69. Analysis of sputum taken from a patient with suspected pneumonia revealed rather elongated gram-positive diplococci with somewhat pointed opposite ends. What microorganisms were revealed in the sputum?

- A. *Streptococcus pneumoniae*
- B. *Staphylococcus aureus*
- C. *Klebsiella pneumoniae*
- D. *Neisseria meningitidis*
- E. *Neisseria gonorrhoeae*

70. Serological diagnostics of infectious diseases is based upon specific interaction with antigens. Specify the serological reaction that underlies adhesion of microorganisms when they are affected by specific antibodies in presence of an electrolyte:

- A. Agglutination reaction
- B. Precipitation reaction
- C. Complement-binding reaction
- D. Hemadsorption reaction
- E. Neutralization reaction

71. The immunoblot detected gp120 protein in the blood serum. This protein is typical for the following disease:

- A. HIV-infection
- B. Virus B hepatitis
- C. Tuberculosis
- D. Syphilis
- E. Poliomyelitis

72. HIV has gp41 and gp120 on its surface interacts with target cells of an organism. Which of the following human lymphocyte antigens is gp120 complementary bound with?

- A. CD 4
- B. CD 3
- C. CD 8
- D. CD 19
- E. CD 28

73. A 65 year old patient with chronic heart failure has been taking digitoxin in self-administered dosages for a long time. She was admitted to the hospital for general health aggravation, arrhythmia, nausea, reduced diuresis, insomnia. What is the primary action to be taken?

- A. To withhold digitoxin
- B. To reduce digitoxin dosage
- C. To administer strophanthine intravenously
- D. To administer digoxin
- E. To give an intravenous injection of calcium gluconate solution

74. A 20 year old patient complains of morbid thirst and hyperdiuresis (up to 10 l daily). Glucose concentration in blood is normal but it is absent in urine. The patient has been diagnosed with diabetes insipidus. What hormonal drug is the most appropriate for management of this disorder?

- A. Vasopressin
- B. Cortisol
- C. Thyroxin
- D. Oxytocin
- E. Insulin

75. A patient has myocardial infarction with thrombosis of the left coronary artery. What pharmacological preparation group should be used to reestablish blood flow?

- A. Fibrinolysis activators
- B. Narcotic analgesics
- C. β -adrenergic blockers
- D. Angiotensin-converting enzyme inhibitors
- E. Glucocorticoids

76. A nurse accidentally injected a nearly double dose of insulin to a patient with diabetes mellitus. The patient lapsed into a hypoglycemic coma. What drug should be injected in order to help him out of coma?

- A. Glucose
- B. Lidase
- C. Insulin
- D. Somatotropin
- E. Noradrenaline

77. A patient has a slowly healing fracture.

What medicine can be used to accelerate formation of connective tissue matrix?

- A. Methyluracil
- B. Prednisolone
- C. Cyclophosphan
- D. Methotrexate
- E. Cyclosporine

78. From the group of children who were eating sweet sappy watermelon two kids developed the signs of poisoning: rapid weakness, dizziness, headache, vomiting, edema, tachycardia, cyanosis of mouth, ears, tips of the fingers cyanosis. High concentration of nitrates was detected. What is the leading mechanism of the pathogenesis of the poisoning in the two children?

- A. Insufficiency of met-Hb-reductase
- B. Insufficiency of superoxididismutase
- C. Block cytochrome oxidase
- D. Insufficiency glutathione pyroxidase
- E. Insufficiency of catalase

79. As a result of a trauma a patient has damaged anterior roots of spinal cord. What structures have been affected?

- A. Axons of motoneurons and axons of neurons of lateral horns
- B. Central processes of sensitive neurons of spinal ganglions
- C. Peripheral processes of sensitive spinal ganglions
- D. Axons of neurons of lateral horns
- E. Dendrites of neurons of spinal ganglions

80. 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

81. The contents of vesicles that appeared on the mucous membrane of a patient with variola was sent to a virological laboratory. Which of the listed changes were revealed during the smear microscopy?

