

1. An unconscious patient was delivered to the admission ward. Objectively: the patient's skin is cold, pupils are myotic, he has laboured Cheyne-Stokes respiration, arterial pressure is low, urinary bladder is full. What substance has caused intoxication?

- A. Narcotic analgetics
- B. Tranquilizers
- C. Non-narcotic analgetics
- D. Muscarinic receptor blockers
- E. -

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. A woman works as railway traffic controller. She suffers from seasonal vasomotor rhinitis and gets treatment in the outpatient setting. She was prescribed an antihistamine that has no effect upon central nervous system. What drug is it?

- A. Loratadine
- B. Dimedrol
- C. Promethazine
- D. Suprastin
- E. Tavegil

4. 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

5. Examination of a patient suffering from cancer of urinary bladder revealed high rate of serotonin and hydroxyanthranilic acid. It is caused by excess of the following amino acid in the organism:

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

6. Blood of a 12 year old boy presents low concentration of uric acid and accumulation of xanthine and hypoxanthine. This child has genetic defect of the following enzyme:

- A. Xanthine oxidase
- B. Arginase
- C. Urease
- D. Ornithine carbamoyltransferase
- E. Glycerylkinase

7. A patient who suffers from insomnia caused by emotional disorder was prescribed a hypnotic drug with tranquillizing effect. What hypnotic was prescribed?

- A. Nitrazepam
- B. Phenobarbital
- C. Chloral hydrate
- D. Sodium ethaminal
- E. Bromisoval

8. A patient is ill with diabetes mellitus accompanied by hyperglycemia on an empty stomach (7,2 millimole/l). The hyperglycemia rate can be retrospectively estimated (over the last 4-8 weeks before the examination) on the ground of the rate of the following blood plasma protein:

- A. Glycated hemoglobin
- B. Albumin
- C. Fibrinogen
- D. C-reactive protein
- E. Ceruloplasmin

9. In course of laparotomy a surgeon revealed gangrenous lesion of descending colon. It was caused by thrombosis of the following artery:

- A. Sinister colic
- B. Median colic
- C. Dexter colic
- D. Ileocolic
- E. Superior mesenteric artery

10. 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

11. A patient has low rate of magnesium ions that are necessary for affixion of ribosomes to the endoplasmic reticulum. It is known that it causes disturbance of protein biosynthesis. At what stage is protein biosynthesis impaired?

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

12. A healthy man is in a region with high risk of catching malaria. What drug should be administered for individual chemoprophylaxis of malaria?

- A.** Chingamin
- B.** Sulfalen
- C.** Tetracycline
- D.** Metronidazole
- E.** Biseptol

13. A full-term newborn child has yellowish skin and mucous membranes. This might be probably caused by temporary deficiency of the following enzyme:

- A.** UDPglucuronyltransferase
- B.** Uridine transferase
- C.** Heme synthetase
- D.** Heme oxygenase
- E.** Biliverdin reductase

14. A patient ill with neurodermatitis has been taking prednisolone for a long time. Examination revealed high rate of sugar in his blood. This complication is caused by the drug influence upon the following link of carbohydrate metabolism:

- A.** Gluconeogenesis activation
- B.** Glycogenogenesis activation
- C.** Intensification of glucose absorption in the bowels
- D.** Inhibition of glycogen synthesis
- E.** Activation of insulin decomposition

15. Labelled amino acids alanine and tryptophane were injected to a mouse in order to study localization of protein synthesis in its cells. The labelled amino acids will be accumulated near the following organellas:

- A.** Ribosomes
- B.** Smooth endoplasmic reticulum
- C.** Cell centre
- D.** Lysosomes
- E.** Golgi apparatus

16. 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

17. Inflammation of the tympanic cavity (purulent otitis media) was complicated by inflammation of mammillary process sockets. What wall of tympanic cavity did the pus penetrate into the sockets through?

- A.** Posterior
- B.** Anterior
- C.** Medial
- D.** Lateral
- E.** Superior

18. Examination of a patient revealed typical presentations of collagenosis. This pathology is characterized by increase of the following urine index:

- A.** Hydroxyproline
- B.** Arginine
- C.** Glucose
- D.** Mineral salts
- E.** Ammonium salts

19. Untrained people often have muscle pain after sprints as a result of lactate accumulation. This might be caused by intensification of the following biochemical process:

- A.** Glycolysis
- B.** Gluconeogenesis
- C.** Pentose phosphate pathway
- D.** Lipogenesis
- E.** Glycogenesis

20. Examination of a patient suffering from frequent haemorrhages in the inner organs and mucous membranes revealed proline and lysine being included in collagen fibers. Impairment of their hydroxylation is caused by lack of the following vitamin:

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

21. During an experiment a skeletal muscle is stimulated by a series of electric impulses. What type of muscle contraction will be observed provided that each subsequent impulse comes in the period of shortening of the previous single muscle contraction?

- A. Holotetanus
- B. Partial tetanus
- C. Asynchronous tetanus
- D. A series of single contractures
- E. Muscle contracture

22. A 48 year old patient complained about intense pain, slight swelling and reddening of skin over the joints, temperature rise up to 38°C . Blood analysis revealed high concentration of urates. This condition might be caused by disturbed metabolism of:

- A. Purines
- B. Collagen
- C. Cholesterol
- D. Pyrimidines
- E. Carbohydrates

23. 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

24. A 46 year old woman suffering from cholelithiasis developed jaundice. Her urine became dark-yellow and feces became colourless. Blood serum will have the highest concentration of the following substance:

- A. Conjugated bilirubin
- B. Unconjugated bilirubin
- C. Biliverdin
- D. Mesobilirubin
- E. Urobilinogen

25. A patient suffering from infectious mononucleosis has been taking glucocorticosteroids for two weeks. This

resulted in remission but the patient got exacerbation of chronic tonsillitis. This complication is induced by the following effect of glucocorticosteroids:

- A. Immunosuppressive
- B. Anti-inflammatory
- C. Anti-shock
- D. Antiallergenic
- E. Antitoxic

26. A 62 year 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

27. A newborn child has convulsions that have been observed after prescription of vitamin B_6 . This most probable cause of this effect is that vitamin B_6 is a component of the following enzyme:

- A. Glutamate decarboxylase
- B. Pyruvate dehydrogenase
- C. Netoglutarate dehydrogenase
- D. Aminolevulinic acid synthase
- E. Glycogen phosphorylase

28. A patient who has been abusing tobacco smoking for a long time has got cough accompanied by excretion of viscous mucus; weakness after minor physical stress, pale skin. The patient has also lost 12,0 kg of body weight. Endoscopic examination of biopsy material his illness was diagnosed as squamous cell carcinoma. Name a pathological process that preceded formation of the tumour:

- A. Metaplasia
- B. Hypoplasia
- C. Hyperplasia
- D. Necrosis
- E. Sclerosis

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

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

30. A patient caught a cold after which there appeared facial expression disorder. He cannot close his eyes, raise his eyebrows, bare his teeth. What nerve is damaged?

- A. Facial
- B. Vagus
- C. Trigemini
- D. Glossopharyngeal
- E. Infraorbital

31. A patient underwent an operation on account of gall bladder excision that resulted in obstruction of *Ca* absorption through the bowels wall. What vitamin will stimulate this process?

- A. D_3
- B. *PP*
- C. *C*
- D. B_{12}
- E. *K*

32. 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

33. 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

34. A patient complains of frequent diarrheas, especially after consumption of rich food, weight loss. Laboratory examination revealed steatorrhea; his feces were hypocholic. What might have caused such condition?

- A. Obturation of biliary tracts
- B. Inflammation of mucous membrane of small intestine
- C. Lack of pancreatic lipase
- D. Lack of pancreatic phospholipase
- E. Unbalanced diet

35. Examination of a patient with pustular skin lesions allowed to isolate a causative agent that forms in the blood agar roundish yellow middle-sized colonies surrounded by haemolysis zone. Smears from the colonies contain irregular-shaped clusters of gram-positive cocci. The culture is oxidase- and catalase-positive, ferments mannitol and synthesizes plasmocoagulase. What causative agent was isolated?

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

36. A patient complained about being unable to adduct and abduct fingers in the metacarpophalangeal articulations towards and away from the 3rd finger. Which muscles' function is impaired?

- A. Interosseous muscles
- B. Lumbrical muscles
- C. Breviflexors of fingers
- D. Long flexors of fingers
- E. Extensors

37. 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

38. A 34 year old woman was diagnosed with hereditary microspherocytic hemolytic anemia (Minkowsky-Shauffard disease). What mechanism caused haemolysis of erythrocytes?

- A. Membranopathy
- B. Enzymopathy
- C. Hemoglobinopathy
- D. Autoimmune disorder
- E. Bone marrow hypoplasia

39. According to the model of double DNA helix that was suggested by Watson and Creek, it was established that one of chains would not be lost during replication and the second chain would be synthesized complementary to the first one. What way of replication is it?

- A. Semiconservative
- B. Analogous
- C. Identical
- D. Dispersed
- E. Conservative

40. A 4 year old child was admitted to the orthopaedic department with shin fracture together with displacement. Bone fragments reposition requires preliminary analgesia. What preparation should be chosen?

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

41. A patient suffers from hepatocirrhosis. State of antitoxic liver function can be characterized by examination of the following substance excreted by urine:

- A. Hippuric acid
- B. Ammonium salts
- C. Creatinine
- D. Uric acid
- E. Amino acids

42. A 22 year old patient from the West Ukraine complains of laboured nasal breathing. Morphological examination of biopsy material of nasal mucous membrane revealed lymphoid, epithelioid, plasma cells as well as Mikulicz's cells. What is the most probable diagnosis?

- A. Rhinoscleroma
- B. Glanders
- C. Tuberculosis
- D. Leprosy
- E. Syphilis

43. 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

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

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

45. Examination of coronary arteries revealed atherosclerotic calcified plaques closing vessel lumen by 1/3. The muscle has multiple whitish layers of connective tissue. What process was revealed in the myocardium?

- A. Diffusive cardiosclerosis
- B. Tiger heart
- C. Postinfarction cardiosclerosis
- D. Myocarditis
- E. Myocardium infarction

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

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

47. 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

48. Examination of an ovary specimen stained by hematoxylin-eosine revealed a follicle in which follicular epithelium consisted of 1-2 layers of cubic cells. There was also a bright red membrane around the ovocyte. What follicle is it?

- A. Primary
- B. Primordial
- C. Secondary
- D. Mature
- E. Atretic

49. A newborn child suffers from milk curdling in stomach, this means that soluble milk proteins (caseins) transform to insoluble proteins (paracaseins) by means of calcium ions and a certain enzyme. What enzyme takes part in this process?

- A. Renin
- B. Pepsin
- C. Gastrin
- D. Secretin
- E. Lipase

50. A patient suffers from diabetes melitus. After the regular insulin injection his condition grew worse: there appeared anxiety, cold sweat, tremor of limbs, general weakness, dizziness. What preparation can eliminate these symptoms?

- A. Adrenaline hydrochloride
- B. Butamide
- C. Caffeine
- D. Noradrenaline
- E. Glibutide

51. A patient has difficulties with hand movement. Examination revealed inflammation of common synovial sheath of flexor muscles. It is known from the patient's anamnesis that he got a stab wound of finger a week ago. Which finger was most probably damaged?

- A. *Digitus minimus*
- B. *Pollex*
- C. *Digitus medius*
- D. *Index*
- E. *Digitus anularis*

52. Clinical diagnosis of a female patient was gonorrhoea. What examination

method can be applied for confirmation of this diagnosis?

