

1. A child was hospitalized with diagnosis of diphtheria. What should be given to this child for specific therapy?

- a. Diphtheria anatoxin, antibiotics
- b. Diphtheria vaccines: DPT, DT, diphtheria vaccine
- c. Codivac vaccine, sulfanilamides
- d. Diphtheria antitoxin serum, antibiotics**
- e. Diphtheria bacteriophage

2. A patient presents with disturbed patency of the airways at the level of small and medium bronchial tubes. What acid-base imbalance can the patient develop?

- a. Metabolic alkalosis
- b. Respiratory alkalosis
- c. Metabolic acidosis
- d. Acid-base balance remains unchanged
- e. Respiratory acidosis**

3. A dentist administers anesthesia in the area of the upper second molar. What nerves does the doctor anesthetize?

- a. Rr. alveolares superiores medii
- b. Rr. alveolares superiores anteriores
- c. Rr. alveolares inferiores posteriores
- d. Rr. alveolares superiores posteriores**
- e. Rr. alveolares inferiores anteriores

4. A 42-year-old man, a hunter, was preparing a fox pelt. One week later, he fell ill. The disease manifested as nervous excitement, hydrophobia, and seizures. Autopsy of the hunter's body revealed encephalitis with damage to the brainstem, walls of the third ventricle, and hippocampus. Encephalitis manifested as accumulation of lymphocytes and microglial cells around dead neurons and blood vessels. Eosinophilic inclusions (Babesh-Negri bodies) were detected in the hippocampal neurons. What disease can be diagnosed in the deceased?

- a. Brucellosis
- b. Plague
- c. Anthrax
- d. Rabies**
- e. Tularemia

5. Condition of a patient with thoracic trauma deteriorates quickly: he develops increasing asphyxiation, facial pallor, tachycardia. What is the likely cause of these developments?

- a. Thoracic contusion
- b. Pneumothorax**
- c. Rib fracture
- d. Response to pain stimulus
- e. Fright

6. Erythrocytes of the patient with hemolytic anemia present with significant decrease of pyruvate kinase activity. What metabolic process is disturbed in this case?

- a. Glycogenolysis
- b. Glycogen synthesis
- c. Pentose-phosphate pathway of glucose oxidation
- d. Glycolysis**
- e. Gluconeogenesis

7. A 58-year-old man has a clinical presentation of acute pancreatitis. This diagnosis can be confirmed, if urine levels of a certain substance are elevated. Name this substance:

- a. Amylase**
- b. UreaD) Albumin
- c. Uric acid
- d. Residual nitrogen

8. Heart auscultation detected a systolic murmur in the II intercostal space on the left parasternal line. In this case, the doctor was able to auscultate a pathology of the:

a. Valve of the superior vena cava

**b. Valve of the pulmonary trunk**

c. Aortic valve

d. Bicuspid valve

e. Tricuspid valve

9. A 53-year-old woman complains of painful swelling in her left parotid area. The swelling appeared 5 days ago. Objectively the skin in this area is slightly hyperemic and tender. Excretory duct of the salivary gland produces a small amount of viscous turbid yellow-green liquid. Microscopy detects a diffuse infiltration of the gland with segmented neutrophils. Make the diagnosis:

a. Glandular adenoma

b. Sjogren syndrome

c. Acute serous parotitis

**d. Acute suppurative parotitis**

e. Epidemic parotitis

10. During oral cavity examination a dentist noticed eruption of the permanent canines in a child. The child grows and develops normally. Determine the child's age:

a. 9-10 years

b. 13-16 years

**c. 11-13 years**

d. 8-9 years

e. 6-7 years

11. Aortic stenosis was detected in a young woman, but no circulatory disorders were observed in the patient. What immediate mechanism ensures cardiac compensation in such cases?

**a. Homeometric**

b. Increased blood pressure

c. Decreased heart weight

d. Myogenic dilation

e. Heterometric

12. In the course of a surgery, the fibers of the 12th pair of cranial nerves were damaged. This damage manifested as:

a. Disturbed contraction of the laryngeal muscles

b. Disturbed contraction of the pharyngeal muscles

**c. Disturbed function of the lingual muscles**

d. Disturbed contraction of the muscles that elevate the hyoid bone

e. Disturbed contraction of the muscles of the soft palate

13. After exposure to radiation, a rabbit presents with the III stage of acute radiation sickness that manifests in bone marrow syndrome. Damage to what tissue is the leading link in the pathogenesis of radiation sickness-related disorders in this case?