- A. Paschen bodies
- B. Babes-Negri bodies
- C. Guarnieri bodies
- D. Babes-Ernst bodies
- E. Syncytium

82. Vitamin A together with specific cytoceptors penetrates through the nuclear membranes, induces transcription processes that stimulate growth and differentiation of cells. This biological function is realized by the following form of vitamin A:

- A. Trans-retinoic acid
- B. Trans-retinal
- C. Cis-retinal
- D. Retinol
- E. Carotin

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

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

84. A 63 year old male patient who had been suffering from chronic diffuse obstructive disease, pulmonary emphysema, for 15 years died from cardiac insufficiency. Autopsy revealed nutmeg liver cirrhosis, cyanotic induration of kidneys and spleen, ascites, edemata of lower limbs. These changes of internal organs are typical for the following disease:

- A. Chronic right-ventricular insufficiency
- B. Acute right-ventricular insufficiency
- C. Chronic left-ventricular insufficiency
- D. Acute left-ventricular insufficiency
- E. General cardiac insufficiency

85. 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

86. A patient underwent esophagogastroduodenoscopy.

Analysis of the biopsy material enabled doctors to diagnose him with helicobacteriosis. What property of the bacteria found in this patient had to be obligatory taken into account during their cultivation?

- A. Microaerophilic ability
- B. Presence of urease
- C. Colonisation of gastral cells
- D. Absence of spores and capsules
- E. Presence of six polar flagella

87. A 38 year old man died all of a sudden. Autopsy revealed myocardial infarction in the posterior wall of the left ventricle. What are the most likely alterations in myocardiocyte structure that can be revealed microscopically in the infarction focus?

- A. Karyolysis
- B. Adipose degeneration
- C. Carbohydrate degeneration
- D. Calcification
- E. Protein degeneration

88. During cytoscopy mucous membrane of urinary bladder normally makes folds except for a single triangular area with smooth mucosa. This triangle is located in the following part of urinary bladder:

- A. Bladder floor
- B. Bladder cervix
- C. Bladder apex
- D. Bladder body
- E. Bladder isthmus

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

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

90. Atria of an experimental animal were superdistended by blood that resulted in decreased reabsorption of Na^+ and water in renal tubules. This can be explained by the influence of the following factor upon kidneys:

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

91. After a serious psychoemotional stress a 48 year old patient suddenly developed acute heart ache irradiating to the left arm. Nitroglycerine relieved pain after 10 minutes. What is the leading pathogenetic mechanism of this process development?

- A. Spasm of coronary arteries
- B. Dilatation of peripheral vessels
- C. Obstruction of coronary vessels
- D. Compression of coronary vessels
- E. Increase in myocardial oxygen consumption

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

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

93. A 56 year old patient suffering from cardiac insufficiency has edema of feet and shins, edematous skin is pale and cold. What is the leading mechanism of edema pathogenesis?

- A. Rise of hydrostatic pressure in venules
- B. Drop of oncotic pressure in capillaries
- C. Increase of capillary permeability
- D. Disorder of lymph outflow
- E. Positive water balance

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

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

95. To prevent postoperative bleeding a 6-year-old child was administered vicasol

that is a synthetic analogue of vitamin *K*. Name post-translational changes of blood coagulation factors that will be activated by vicasol:

- A. Carboxylation of glutamin acid
- B. Phosphorylation of serine radicals
- C. Partial proteolysis
- D. Polymerization
- E. Glycosylation

96. While under barbituric anaesthesia a 65 year old male patient developed respiratory inhibition. Anesthesiologist made him a 10 ml intravenous injection of 0,5% bemegride solution. The patient's condition got better, the pulmonary ventilation volume increased. What phenomenon underlies the interaction of these medications?

- A. Direct antagonism
- B. Indirect antagonism
- C. Unilateral antagonism
- D. Direct synergism
- E. Indirect synergism

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

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

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

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

99. It is known that the gene responsible for development of blood groups according to ABO system has three allele variants. If a man has IV blood group, it can be explained by the following variability form:

- A. Combinative
- B. Mutational
- C. Phenotypic
- D. Genocopy
- E. Phenocopy

100. Power inputs of a man were measured. In what state was this man if his power inputs were lower than basal metabolism?