- A. Microscopy of pathological material
- B. Infection of laboratory animals
- C. Test with bacteriophage
- D. Hemagglutination reaction
- E. Immobilization reaction

53. Autopsy of a man who died from burn disease revealed brain edema, liver enlargement as well as enlargement of kidneys with wide light-grey cortical layer and plethoric medullary area. Microscopic examination revealed necrosis of tubules of main segments along with destruction of basal membranes, interstitium edema with leukocytic infiltration and haemorrhages. What is the most probable postmortem diagnosis?

- A. Necrotic nephrosis
- B. Tubulointerstitial nephritis
- C. Pyelonephritis
- D. Gouty kidney
- E. Myeloma kidney

54. A 30 year old man had been suffering from acute respiratory disease and died from cardiopulmonary decompensation. Autopsy revealed fibrinous-haemorrhagic inflammation in the mucous membrane of larynx and trachea, destructive panbronchitis, enlarged lungs that look black due to the multiple abscesses, haemorrhages, necrosis. What is the most probable postmortem diagnosis?

- A. Influenza
- B. Parainfluenza
- C. Respiratory syncytial infection
- D. Measles
- E. Adenoviral infection

55. A 19 year old woman suffers from primary syphilis. Doctor administered her complex therapy that includes benzylpenicillin sodium salt. What is the mechanism of action of this drug?

- A. It blocks synthesis of peptidoglycan of microbial membrane
- B. It blocks synthesis of cytoplasm proteins
- C. It blocks thiol enzymes
- D. It blocks RNA synthesis
- E. It blocks DNA synthesis

56. A 65 year old female patient suffers from chronic renal insufficiency accompanied by evident edemata caused by chronic glomerulonephritis. What diuretic should be administered for forced diuresis?

- A. Furosemide
- B. Hydrochlorothiazide
- C. Chlorthalidone
- D. Cyclometazide
- E. Acetazolamide

57. 6 months after labour a woman had uterine hemorrhage. Gynaecological examination of uterine cavity revealed a dark-red tissue with multiple cavities resembling of a "sponge". Microscopic examination of a tumour revealed in blood lacunas atypic light epithelial Langhans cells and giant cells of syncytiotrophoblast. What tumour is it?

- A. Chorioepithelioma
- B. Squamous cell nonkeratinous carcinoma
- C. Adenocarcinoma
- D. Fibromyoma
- E. Cystic mole

58. 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

59. A patient suffering from periodical attacks caused by inhalation of different flavoring substances was diagnosed with atopic bronchial asthma. IgE level was increased. This is typical for the following type of reactions:

- A. Anaphylactic reactions
- B. Cytotoxic reactions
- C. Immunocomplex reactions
- D. delayed-type hypersensitivity
- E. Autoimmune reactions

60. During regular examination of schoolchildren it was revealed that a 10 year old girl had asymmetric oval eggs with a larva in the scrape from her perianal folds. What diagnosis should be made?

- A. Enterobiasis
- B. Ascariasis
- C. Amebiasis
- D. Trichocephalosis
- E. Ankylostomiasis

61. Histological examination of a 40 year

old man's thymus revealed reduced share of parenchymatous elements, increased share of adipose and loose connective tissue, its enrichment with thymus bodies. The organ's mass was unchanged. What is this phenomenon called?

- A. Age involution
- B. Accidental involution
- C. Hypotrophy
- D. Dystrophy
- E. Atrophy

62. 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

63. Researchers of a bacteriological laboratory examine tinned meat for botulinic toxin. For this purpose a group of mice was injected with an extract of the material under examination and antitoxic antitoxin serum of A, B, E types. A control group of mice was injected with the same extract but without antitoxin serum. What serological reaction was applied?

- A. Neutralization
- B. Precipitation
- C. Complement binding
- D. Opsonocytotoxic
- E. Double immune diffusion

64. A clinic observes a 49 year old patient with significant prolongation of coagulation time, gastrointestinal haemorrhages, subcutaneous hematomas. These symptoms might be explained by the deficiency of the following vitamin:

- A. K
- B. B₁
- C. B₆
- D. H
- E. E

65. A patient suffering from chronic cardiac insufficiency was recommended to undergo a prophylactic course of treatment with a cardiological drug from the group of cardiac glycosides that is to be taken enterally. What drug was recommended?

- A. Digoxin
- B. Strophanthine
- C. Corglycon
- D. Cordiamin
- E. Cordarone

66. A cerebral trauma caused increased ammonia generation. What amino acid participates in the excretion of ammonia from the cerebral tissue?

- A. Glutamic
- B. Tyrosine
- C. Valine
- D. Tryptophan
- E. Lysine

67. During the repeated Widal's agglutination test it was noticed that the ratio of antibody titers and O-antigens *S.typhi* in the patient's serum had increased from 1:100 to 1:400. How would you interpret these results?

- A. The patient has typhoid fever
- B. The patient is an acute carrier of typhoid microbes
- C. The patient is a chronic carrier of typhoid microbes
- D. The patient previously had typhoid fever
- E. The patient was previously vaccinated against typhoid fever

68. It is known that the gene responsible for development of blood groups according to AB0 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

69. 48 hours after tuberculin test (Mantoux test) a child had a papule 10 mm in diameter on the spot of tuberculin injection. What hypersensitivity mechanism underlies these changes?

- A. Cellular cytotoxicity
- B. Anaphylaxy
- C. Antibody-dependent cytotoxicity
- D. Immunocomplex cytotoxicity
- E. Granulomatosis

70. Examination of a newborn boy's genitalia revealed an urethral hiatus that opens on the underside of his penis. What malformation is it?

- A. Hypospadias
- B. Hermaphroditism
- C. Epispadia
- D. Monorchism
- E. Cryptorchidism

71. 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*

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

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

73. People adapted to high external temperatures have such peculiarity: profuse sweating isn't accompanied by loss of large volumes of sodium chloride. This is caused by the effect of the following hormone upon the perspiratory glands:

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

74. 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+}

75. A patient has been suffering from diarrhea for 5 day. On the fifth day colonoscopy revealed that membrane of rectum was inflamed, there were greyish-green films closely adhering to the subjacent tissue. What is the most

probable diagnosis?