**a. Hematopoietic tissue**

b. Glandular epithelium

c. Bone tissue

d. Nerve tissue

e. Gonadal epithelium

14. To improve tooth mineralization, dentists prescribe  $\text{Ca}^{2+}$  preparations. This substance ~~HAS NO EFFECT~~ on the following processes in an organism:

a. Development of myocardial depolarization

**b. Oncotic pressure generation**

c. Hemostasis

d. Muscle contraction

e. Synaptic transmission of excitation

15. A patient with a head trauma was brought to the hospital. He was diagnosed with a fracture of the sphenoid bone at the base of the sphenoidal process. What canal is likely to be damaged in this case?

- a. Pterygoid canal
- b. Carotid canal
- c. Facial canal
- d. Tympanic canal
- e. Musculotubal canal

16. Oral examination reveals marked reddening of mucosa at the root of the tongue. What structure is involved in the inflammatory process?

- a. Veil of palate
- b. Tonsil of torus tubaris
- c. Pharyngeal tonsil
- d. Palatine tonsil
- e. Lingual tonsil

17. A patient with osteomyelitis of the mandible developed sepsis. Blood culture microbiology detects Gram-positive and catalase-positive cocci capable of growing in the presence of NaCl. What microorganisms are the likely cause of this disease?

- a. Sarcinae
- b. Staphylococci
- c. Streptococci
- d. Escherichia
- e. Corynebacteria

18. During a spinal surgery, the patient's vertebral arches and their connecting ligaments were removed. Name these ligaments:

- a. Interspinous ligaments
- b. -
- c. Posterior longitudinal ligament
- d. Anterior longitudinal ligament
- e. Yellow ligaments

19. Curariform drugs are used to immobilize the patient during a surgery. Their mechanism of action is based on the blockade of:

- a. Conduction of excitation in the nerve fibers
- b. Noradrenaline release into the synaptic cleft
- c. Muscarinic acetylcholine receptors of smooth muscles
- d. Acetylcholine release into the synaptic cleft
- e. Nicotinic acetylcholine receptors of skeletal muscles

20. A histological specimen shows three neurons: pseudounipolar, bipolar, and multipolar. How many axons will each of these cell have?

- a. None
- b. Three
- c. One
- d. Two
- e. Many

21. A 50-year-old man has been undergoing treatment for peptic ulcer disease of the stomach. His digestion normalized, pain disappeared, and general mood improved. However, several weeks later he again developed epigastric pain, heartburn, and sour eructation. How can this clinical course be characterized?

- a. Prodromal stage
- b. Relapse
- c. Latent period
- d. Terminal state
- e. Remission

22. What types of excretory ducts are distinguished in the large salivary glands?

- a. Intralobular and extraglandular ducts
- b. Intercalated ducts, striated ducts, and the common duct
- c. Intralobular and interlobular ducts
- d. Intralobular ducts, interlobular ducts, and the primary duct of the gland**
- e. Intralobular ducts, striated ducts, and the common duct

23. A patient came to the dentist for tooth extraction. After the tooth had been extracted, the bleeding from the socket persisted for 15 minutes. The patient has a history of active chronic hepatitis. What is the likely cause of the prolonged bleeding time?

- a. Decreased blood level of fibrinogen**
- b. Hypocalcemia
- c. Thrombocytopenia
- d. Decreased albumin blood count
- e. Increased activity of anticoagulation system

24. A man cannot lift his drooping lower jaw. What muscles of the head \textbf{DO NOT} function properly in this case?

- a. Masseters**
- b. Zygomaticus minor
- c. Superior auricular
- d. Buccinators
- e. Zygomaticus major

25. A histological specimen of mucous tunic of a certain organ shows stratified epithelium consisting of 20-25 cellular layers with squamous superficial cells. Name the organ from which this sample was obtained:

- a. Small intestine
- b. Gastric fundus
- c. Duodenum
- d. Esophagus**
- e. Large intestine

26. A 37-year-old patient was diagnosed with essential hypertension and prescribed lisinopril. What is the mechanism of action of this drug?