- A. Sleep
- B. Relaxation
- C. Simple work
- D. Nervous tension
- E. Rest

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

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

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

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

103. A patient complains about impaired evacuatory function of stomach (long-term retention of food in stomach). Examination revealed a tumour of initial part of duodenum. Specify localization of the tumour:

- A. *Pars superior*
- B. *Pars inferior*
- C. *Pars descendens*
- D. *Pars ascendens*
- E. *Flexura duodeni inferior*

104. As a result of damage to certain structures of brainstem an animal lost orientation reflexes. What structures were damaged?

- A. Quadritubercular bodies
- B. Medial nuclei of reticular formation
- C. Red nuclei
- D. Vestibular nuclei
- E. Black substance

105. Emotional stress causes activation of hormon-sensitive triglyceride lipase in

the adipocytes. What secondary mediator takes part in this process?

- A. Cyclic adenosine monophosphate
- B. Cyclic guanosine monophosphate
- C. Adenosine monophosphate
- D. Diacylglycerol
- E. Ions of Ca^{2+}

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

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

107. 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

108. The patient with acute myocardial infarction was given intravenously different solutions during 8 hours with medical dropper 1500 ml and oxygen intranasally. He died because of pulmonary edema. What caused the pulmonary edema?

- A. Volume overload of the left ventricular
- B. Decreased oncotic pressure due to hemodilution
- C. Allergic reaction
- D. Neurogenic reaction
- E. Inhalation of the oxygen

109. In course of an operation surgeon removed a part of a lung that was ventilated by a tertiary bronchus accompanied by branches of pulmonary artery and other vessels. What part of a lung was removed?

- A. Bronchopulmonary segment
- B. Middle lobe
- C. Inferior lobe
- D. Superior lobe
- E. Pulmonary lobule

110. After the second abortion a 23 year old woman has been diagnosed with

toxoplasmosis. Which drug should be used for toxoplasmosis treatment?

- A. Co-trimoxazole
- B. Itraconazole
- C. Mebendazole
- D. Azidothimidine
- E. Acyclovir

111. Autopsy of a 17 year old girl who died from pulmonary failure revealed a small area of caseous necrosis in the inferior lobe of the right lung, and occurrences of caseous necrosis in the bronchopulmonary, bronchial and bifurcational lymph nodes. What is the most probable postmortem diagnosis?

- A. Primary tuberculosis
- B. Hematogenous progression of primary tuberculosis
- C. Hematogenous tuberculosis with predominant lung affection
- D. Tuberculoma
- E. Caseous pneumonia under secondary tuberculosis

112. After 4 months of treatment for tuberculosis the patient began complaining of toes and fingers numbness, sensation of creeps. He was diagnosed with polyneuritis. What antituberculous drug might have caused these complications?

- A. Isoniazid
- B. Rifampicin
- C. Ciprofloxacin
- D. Sodium salt of benzylpenicillin
- E. Alcohol iodine solution

113. Examination of a 55 year old woman revealed under the skin of submandibular area a movable slowly growing pasty formation with distinct borders 1,0x0,7 cm large. Histological examination revealed lipocytes that form segments of different forms and sizes separated from each other by thin layers of connective tissue with vessels. What is the most probable diagnosis?

- A. Lipoma
- B. Fibroma
- C. Angioma
- D. Liposarcoma
- E. Fibrosarcoma

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

agnosis?

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

115. A patient has been diagnosed with acute glomerulonephritis that developed after he had had streptococcal infection. It is most likely that the affection of basal glomerular membrane is caused by an allergic reaction of the following type:

- A. Immune complex
- B. Anaphylactic
- C. Cytotoxic
- D. Delayed
- E. Stimulating

116. An elderly patient has chronic constipations induced by large intestine hypotonia. What drug should be administered?

- A. Bisacodyl
- B. Sodium sulphate
- C. Castor oil
- D. Atropine
- E. Novocaine amide

117. Examination of patients with periodontitis revealed the interdependence between the rate of affection of periodontal tissues and the amount of lysozymes in saliva and gingival liquid. These results can be obtained during studying the following protection system of an organism:

- A. Non-specific resistance
- B. Humoral immunity
- C. Cellular immunity
- D. Autoresponsiveness
- E. Tolerance

118. An isolated cell of human heart automatically generates excitement impulses with frequency of 60 times per minute. This cell was taken from the following heart structure:

- A. Sinoatrial node
- B. Atrium
- C. Ventricle
- D. Atrioventricular node
- E. His' bundle

119. A patient with epilepsy and depressive reaction has been administered a drug that reduced epilepsy manifestations and improved the patient's psychic condition.