- A. Dysentery
- B. Typhoid fever
- C. Nonspecific ulcerous colitis
- D. Salmonellosis
- E. Crohn's disease

76. A 17 year old boy fell seriously ill, the body temperature rose up to $38,5^{\circ}\text{C}$, there appeared cough, rhinitis, lacrimation, nasal discharges. What inflammation is it?

- A. Catarrhal
- B. Serous
- C. Fibrinous
- D. Purulent
- E. Hemorrhagic

77. A 25 year old Palestinian woman complains of weakness, dizziness, dyspnea. In anamnesis: periodically exacerbating anemia. In blood: Hb - 60 g/l, erythrocytes - $2,5 \cdot 10^{12}/\text{l}$, reticulocytes - $35^{\circ}/_{\infty}$, anisocytosis and poikilocytosis of erythrocytes, a lot of target cells and polychromatophils. What type of anemia is it?

- A. Thalassemia
- B. Sickle-cell anemia
- C. Minkowsky-Shauffard disease
- D. Addison-Biermer disease
- E. Glucose 6-phosphate dehydrogenase-deficient anemia

78. A patient suffering from initial hypertension has been taking an anti-hypertensive preparation for a long time. Suddenly he stopped taking this preparation. After this his condition grew worse, this led to development of hypertensive crisis. This by-effect can be classified as:

- A. Abstinence syndrome
- B. Cumulation
- C. Tolerance
- D. Sensibilization
- E. Dependence

79. Inflammatory processes cause synthesis of protein of acute phase in an organism. What substances stimulate their synthesis?

- A. Interleukin-1
- B. Immunoglobulins
- C. Interferons
- D. Biogenic amines
- E. Angiotensin

80. A 42 year old woman with neuralgia of trifacial nerve complains about periodical reddening of the right part of her face and neck, sense of warmth gush, increased skin sensitivity. These effects can be explained by the following type of arterial hyperemia:

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

81. A 30 year old woman has face edemata. Examination revealed proteinuria (5,87 g/l), hypoproteinemia, dysproteinemia, hyperlipidemia. What condition is the set of these symptoms typical for?

- A. Nephrotic syndrome
- B. Nephritic syndrome
- C. Chronic pyelonephritis
- D. Acute renal failure
- E. Chronic renal failure

82. 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

83. A patient has a decreased vasopressin synthesis that causes polyuria and as a result of it evident organism dehydration. What is the mechanism of polyuria development?

- A. Reduced tubular reabsorption of water
- B. Reduced tubular reabsorption of Na ions
- C. Reduced tubular reabsorption of protein
- D. Reduced glucose reabsorption
- E. Acceleration of glomerular filtration

84. A 35 year old man consulted a dentist about reduced density of dental tissue, high fragility of teeth during eating solid food. This patient suffers the

most probably from the deficiency of the following mineral element:

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

85. A patient staying in the pulmonological department was diagnosed with pulmonary emphysema accompanied by reduced elasticity of pulmonary tissue. What type of respiration is observed?

- A. Expiratory dyspnea
- B. Inspiratory dyspnea
- C. Superficial respiration
- D. Infrequent respiration
- E. Periodic respiration

86. A 4 year old child complained of pain during deglutition, indisposition. Objectively: palatine arches and tonsils are moderately edematous and hyperemic, there are greyish-white films up to 1 mm thick closely adhering to the subjacent tissues. What pathological process are these changes typical for?

- A. Inflammation
- B. Dystrophy
- C. Necrosis
- D. Metaplasia
- E. Organization

87. An unconscious young man with signs of morphine poisoning entered admission office. His respiration is shallow and infrequent which is caused by inhibition of respiratory centre. What type of respiratory failure is it?

- A. Ventilative dysregulatory
- B. Ventilative obstructive
- C. Ventilative restrictive
- D. Perfusive
- E. Diffusive

88. A patient with cholelithiasis fell ill with mechanic jaundice. Examination revealed that the stone was in the common bile duct. What bile-excreting ducts make up the obturated duct?

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

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

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

90. After destruction of CNS structures an animal lost orientative reflexes. What structure was destroyed?

- A. Quadrigeminal plate
- B. Red nucleus
- C. Lateral vestibular nuclei
- D. Black substance
- E. Medial reticular nuclei

91. 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

92. A 62 year old patient who previously worked as stoker was admitted to a hospital with complaints about general weakness, abrupt weight loss, hoarse voice, dyspnea, dry cough. Laryngoscopy revealed a tumour in the pharynx that invaded vocal cords and epiglottis. What is the most probable cause of tumour development?

- A. Polycyclic aromatic carbohydrates
- B. Nitrosamines
- C. Aromatic amines and amides
- D. Retroviruses
- E. Ionizing radiation

93. Examination of a man who had been working hard under higher temperature of the environment revealed abnormal quantity of blood plasma proteins. What phenomenon is the case?

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

94. A patient ill with thrombophlebitis of his lower limbs had chest pain, blood spitting, progressing respiratory insufficiency that led to his death. Autopsy diagnosed multiple lung infarctions. What is the most probable cause of their development?

- A. Thromboembolism of pulmonary artery branches
- B. Thrombosis of pulmonary artery branches
- C. Thrombosis of bronchial arteries
- D. Thromboembolism of bronchial arteries
- E. Thrombosis of pulmonary veins

95. 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

96. 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

97. A patient in postoperative period was prescribed an anticholinesterase drug for stimulation of intestinal peristalsis and tonus of urinary bladder. What drug is it?

- A. Proserin
- B. Dichlothiazide
- C. Reserpine
- D. Mannitol
- E. Propanolol

98. A patient has acne on his face. Microscopic examination of scrapings from the affected areas revealed living porrect vermiform arthropoda 0,2-0,5 mm large with four pairs of short extremities in the front part of their bodies. What is the laboratory diagnosis?