- a. Blocks angiotensin receptors in blood vessels
- b. Blocks potassium channels
- c. Binds angiotensin-converting enzyme and blocks the conversion of angiotensin I into angiotensin II**
- d. Blocks calcium channels
- e. Stimulates imidazoline receptors

27. What component of the parodontium performs the sensory function that regulates the force of masticatory pressure applied to the teeth?

- a. Periodontium**
- b. Cement
- c. Periosteum
- d. Gums
- e. Bones of the alveolar process

28. A 32-year-old woman with asymptomatic progression of the disease for the second time gave birth to a stillborn baby with marked microcephaly. What disease can be suspected in this case?

- a. Listeriosis
- b. Toxoplasmosis**
- c. Brucellosis
- d. Histoplasmosis
- e. Syphilis

29. Heart auscultation revealed a split first heart sound over the base of the xiphoid process. In this case, the doctor was auscultating the pathology of the following valve:

- a. Aortic valve
- b. Valve of the superior vena cava
- c. Pulmonary valve
- d. Bicuspid valve
- e. Tricuspid valve**

30. A patient with acute appendicitis presents with increasing leukocyte blood count. What type of leukocytosis can be observed in the patients diagnosed with this condition?

- a. Neutrophilic**
- b. Lymphocytosis
- c. Basophilic
- d. Monocytosis
- e. Eosinophilic

31. A 62-year-old woman has insomnia. What medicine should she be prescribed?

- a. Piracetam
- b. Nitrazepam**
- c. Droperidol
- d. Caffeine and sodium benzoate
- e. Dimedrol (Diphenhydramine)

32. A histology slide with a section of a dental crown shows a small number of radially positioned collagen fibers (Korff fibers) in the intercellular substance of dentin. What layer of dentin is it?

- a. Granular layer
- b. Mantle dentin**
- c. Interglobular dentin
- d. Predentin
- e. Parapulpal dentin

33. Two nucleotides have been lost in the sequence of DNA nucleotides due to the effect of radiation. What type of mutation occurred in the DNA strand?

- a. Translocation
- b. Duplication
- c. Replication
- d. Inversion
- e. Deletion**

34. A patient with skin burns was delivered to a hospital. To clean the wound from necrotic tissues and mucus the doctor prescribed an enzymatic drug for topical treatment. Name this drug:

- a. Pepsin
- b. Tripsin**
- c. Asparaginase
- d. Pancreatin
- e. Streptokinase

35. A child presents with dry cough. What non-narcotic antitussive drug can relieve the patient's condition?

- a. Morphine hydrochloride
- b. Potassium iodide
- c. Glaucine hydrochloride**
- d. Codeine phosphate
- e. Althaea officinalis roots

36. At the cementoenamel junction there are non-calcified areas, through which infection often penetrates into the tooth. Name these structures:

- a. Odontoblasts
- b. Enamel tufts**
- c. Tomes' dentinal fiber
- d. Ameloblasts

e. Enamel prisms

37. A 28-year-old patient presented with elevated blood pressure, hematuria, and facial edemas. Despite the treatment, the signs of renal failure were exacerbating. 6 months later the patient died of uremia. Microscopy of the kidneys shows proliferation of nephrothelium in the glomerular capsules and proliferation of podocytes that contributes to crescent formation. Sclerosis and hyalinosis of the glomeruli is observed. Make the diagnosis:

- a. Acute glomerulonephritis
- b. Acute pyelonephritis
- c. Chronic glomerulonephritis
- d. Nephrotic syndrome

**e. Subacute glomerulonephritis**

38. A patient with heatstroke was delivered to the admission room. What compensatory reactions develop in the patient's body in such case?

- a. Peripheral vasoconstriction
- b. Coronary vasospasm
- c. Peripheral vasodilatation**
- d. Increased heart rate
- e. Persistent hyperglycemia

39. A lancelet embryo is at the developmental stage during which its cells multiply, while its general volume remains practically unchanged. What developmental stage is it?

- a. Gastrulation
- b. Neurulation
- c. Organogenesis
- d. Histogenesis

**e. Cleavage**

40. During a regular examination of a 2-year-old child, the doctor noted that the child's anterior fontanelle is open. At what age does it close?