- A. Sodium valproate
- B. Ethosuxemide
- C. Amitriptyline
- D. Phenytoin
- E. Phenobarbital

120. A patient diagnosed with morphinism has been admitted to the narcological department. A doctor noted a decrease in pharmacological activity of morphine. Repetitive use of a drug may result in tolerance to its effect, and this phenomenon is called:

- A. Addiction
- B. Cumulation
- C. Tachyphylaxis
- D. Antagonism
- E. Allergy

121. 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

122. A man got poisoned with mushrooms. They contain muscarine that stimulates muscarinic cholinoreceptors. What symptom is typical for poisoning with inedible mushrooms?

- A. Miosis
- B. Mydriasis
- C. Bronchi dilation
- D. Heart rate rise
- E. Arterial pressure rise

123. A patient complains of skin itch, especially between fingers, in the inguinal creases, on the lower abdomen. Examination of these regions revealed there some small vesicles. Laboratory diagnostics allowed to establish that this condition had been caused by a representative of Arthropoda. Specify the disease caused by this arthropod:

- A. Scabies
- B. Demodicosis
- C. Myiasis
- D. Pediculosis
- E. Dermatotropic leishmaniasis

124. An infant has pylorospasm, weakness, hypodynamia, convulsions as

a result of frequent vomiting. What kind of acid-base disbalance is it?

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

125. During influenza epidemic 40% of pupils who didn't go in for sports were affected by the disease, and among the pupils who regularly did physical exercises this index was only 20%. What adaptive mechanisms determined such a low sickness rate of pupils participating in the sports?

- A. Cross adaptation
- B. Specific adaptation
- C. Physiological adaptation
- D. Biochemical adaptation
- E. Genetic adaptation

126. A 39 year old man who had been operated for the stomach ulcer died 7 days after the surgery. Autopsy revealed that peritoneal leaves were dull, plephoric, covered with massive yellow-greenish films, the peritoneal cavity contained for about 300 ml of thick yellow-greenish liquid. What pathologic process was revealed in the peritoneal cavity?

- A. Fibrinous suppurative peritonitis
- B. Serous peritonitis
- C. Fibrinous serous peritonitis
- D. Peritoneal commissures
- E. Fibrinous haemorrhagic peritonitis

127. 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

128. A 60 year old patient was found to have a dysfunction of main digestive enzyme of saliva. This causes the disturbance of primary hydrolysis of:

- A. Carbohydrates
- B. Fats
- C. Proteins
- D. Cellulose
- E. Lactose

129. A patient suffers from stenocardia and takes isosorbide mononitrate. He was prescribed a complementary drug with disaggregating effect. What drug is it?

- A. Acetylsalicylic acid
- B. Nitroglycerine
- C. Propranolol
- D. Nifedipine
- E. Validol

130. A 49 year old woman spent a lot of time standing. As a result of it she got leg edema. What is the most likely cause of the edema?

- A. Increase in hydrostatic pressure of blood in veins
- B. Decrease in hydrostatic pressure of blood in veins
- C. Decrease in hydrostatic pressure of blood in arteries
- D. Increase in oncotic pressure of blood plasma
- E. Increase in systemic arterial pressure

131. A patient presented to a hospital with complaints about quick fatigability and significant muscle weakness. Examination revealed an autoimmune disease that causes functional disorder of receptors in the neuromuscular synapses. This will result in the disturbed activity of the following mediator:

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

132. Blood test of a patient suffering from atrophic gastritis gave the following results: RBCs - $2,0 \cdot 10^{12}/l$, Hb- 87 g/l, colour index - 1,3, WBCs - $4,0 \cdot 10^9/l$, thrombocytes - $180 \cdot 10^9/l$. Anaemia might have been caused by the following substance deficiency:

- A. Vitamin B_{12}
- B. Vitamin A
- C. Vitamin K
- D. Iron
- E. Zinc

133. A 45 year old man consulted a doctor about a plaque-like formation on his neck. Histological examination of a skin bi-optate revealed clusters of round and oval tumour cells with a narrow border of basophilic cytoplasm resembling of cells of basal epidermal layer. What tumour is it?