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

99. Among junior children of an orphanage an outbreak of intestinal infection with signs of colienteritis was registered. In order to identify isolated causative agent it is necessary to:

- A. Study antigenic properties of the causative agent
- B. To determine sensitivity to antibiotics
- C. To study sensitivity to bacteriophages
- D. To study biochemical properties of the causative agent
- E. To study virulence of the causative agent

100. 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

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

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

102. A virological laboratory obtained pathological material (mucous discharges from nasal meatuses) taken from a patient with provisional diagnosis "influenza". What quick test will allow to reveal specific viral antigen in the material under examination?

- A. Direct and indirect immunofluorescence test
- B. Direct and indirect fluorescence immunoassay
- C. Hemagglutination inhibition assay
- D. Radioimmunoassay
- E. -

103. A family of students who came from Africa got a child with anemia signs. The child died soon. Examination revealed that the child's erythrocytes have abnormal semilunar shape. Specify genotypes 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

104. Two hours after an exam a student had a blood count done and it was revealed that he had leukocytosis without significant leukogram modifications. What is the most probable mechanism of leukocytosis development?

- A. Redistribution of leukocytes in the organism
- B. Leukopoiesis intensification
- C. Deceleration of leukocyte lysis
- D. Deceleration of leukocyte migration to the tissues
- E. Leukopoiesis intensification and deceleration of leukocyte lysis

105. 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

106. Hepatitis has led to the development of hepatic failure. Mechanism of edemata formation is activated by the impairment of the following liver function:

- A. Protein-synthetic
- B. Barrier
- C. Chologenic
- D. Antitoxic
- E. Glycogen-synthetic

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

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

108. A patient staggers and walks astraddle. He has hypomyotonia of arm and leg muscles, staccato speech. In what brain section is this affection localized?

- A. Cerebellum
- B. Putamen
- C. Caudate nucleus
- D. Motor cortex
- E. Red nucleus

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

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

110. Normal, actively dividing cells of human red bone marrow are analyzed. What number of cells' chromosomes is typical for G1 period?

- A. 46
- B. 48
- C. 47
- D. 45
- E. 23

111. Blood group of a 30 year old man was specified before an operation. His blood is Rh-positive. Reaction of erythrocyte agglutination was absent with standard sera of $O_{\alpha\beta}$ (I), A_{β} (II), B_{α} (III) groups. The blood under examination is of the following group:

- A. $O_{\alpha\beta}$ (I)
- B. A_{β} (II)
- C. B_{α} (III)
- D. AB (IV)
- E. -

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

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

113. 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

114. A patient was stung by a bee. Examination revealed that his left hand was hot, pink, edematic, there was a big red blister on the site of sting. What is the leading mechanism of edema development?

- A. Increased vessel permeability
- B. Reduced vessel filling
- C. Injury of vessels caused by the sting
- D. Drop of oncotic pressure in tissue
- E. Drop of osmotic pressure in tissue

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

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

116. A sportsman needs to improve his sporting results. He was recommended to take a preparation that contains carnitine. What process is activated the most by this compound?

- A. Fatty acids transporting
- B. Amino acids transporting
- C. Calcium ions transporting
- D. Glucose transporting
- E. Vitamin K transporting

117. Laboratory examination of a child revealed increased concentration of leucine, valine, isoleucine and their ketoderivatives in blood and urine. Urine smelt of maple syrup. This disease is characterized by the deficit of the following enzyme:

- A. Dehydrogenase of branched amino acids
- B. Aminotransferase
- C. Glucose-6-phosphatase
- D. Phosphofructokinase
- E. Phosphofructomutase

118. A 7 year old child often suffers from streptococcic angina. Doctor suspected development of rheumatism and administered serological examination. The provisional diagnosis will be most probably confirmed by presence of antibodies to the following streptococcic antigen:

- A. O-streptolysin
- B. C-carbohydrate
- C. M-protein
- D. Erythrogenic toxin
- E. Capsular polysaccharide

119. A 46 year old patient who had been suffering from tuberculosis for 6 years died from massive pulmonary haemorrhage. Autopsy revealed different-sized foci of sclerosis and caseous necrosis in lungs, in the upper part of the right lung there was a cavity 5 cm in diameter with dense grey walls, the cavity contained liquid blood and blood clots. What type of tuberculosis is it?

- A. Fibrocavernous
- B. Acute cavernous
- C. Infiltrative
- D. Fibrous focal
- E. Acute focal

120. A patient suffering from pheochromocytoma complains of thirst, dry mouth, hunger. Blood test for sugar revealed hyperglycemia. What type of hyperglycemia is it?

- A. Adrenal
- B. Hypercorticoid
- C. Alimentary
- D. Somatotropic
- E. Hypoinsulinemic

121. A patient has been suffering from elevated temperature and attacks of typical cough for 10 days. Doctor administered inoculation of mucus from the patient's nasopharynx on the agar. What microorganism is presumed?

- A. Pertussis bacillus
- B. Pfeiffer's bacillus
- C. Listeria
- D. Klebsiella
- E. Staphylococcus

122. 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

123. 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

124. A couple had a child with Down's disease. Mother is 42 years old. This disease is most probably caused by the following impairment of prenatal development:

- A. Gametopathy
- B. Blastopathy
- C. Embryopathy
- D. Non-specific fetopathy
- E. Specific fetopathy

125. A man weighs 80 kg, after long physical activity his circulating blood volume is reduced down to 5,4 l, hematocrit makes up 50%, whole blood protein is 80 g/l. These blood characteristics are determined first of all by:

- A. Water loss with sweat
- B. Increased number of erythrocytes
- C. Increased protein concentration in plasm
- D. Increased circulating blood volume
- E. Increased diuresis

126. Examination of a pregnant woman revealed twice as much concentration of fibrinogen in blood plasm. What ESR can this woman have?