- a. During the first year of life
- b. At the age of 3 months
- c. At the age of 1-2 months
- d. During the second year of life**
- e. At the age of 6-9 months

41. Autopsy of the body of a 62-year-old man detected a focus of tissue breakdown in the liver. The lesion is 4 cm in diameter and filled with a yellowish-green fluid. What is the most likely diagnosis?

- a. Granuloma
- b. Phlegmon
- c. Empyema
- d. Abscess**
- e. Carbuncle

42. Dental implants were installed in a patient. Three weeks later, implant rejection occurred. What blood cells play the largest role in this pathological process?

- a. Immunoglobulins M
- b. T lymphocytes**
- c. Plasmacytes
- d. B lymphocytes
- e. Immunoglobulins E

43. A person bitten by a stray dog came to the surgeon's office. Wide lacerated wounds are localized on the patient's face. What rabies-prevention aid should be provided to this person?

- a. Hospitalize the patient and continue to monitor his condition
- b. Prescribe combined vitamin therapy
- c. Immediately administer DPT vaccine
- d. Immediately administer normal gamma globulin

**e. Begin immunization with antirabic vaccine**

44. A 34-year-old woman has a gastric ulcer. To describe the location of the ulcer, the doctor must know, into what parts the stomach can be divided:

- a. Body and fundus of the stomach, greater and lesser curvatures of stomach
- b. Anterior and posterior stomach walls, pyloric stomach and cardiac stomach
- c. Fundus and fornix of the stomach, pyloric stomach, pyloric antrum, cardiac stomach

**d. Body and fundus of the stomach, pyloric stomach and cardiac stomach**

- e. Fundus of the stomach, greater and lesser curvatures of stomach, cardiac stomach

45. During the oral cavity examination, the dentist detected an inflammation of the tissues that surround the tooth. What anatomical structure is inflamed in this case?

- a. Gingiva
- b. Alveola dentalis
- c. Parodontium**
- d. -
- e. Cementum

46. To study the functional state of the kidneys, the challenge test with a para-aminohippuric acid (PAH) was used. What mechanism of urine formation can be studied using this test?

- a. Filtration system
- b. Countercurrent system
- c. Concentration system
- d. Secretion system**
- e. Reabsorption system

47. A patient has markedly dilated subcutaneous veins in the area of the anterior abdominal wall around the umbilical region. In what vessel would there be elevated blood pressure, contributing to these symptoms?

- a. V. mesenterica inferior
- b. V. portae hepatis**
- c. V. cava superior
- d. V. mesenterica superior
- e. V. cava inferior

48. The patient's right palpebral fissure is markedly larger than the left. What mimic muscle is functionally disturbed in this case?

- a. M. corrugator supercilli
- b. M. zygomaticus major
- c. M. orbicularis oculi**
- d. M. procerus
- e. M. occipitofrontalis (venter frontalis)

49. Bacteriology of dental plaque from the oral cavity of a 10-year-old child detects numerous *Streptococcus mutans*. This microorganism plays the leading role in the development of:

- a. Parodontosis
- b. Chronic pulpitis
- c. Vesicular stomatitis
- d. Caries**
- e. Ulcerative gangrenous stomatitis

50. What drug can be used in treatment of ciliary arrhythmia, is a potassium channel blocker, alpha and beta dual receptor blocker, and can cumulate in the body?

- a. Metoprolol
- b. Verapamil
- c. Amiodarone**
- d. Nicotinamide
- e. Asparcam

51. This extremely dangerous disease can be transmitted from a sick animal to a human via a flea bite. It exhibits characteristic lymphogenic spread of the causative agent with hemorrhagic inflammation of the regional lymph nodes. Name this disease:

- a. Plague
- b. Cholera
- c. Anthrax
- d. Tuberculosis
- e. Tularemia

52. A patient has been diagnosed with mucopolysaccharidosis. What substances are typically deposited in various tissues of the body in this disease?