- A. Basal cell carcinoma
- B. Epidermal cancer
- C. Hydroadenoma
- D. Trichoepithelioma
- E. Syringoadenoma

134. A 71 year old man had been presenting with diarrhea for 10 days. The feces had admixtures of blood and mucus. He was delivered to a hospital in grave condition and died 2 days later. Autopsy of the body revealed the following: diphtheritic colitis with multiple irregularly-shaped ulcers of different depth in both sigmoid colon and rectus. Bacteriological analysis revealed *Shigella*. What was the main disease?

- A. Dysentery
- B. Typhoid fever
- C. Salmonellosis
- D. Nonspecific ulcerous colitis
- E. Yersiniosis

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. Autopsy of a 75 year old patient who had been suffering from disseminated atherosclerosis and died under chronic cardiac failure revealed constriction and deformation of coronary arteries, tuberos intima whose section appeared to be white and petrosal. Specify the stage of atherosclerosis morphogenesis:

- A. Atherocalcinosis
- B. Lipoidosis
- C. Liposclerosis
- D. Bilipid
- E. Atheromatosis

137. Examination of a bronchial tissue sample revealed atrophy of mucous membrane, cystic degeneration of glands, focal metaplastic changes of lining prismatic epithelial cells into multilayer squamous cells; increase in goblet cell number; in some parts of bronchial wall and especially in the mucous membrane there was marked cellular inflammatory

infiltration and growth of granulation tissue bulging into the bronchial lumen in form of a polyp. What is the most likely diagnosis?

- A. Chronic bronchitis
- B. Lobar pneumonia
- C. Acute bronchitis
- D. Bronchopneumonia
- E. Interstitial pneumonia

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

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

139. Osteolaterism is characterized by a decrease in collagen strength caused by much less intensive formation of cross-links in collagen fibrils. This phenomenon is caused by the low activity of the following enzyme:

- A. Lysyl oxidase
- B. Monoamino-oxidase
- C. Prolyl hydroxylase
- D. Lysyl hydroxylase
- E. Collagenase

140. A histological specimen of kidney shows a structure consisting of a glomerulus of fenestrated capillaries and a bilayer epithelial capsule. Specify this structure:

- A. Renal corpuscle
- B. Proximal tubule
- C. Distal tubule
- D. Henle's loop
- E. Receiving tube

141. A 66 year old female patient got intravenous injection of magnesium sulfate solution for the purpose of elimination of hypertensive crisis. But arterial pressure didn't go down and after repeated introduction of the same preparation there appeared sluggishness, slow response, inhibition of consciousness and respiration. What preparation is

antagonist of magnesium sulfate and can eliminate symptoms of its overdose?

- A. Calcium chloride
- B. Potassium chloride
- C. Sodium chloride
- D. Activated carbon
- E. Potassium permanganate

142. As a result of a road accident a 26-year-old man is in the torpid phase of shock. Blood count: leukocytes - $3,2 \cdot 10^9/l$. What is the leading mechanism of leukopenia development?

- A. Leukocyte redistribution in the bloodstream
- B. Leukopoiesis inhibition
- C. Faulty release of mature leukocytes from the bone marrow into the blood
- D. Leukocyte destruction in the hematopoietic organs
- E. Increased excretion of the leukocytes from the organism

143. A 5-month-old boy was hospitalized for tonic convulsions. He has a lifetime history of this disease. Examination revealed coarse hair, thinned and fragile nails, pale and dry skin. In blood: calcium - 1,5 millimole/l, phosphor - 1,9 millimole/l. These changes are associated with:

- A. Hypoparathyroidism
- B. Hyperparathyroidism
- C. Hyperaldosteronism
- D. Hypoaldosteronism
- E. Hypothyroidism

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

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

146. An oncological patient had been administered methotrexate. With time target cells of the tumour lost sensitivity to this drug. At the same time the change in gene expression of the following enzyme is observed:

- A. Dehydropholate reductase
- B. Thiaminase
- C. Deaminase
- D. Pholate oxidase
- E. Pholate decarboxylase

147. A 64 year old woman has impairment of twilight vision (hemeralopy). What vitamin should be recommended in the first place?