- A. 40-50 mm/h
- B. 10-15 mm/h
- C. 2-12 mm/h
- D. 5-10 mm/h
- E. 0-5 mm/h

127. 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

128. Introduction of a big dose of histamine to an experimental animal caused abrupt drop of arterial pressure as a result of:

- A. Dilatation of resistance vessels
- B. Constriction of resistance vessels
- C. Increase of heart rate
- D. Decrease of heart rate
- E. Decrease of heart rate and force

129. 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

130. Vagus branches that innervate heart are being stimulated during an experiment. This caused reduction of heart rate due to the intensification of the following process (through the cell membrane of cardiac pacemaker):

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

131. 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

132. A scheme presents an exocrine gland that has unbranched excretory duct with a terminal part in form of a saccule opening into the duct. How is this gland called according to the morphological classification of exocrine glands?

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

133. 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. -

134. A patient complained about muscle rigidity, constrained motions, constant tremor of arms. On the grounds of examination his disease was diagnosed as Parkinson's disease. What drug should be administered?

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

135. Examination of a patient with impaired blood coagulation revealed thrombosis of a branch of inferior mesenteric artery. What bowel segment is damaged?

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

136. When blood circulation in the damaged tissue is restored, then lactate accumulation comes to a stop 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

137. A woman was delivered to a hospital for trachea intubation. What of the following drugs should be applied in this case?

- A. Dithylinum
- B. Nitroglycerine
- C. Metronidazole
- D. Atropine sulfate
- E. Gentamycin sulfate

138. 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

139. A patient suffers from chronic left-ventricular insufficiency. What medication should be administered?

- A. Digoxin
- B. Bemegride
- C. Etimizole
- D. Vinpocetine
- E. Pyracetam

140. Roentgenological examination of skull base bones revealed enlargement of sellar cavity, thinning of anterior clinoid processes, destruction of different parts, destruction of different parts of sella turcica. Such bone destruction might be caused by a tumour of the following endocrinous gland:

- A.** Hypophysis
- B.** Epiphysis
- C.** Thymus gland
- D.** Adrenal glands
- E.** Thyroid gland

141. Patients who suffer from severe diabetes and don't receive insulin have metabolic acidosis. This is caused by increased concentration of the following metabolites:

- A.** Ketone bodies
- B.** Fatty acids
- C.** Unsaturated fatty acids
- D.** Triacylglycerols
- E.** Cholesterol

142. 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

143. 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

144. A 47 year old man with myocardium infarction was admitted to the cardiological department. What changes of cellular composition of peripheral blood are induced by necrotic changes in the myocardium?

- A.** Neutrophilic leukocytosis
- B.** Monocytosis
- C.** Eosinophilic leukocytosis
- D.** Thrombocytopenia
- E.** Lymphopenia

145. A patient with skin mycosis has disorder of cellular immunity. The most typical characteristic of it is reduction of the following index:

- A.** T-lymphocytes
- B.** Immunoglobulin G
- C.** Immunoglobulin E
- D.** B-lymphocytes
- E.** Plasmocytes

146. 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

147. 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

148. Autopsy of a 5 year old child revealed in the area of vermis of cerebellum a soft greyish-pink node 2 cm in diameter with areas of haemorrhage. Histologically this tumour consisted of atypical monomorphous small roundish cells with big polymorphous nuclei. What tumour is it?

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

149. Voluntary breath-holding caused increase of respiration depth and frequency. The main factor stimulating these changes of external respiration is:

- A. Increased tension of CO_2 in blood
- B. Increased tension of O_2 in blood
- C. Decreased tension of O_2 in blood
- D. Decreased tension of CO_2 in blood
- E. Decreased concentration of H^+ in blood

150. A patient was admitted to the surgical department with inguinal hernia. During the operation the surgeon performs plastic surgery on posterior wall of inguinal canal. What structure forms this wall?

- A. Transverse fascia
- B. Aponeurosis of abdominal external oblique muscle
- C. Inguinal ligament
- D. Loose inferior edge of transverse abdominal muscle
- E. Peritoneum

151. A patient has delayed conduction of excitement through the atrioventricular node. What changes of ECG will be observed?

- A. Prolongation of $P - Q$ interval
- B. Prolongation of $Q - S$ interval
- C. Negative T wave
- D. $S - T$ -segment displacement
- E. Prolongation of $Q - T$ interval

152. Surface with an intact toad on it was inclined to the right. Tone of extensor muscles became reflexory higher due to the activation of the following receptors:

- A. Vestibuloreceptors of utricle and saccule
- B. Vestibuloreceptors of semicircular ducts
- C. Mechanoreceptors of foot skin
- D. Photoreceptors of retina
- E. Proprioceptors

153. A female patient underwent liver transplantation. 1,5 month after it her condition became worse because of reaction of transplant rejection. What factor of immune system plays the leading part in this reaction?

- A. T-killers
- B. Interleukin-1
- C. Natural killers
- D. B-lymphocytes
- E. T-helpers

154. Microscopical examination of a microbial culture revealed fusiform spore-forming microorganisms that get violet-blue Gram's stain. What microorganisms were revealed?

- A. Clostridia
- B. Streptococci
- C. Spirochaete
- D. Actinomycete
- E. Diplococci

155. 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

156. 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

157. A patient in a transplantation centre underwent heart transplantation. The organ was taken from a donor who died in a road accident. Foreign heart can be rejected as a result of development of transplantation immunity. It is usually prevented by means of:

- A. Immunosuppressors
- B. Chemotherapy
- C. Ultrasound
- D. Enzymes
- E. X-ray therapy

158. 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

159. A patient had been suffering from

profuse diarrhea and vomiting for 2 days. He died from acute dehydration. Autopsy revealed that the intestinal wall was edematous and hyperemic, with multiple haemorrhages in the mucous membrane. Intestine lumen contains whitish fluid resembling of rice water. What disease caused death?