- A. A
- B. B₂
- C. E
- D. C
- E. B₆

148. A patient underwent appendectomy. In the postoperative period he has been taking an antibiotic. The patient complains about hearing impairment and vestibular disorders. What group of antibiotics has such by-effects?

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

149. While playing a child got a punch in the presternum region. As a result of this trauma an organ located behind the presternum was damaged. Name this organ:

- A. Thymus
- B. Thyroid gland
- C. Heart
- D. Pericardium
- E. Larynx

150. 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

151. A patient consulted a dentist about itching and burning in the oral cavity; high temperature. The patient was diagnosed with trichomonal gingivostomatitis. What drug should be chosen for his treatment?

- A. Metronidazole
- B. Ampicillin
- C. Doxycycline hydrochloride
- D. Gentamicin sulfate
- E. Nystatin

152. An electron microphotography of a fragment of proper gastric gland shows a big irregular round-shaped cell. There are a lot of intracellular tubules and mitochondria in the cytoplasm. Specify this cell:

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

153. A patient suffering from stenocardia was taking nitroglycerine which caused restoration of blood supply of myocardium and relieved pain in the cardiac area. What intracellular mechanism provides restoration of energy supply of insulted cells?

- A. Intensification of ATP resynthesis
- B. Reduction of ATP resynthesis
- C. Increased permeability of membranes
- D. Intensification of oxygen transporting into the cell
- E. Intensification of RNA generation

154. A 50 year old patient has been taking treatment thrice for the last 6 months because of fractures caused by domestic accidents. Microscopical examination of bony tissue revealed foci of lacunar resorption, giant-cell granulomas in the tumour-like formations, cysts. Bony tissue was substituted by fibrous connective tissue. Examination revealed also adenoma of parathyroid gland and hypercalcemia. What is the most probable diagnosis?

- A. Parathyroid osteodystrophy
- B. Myelomatosis
- C. Osteomyelitis
- D. Osteopetrosis
- E. Paget's disease

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

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

156. When water affects mucous membrane of the inferior nasal meatuses, this causes "diver reflex" that provokes:

- A. Reflectory apnea
- B. Reflectory dyspnea
- C. Reflectory hyperpnea
- D. Cough
- E. Bronchospasm

157. 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. G₀
- C. G₁
- D. G₂
- E. M

158. Examination of a child who frequently suffers from infectious diseases revealed that IgG concentration in blood serum was 10 times less than normal, IgA and IgM concentration was also significantly reduced. Analysis showed also lack of B-lymphocytes and plasmocytes. What disease are these symptoms typical for?

- A. Bruton's disease
- B. Swiss-type agammaglobulinemia
- C. Dysimmunoglobulinemia
- D. Louis-Bar syndrome
- E. Di George syndrome

159. Examination of a 42 year old patient revealed a tumour of adenohypophysis. Objectively: the patient's weight is 117 kg, he has moon-like hyperemic face, red-blue striae of skin distension on his belly.

Osteoporosis and muscle dystrophy are present. AP is 210/140 mm Hg. What is the most probable diagnosis?

- A. Cushing's disease
- B. Cushing's syndrome
- C. Conn's disease
- D. Diabetes mellitus
- E. Essential hypertension

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

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

161. A patient has been diagnosed with transmural myocardial infarction. What drug should be given in order to prevent cardiogenic shock?

- A. Promedol
- B. Reserpin
- C. Octadine
- D. Phentolamine
- E. Analgin

162. 2 days after labour a woman developed shock along with DIC syndrome that caused her death. Autopsy revealed purulent endomyometritis, regional purulent lymphangitis, lymphadenitis and purulent thrombophlebitis. There were also dystrophic alterations and interstitial inflammation of parenchymal organs. What is the most likely diagnosis?

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

163. A patient got an injury of spinal marrow in a road accident that caused loss of tactile sensation, posture sense, vibration sense. What conduction tracts are damaged?

- A. Fascicle of Goll and cuneate fascicle
- B. Anterior spinocerebellar tract
- C. Rubrospinal tract
- D. Reticulospinal tract
- E. Tectospinal tract

164. Examination of a patient revealed II grade obesity. It is known that he

consumes a lot of sweets and rich food, has sedentary way of life. That's why anabolic metabolism has the priority in his organism. Which of the following pathways is amphibolic?

- A. Cycle of tricarboxylic acids
- B. Glyconeogenesis
- C. Lipolysis
- D. Glycolysis
- E. Fatty acids oxidation

165. A patient who abuses smoking has chronic bronchitis. Biopsy of his primary bronchus revealed multilayer pavement epithelium. What pathological process was revealed in the bronchus?

- A. Metaplasia
- B. Physiological regeneration
- C. Reparative regeneration
- D. Hyperplasia
- E. Dysplasia

166. A patient suffers from pulmonary tuberculosis. During treatment neuritis of visual nerve arose. What drug has caused this by-effect?

- A. Isoniazid
- B. Ethambutol
- C. Kanamycin
- D. Rifampicin
- E. Streptomycin

167. A 67 year old patient complains of periodic heart ache, 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

168. A patient with ischemic heart disease has been administered an anti-anginal drug that reduces the myocardial oxygen consumption and improves blood supply of myocardium. What drug is it?

- A. Nitroglycerine
- B. Validol
- C. Propranolol
- D. Promedol
- E. Retabolil

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

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

170. A 4 year old child with hereditary renal lesion has signs of rickets, vitamin D concentration in blood is normal. What is the most probable cause of rickets development?

- A. Impaired synthesis of calcitriol
- B. Increased excretion of calcium
- C. Hyperfunction of parathyroid glands
- D. Hypofunction of parathyroid glands
- E. Lack of calcium in food

171. A man was intoxicated with mushrooms. They contain muscarine that stimulates muscarinic cholinoreceptors. What symptoms signalize intoxication with inedible mushrooms?

- A. Myotic pupils
- B. Mydriatic pupils
- C. Bronchi dilatation
- D. Increased heart rate
- E. Rise of arterial pressure

172. There was a record of some anthrax cases among animals in a countryside. The spread of disease can be prevented by means of immunization. What kind of vaccine should be used?

- A. STI live vaccine
- B. BCG vaccine
- C. Salk vaccine
- D. Sabin's vaccine
- E. Diphtheria and tetanus toxoids and pertussis vaccine

173. An infectious disease unit admitted a patient with signs of jaundice caused by hepatitis virus. Select an indicator that is specific only for parenchymatous jaundice:

- A. Increase in ALT and AST rate
- B. Hyperbilirubinemia
- C. Bilirubinuria
- D. Cholaemia
- E. Urobilinuria

174. A patient presents with dysfunction of cerebral cortex accompanied by epileptic seizures. He has been administered a biogenic amine synthesized from glutamate and responsible for central inhibition. What substance is it?

- A. Gamma-amino butyric acid
- B. Serotonin
- C. Dopamine
- D. Acetylcholine
- E. Histamine

175. A 50 year old patient underwent resection of tumour of large intestine wall. Microscopically it presents itself as fascicles of divergent collagen fibers of different thickness and form and some monomorphous fusiform cells that are irregularly distributed among the fibers. Cellular atypia is not evident. What tumour is it?

- A. Hard fibroma
- B. Fibromyoma
- C. Soft fibroma
- D. Desmoma
- E. Fibrosarcoma

176. Toxic affection of liver results in dysfunction of protein synthesis. It is usually accompanied by the following kind of dysproteinemia:

- A. Absolute hypoproteinemia
- B. Relative hypoproteinemia
- C. Absolute hyperproteinemia
- D. Relative hyperproteinemia
- E. Paraproteinemia

177. A cell at the stage of mitosis anaphase was stimulated by colchicine that inhibits chromosome separation to the poles. What type of mutation will be caused?

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

178. Examination of duodenal contents revealed some pyriform protozoa with twin nuclei and four pairs of flagella. There were two supporting filaments between the nuclei and a suckorial disc on the ventral side. What representative of protozoa was revealed in this patient?