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

160. Examination of a 66 year old patient revealed a lytic tumour in the locus of pathological rib fracture. Histologically this tumour consists of atypical plasmoblasts. Further examination revealed osteoporosis in the bones of vertebral column and pelvis. These changes are typical for:

- A. Myelomatosis
- B. Tuberculous osteomyelitis
- C. Ewing's osteosarcoma
- D. Neuroblastoma
- E. Metastatic lung cancer

161. A patient died from acute cardiac insufficiency, among clinical presentations there was gastrointestinal haemorrhage. Examination of mucous membrane of stomach revealed some defects reaching myenteron; their edges and bottom were mostly even and loose, some of them contained dark-red blood. What pathological process was revealed?

- A. Acute ulcers
- B. Chronic ulcers
- C. Erosions
- D. Thrombosis
- E. Inflammation

162. A 33 year old man died from uraemia. Autopsy revealed enlarged kidneys weighing 500,0 each and consisting of multiple cavities 0,5-2 cm in diameter. The cavities were full of light-yellow transparent liquid. Renal pelvis and ureters had no peculiarities. What renal disease caused uraemia?

- A. Bilateral polycystic renal disease
- B. Chronic pyelonephritis
- C. Renal tumour
- D. Renal tuberculosis
- E. Rapidly progressing glomerulonephritis

163. A patient got a trauma that caused dysfunction of motor centres regulating

activity of head muscles. In what parts of cerebral cortex is the respective centre normally localized?

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

164. Material taken from a patient with provisional diagnosis "influenza" was referred to a laboratory. For virological examination the hemadsorption reaction was applied. This reaction can be applied for detection of the following viruses:

- A. Viruses containing hemagglutinins
- B. All the simple viruses
- C. All the complex viruses
- D. DNA-genomic viruses
- E. Any viruses

165. Lungs of a preterm infant have areas of atelectasis (pulmonary collapse). The main cause is:

- A. Surfactant deficiency
- B. Increased viscous resistance
- C. Underdeveloped inspiration muscles
- D. Diminished force of surface tension of lungs
- E. Surfactant excess

166. An alcoholic woman has born a girl with mental and physical developmental lag. Doctors diagnosed the girl with fetal alcohol syndrome. What effect is the cause of the girl's state?

- A. Teratogenic
- B. Mutagenic
- C. Malignization
- D. Carcinogenic
- E. Mechanic

167. A viral infection has damaged cells that form walls of bile capillaries. This stimulated conditions for inflow of bile into the blood of sinusoidal capillaries. What cells are damaged?

- A. Hepatocytes
- B. Kupffer's cells
- C. Ito cells
- D. Pit-cells
- E. Endotheliocytes

168. Dietary intake of a 30 year old nursing woman contains 1000 mg of calcium, 1300 mg of phosphorus and 20 mg of iron per day. It is necessary to change content of these mineral substances in the followi-

ng way:

- A. To increase phosphorus content
- B. To increase calcium content
- C. To reduce fluorine content
- D. To increase iron content
- E. To reduce iron content

169. A patient with obliterating atherosclerosis underwent sympathectomy of femoral artery in the region of femoral trigone. What type of arterial hyperemia was induced by the operation?

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

170. A 15 year old girl has pale skin, glossitis, gingivitis. Blood count: erythrocytes - $3,3 \cdot 10^{12}/l$, hemoglobin - 70 g/l, colour index - 0,5. Examination of blood smear revealed hypochromia, microcytosis, poikilocytosis. What type of anemia is it?

- A. Iron-deficient
- B. B_{12} -folic acid-deficient
- C. Sickle-cell
- D. Hemolytic
- E. Thalassemia

171. Burned skin surface was treated with a certain preparation. Its antiseptic properties are provided by atomic oxygen that is formed in presence of organic substances. What preparation was applied?

- A. Potassium permanganate
- B. Furacillin
- C. Chlorhexidine bigluconate
- D. Alcoholic iodine solution
- E. Sodium hydrocarbonate

172. Cardinal symptoms of primary hyperparathyroidism are osteoporosis and renal lesion along with development of urolithiasis. What substance makes up the basis of these calculi in this disease?

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

173. A patient with chronic cardiac insufficiency has been taking foxglove (*Digitalis*) preparations for a long time. Due to the violation of intake schedule the woman got symptoms of intoxication.

These symptoms result from:

- A. Material cumulation
- B. Tachyphylaxis
- C. Idiosyncrasy
- D. Antagonism
- E. Sensibilization

174. A patient was diagnosed with paralysis of facial and masticatory muscles. The haematoma is inside the genu of internal capsule. What conduction tract is damaged?

- A. *Tr. cortico-nuclearis*
- B. *Tr. cortico-spinalis*
- C. *Tr. cortico-thalamicus*
- D. *Tr. cortico-fronto-pontinus*
- E. *Tr. cortico-temporo-parieto-occipito-pontinus*

175. A 5 year old child is ill with measles. Blood analysis revealed increase of total number of leukocytes up to $13 \cdot 10^9/l$. Leukogram: basophils - 0, eosinophils - 1, myelocytes - 0, juvenile neutrophils - 0, band neutrophils - 2, segmented neutrophils - 41, lymphocytes - 28, monocytes - 28. Name this phenomenon:

- A. Monocytosis
- B. Agranulocytosis
- C. Lymphocytosis
- D. Eosinopenia
- E. Neutropenia

176. A patient was admitted to the infectious department. His symptoms: dry skin, decreased skin turgor, rice-water stool. The patient was diagnosed with cholera. What disorder of water-electrolytic balance is most often observed in this disease?

- A. Isoosmotic hypohydration
- B. Hyperosmotic hyperhydration
- C. Hypoosmotic hypohydration
- D. Hyperosmotic hypohydration
- E. Hypoosmotic hyperhydration

177. A foreign body (a button) closed space of the right superior lobar bronchus. What segments of the right lung won't be supplied with air?