- A. *Lambia*
- B. *Toxoplasma*
- C. *Leishmania*
- D. Intestinal trichomonad
- E. Trypanosome

179. In order to prevent massive haemorrhage in the region of oral cavity floor it is required to ligate an artery which is located within Pirogov's triangle. What artery is it?

- A. Lingual artery
- B. Superior thyroid artery
- C. Facial artery
- D. Ascending pharyngeal artery
- E. Maxillary artery

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

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

181. A shepherd who has tended sheep together with dogs consulted a doctor about pain in his right subcostal area, nausea, vomiting. Roentgenoscopy revealed a tumour-like formation. What kind of helminthiasis might be suspected?

- A. Echinococcosis
- B. Ascariasis
- C. Enterobiasis
- D. Taeniarhynchosis
- E. Taeniasis

182. For relief of hypertensive crisis a doctor administered a patient a drug that apart from antihypertensive effect has also sedative, spasmolytic and anti-convulsive effect. The drug was taken parenterally. When it is taken enterally it acts as a laxative and cholagogue. What drug was administered?

- A. Magnesium sulfate
- B. Dibazolium
- C. Reserpine
- D. No-spa
- E. Apressin

183. A bacteriological laboratory received sputum sample of a patient suffering from tuberculosis. Bacterioscopic examination of smears and detection of tuberculosis bacillus can be realized by one of enrichment methods that involves processing of sputum only with solution of caustic soda. What is this method called?

- A. Homogenization
- B. Inactivation
- C. Flotation
- D. Filtration
- E. Neutralization

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

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

185. A patient with diabetes mellitus complicated by angiopathy has been recommended a drug which is a sulphonyl urease derivate of the second generation. It improves microcirculation and is known for its relatively good tolerance. What drug is it?

- A. Glibenclamide
- B. Glibutidum
- C. Insulin
- D. Acarbose
- E. Adrenalin

186. A child is pale, pastose, muscular tissue is bad developed, lymph nodes are enlarged. He often suffers from angina and pharyngitis, blood has signs of lymphocytosis. The child is also predisposed to autoallergic diseases. What type of diathesis can be presumed in this case?

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

187. A 26 year old pregnant woman is under treatment at an in-patient hospital. After a continuous attack of vomiting she was found to have reduced volume of circulating blood. What kind of change in general blood volume is the case?

- A. Polycythemic hypovolemia
- B. Simple hypovolemia
- C. Oligocythemic hypovolemia
- D. Polycythemic hypervolemia
- E. Oligocythemic hypervolemia

188. Vomiting matters of a patient suspected of having cholera were delivered to the bacteriological laboratory.

The material was used for preparing a "hanging drop" specimen. What type of microscopy will be applied for identification of the causative agent by its mobility?

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

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

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

190. A 45 year old male died from disseminated tuberculosis. On autopsy the symptoms of tuberculosis were confirmed by both microscopical and histological analyses. All the affected organs had epithelioid cell granulomas with caseous necrosis in the centre. What kind of hypersensitivity reaction underlies the process of granuloma development?

- A. Delayed
- B. Antibody-dependent cytotoxicity
- C. Complement-dependent cytotoxicity
- D. Anaphylactic
- E. Immune complex

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

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

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

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

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

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

194. 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

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

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

196. One of sections of central nervous system has layerwise arrangement of neurocytes. Among them there are cells of the following forms: stellate, fusiform, horizontal, pyramidal. What section of central nervous system is this structure typical for?

- A. Cortex of cerebrum
- B. Spinal cord
- C. Cerebellum
- D. Medulla oblongata
- E. Hypothalamus

197. 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

198. During examination of a patient a dentist revealed a lot of "white spots zones of enamel demineralization. What microorganisms take part in the development of this process?

- A. *Streptococcus mutans*
- B. *Streptococcus salivarius*
- C. *Streptococcus pyogenes*
- D. *Veilonella parvula*
- E. *Staphylococcus epidermidis*

199. A 4 year old child presents with general weakness, sore throat and deglutitive problem. After his examination a doctor suspected diphtheria and sent the material to the bacteriological laboratory.

In order to determine the diphtheria causative agent the material should be inoculated into the following differential diagnostic medium:

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

200. 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*