- A. Apical, posterior, anterior
- B. Superior and inferior lingular
- C. Apical and posterior basal
- D. Apical and median basal
- E. Medial and lateral

178. A patient was diagnosed with bartholinitis (inflammation of greater

vulvovaginal glands). In which organ of urogenital system are these glands localized?

- A. Large lips of pudendum
- B. Small lips of pudendum
- C. Clitoris
- D. Vagina
- E. Uterus

179. A histological specimen presents an artery. One of the membranes of its wall has flat cells lying on the basal membrane. What type of cells is it?

- A. Endothelium
- B. Mesothelium
- C. Smooth myocytes
- D. Fibroblasts
- E. Macrophages

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

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

181. Ultrasonic examination of a patient revealed aneurism in the area of aortic arch that caused alteration of vocal function of larynx. What nerve was constricted?

- A. Recurrent laryngeal
- B. Diaphragmatic
- C. Superior laryngeal
- D. Mandibular
- E. Sublingual

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

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

183. A 23 year old man has perforation of hard palate. In the area of this perforation there was a compact well-defined formation. Microscopic examination of the resected formation revealed a large focus of caseous necrosis surrounded by granulation tissue with endovascu-

lis, cellular infiltration composed of lymphocytes, epithelioid cells (mainly plasmocytes). What is the most probable diagnosis?

- A. Syphilis
- B. Tuberculosis
- C. Scleroma
- D. Sarcoma
- E. Leprosy

184. A young woman who entered a production department where it strongly smelt of paints and varnishes had a bronchospasm. This reflex was caused by irritation of the following receptors:

- A. Irritant
- B. Juxtaglomerular
- C. Pleura receptors
- D. Central chemoreceptors
- E. Peripheral chemoreceptors

185. A 50 year old man who was referred to the hospital for treatment of cervical lymphadenitis underwent test for individual sensitivity to penicillin. 30 seconds after he went hot all over, AP dropped down to 0 mm Hg that led to cardiac arrest. Resuscitation was unsuccessful. Autopsy results: acute venous plethora of internal organs; histological examination of skin (from the site of injection) revealed degranulation of mast cells (tissue basophils). Degranulation was also revealed in myocardium and lungs. What type of hypersensitivity reaction is it?

- A. Anaphylactic
- B. Delayed-type hypersensitivity
- C. Complement-mediated cytotoxic
- D. Immunocomplex-mediated
- E. -

186. 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

187. Study of fingerprints (dactylography) is used by criminalists for personal identification as well as for diagnostics of genetic abnormalities, particularly Dawn's

disease. What layer of skin determines individuality of fingerprints?

- A. Dermopapillary
- B. Horny
- C. Reticular
- D. Clear (stratum lucidum epidermidis)
- E. Basal

188. A patient has herpetic rash. What medication should be administered?

- A. Acyclovir
- B. Gentamycin
- C. Clotrimazole
- D. Benzylpenicillin sodium salt
- E. Biseptol

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

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

190. An isolated muscle fiber is under examination. It was established that the threshold of stimulation force became significantly lower. What is the cause of this phenomenon?

- A. Activation of sodium channels of membrane
- B. Activation of potassium channels of membrane
- C. Inactivation of sodium channels of membrane
- D. Inactivation of potassium channels of membrane
- E. Block of energy production in the cell

191. 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*

192. Surgical approach to the thyroid gland from the transverse (collar) approach involves opening of interaponeurotic suprasternal space. What anatomic

structure localized in this space is dangerous to be damaged?

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

193. A doctor revealed tissues injury on patient's scalp with localized suppurations and diagnosed his disease as myiasis. This infestation is caused by larvae of the following insect:

- A. Wohlfahrt fly
- B. Kissing bug
- C. Stable fly (*Stomoxys calcitrans*)
- D. Malarial mosquito
- E. Mosquito

194. A patient with hip fracture was prescribed a narcotic analgetic. Its anesthetic action is determined by interaction with the following receptors:

- A. Opiate receptors
- B. Adrenoreceptors
- C. Cholinoreceptors
- D. Benzodiazepine receptors
- E. GABA-ergic receptors

195. A patient consumed a lot of reach in proteins food that caused increase of rate of proteolytic enzymes of pancreatic juice. It is also accompanied by increase of rate of the following enzyme:

- A. Trypsin
- B. Pepsin
- C. Enterokinase
- D. Gastricsin
- E. Renin

196. In course of an experiment thalamocortical tracts of an animal were cut. What type of sensory perception remained intact?

- A. Olfactory
- B. Auditory
- C. Exteroreceptive
- D. Visual
- E. Nociceptive

197. A 2 year old child had acute respiratory viral infection and died from cardiopulmonary decompensation. Autopsy revealed that his right lung was hyperemic; in the 2nd, 6th and 10th segments and on the incision there were airless yellowish foci of irregular form, from several mm up to 1 cm large. Mi-

roscopical examination revealed exudate consisting mainly of neutrophils in the given areas of pulmonary tissue in the alveoles, bronchioles and bronchial tubes. What is the most probable diagnosis?

- A. Focal pneumonia
- B. Interstitial pneumonia
- C. Croupous pneumonia
- D. Acute bronchitis
- E. Pulmonary abscess

198. A 25 year old patient was examined by a medical board. Examination revealed pathology of chest. Transverse dimensions were too small and the sternum was strongly protruding. What chest type is it?

- A. Keel chest
- B. Funnel chest
- C. Flat chest
- D. Cylindrical chest
- E. Barrel chest

199. An infectious disease caused contractive activity of muscles that contract and dilate eye pupil (paralytic state). What functional eye system was damaged?

- A. Accomodative
- B. Dioptric
- C. Ancillary
- D. Photosensory
- E. Lacrimal apparatus

200. Brain tomography revealed a tumour in the region of red nucleus. What part of brain is damaged?

- A. Midbrain
- B. Medulla oblongata
- C. Cerebellum
- D. Interbrain
- E. Pons cerebelli