- a. Triglycerides
- b. Glycosaminoglycans
- c. Fructose
- d. Fatty acids
- e. Glycogen

53. A patient has deep lacerated wound with uneven edges. The wound is suppurating; its edges present with moist granulation tissue that does not protrude above the wound level. Name the type of wound healing:

- a. Healing by primary intention
- b. Healing by secondary intention
- c. Direct closure of the epithelial defect
- d. Healing under the scab
- e. Wound organization

54. A patient on examination presents with prolonged I heart sound. This heart sound occurs as the result of:

- a. Closing of the pulmonary valve
- b. Closing of the aortic valve
- c. Opening of the tricuspid valve
- d. Opening of the mitral valve
- e. Closing of the atrioventricular valves

55. Autopsy of the body of a man, who died during an abdominal surgery, revealed numerous thrombi in the veins of the lesser pelvis. Clinically, thromboembolic syndrome was detected. Where should the doctor search for the embolus?

- a. Portal vein
- b. Pulmonary arteries
- c. Brain
- d. Left ventricle of heart
- e. Veins of the lower extremities

56. Complex therapy of a patient with bronchopneumonia accompanied by exhausting dry cough includes a certain mucolytic agent that depolymerizes mucoproteins. Name this drug:

- a. Strophanthin
- b. Atenolol
- c. Neodicoumarin
- d. Codeine
- e. Acetylcysteine

57. A man complains to a dentist about problems with chewing and pain that occurs when he moves his jaw backwards. The doctor detected an inflammation of a certain masticatory muscle in this patient. Name this muscle:

- a. Medial pterygoid muscle
- b. Temporal muscle (anterior fibers)
- c. Temporal muscle (posterior fibers)
- d. Lateral pterygoid muscle

e. Masseter muscle

58. A 25-year-old man undergoes dental procedures. Several minutes after his oral cavity was lavaged with a furacilin (nitrofural) solution, he developed markedly swollen lips. What type of allergic reaction is observed in this case?

- a. Stimulating
- b. Cytolytic
- c. Delayed-type hypersensitivity
- d. Immune complex

**e. Anaphylactic**

59. After a traumatic brain injury the patient developed a urinary system dysfunction - polyuria. What hormone secretion was disturbed, resulting in polyuria in this patient?

- a. Mineralocorticoids
- b. Insulin
- c. ACTH

**d. Vasopressin**

- e. Adrenaline

60. The cessation of bleeding after a childbirth is associated with the effect of hormones on the uterine structures. What layer of this organ plays the largest role in this process?

- a. Outer layer of the myometrium
- b. Inner layer of the myometrium

**c. Middle layer of the myometrium**

- d. Perimetrium
- e. Endometrium

61. The patient's blood group is being determined using monoclonal test reagents. Agglutination reaction is positive with anti-A and anti-B reagents and negative with anti-D reagents. Name the blood group of this patient:

- a. O (I) Rh (+)
- b. A (II) Rh (+)
- c. AB (IV) Rh (+)

**d. AB (IV) Rh (-)**

- e. B (III) Rh (-)

62. Autopsy of a man, who died suddenly with signs of acutely disturbed cerebral circulation, revealed aneurysm rupture of the medial cerebral artery and a round cavity 4 cm in diameter filled with blood in his frontal lobe. Name this type of hemorrhage:

- a. Hematoma**
- b. Petechiae
- c. Hemorrhagic infiltration
- d. -

e. Contusion

63. Ketone bodies were detected in the urine of a patient. Ketone bodies appear in the urine during the following disease:

- a. Renal tuberculosis
- b. Renal infarction
- c. Acute glomerulonephritis
- d. Urolithiasis

**e. Diabetes mellitus**

64. Cells of sensory spinal ganglions are a part of reflex arches. What type of neurons are these cells?

- a. Bipolar
- b. Unipolar

**c. Pseudounipolar**

- d. Multipolar

- e. -

65. A 43-year-old woman against the background of septic shock presents with thrombocytopenia, decreased fibrinogen levels, fibrin degradation products appearing in the blood, and petechial hemorrhages. Specify the cause of these changes:

- a. Exogenous intoxication
- b. Disseminated intravascular coagulation**
- c. Hemorrhagic diathesis
- d. Autoimmune thrombocytopenia
- e. Disturbed platelet production

66. During cell analysis, their cytoplasm was determined to have high content of aminoacyl tRNA synthetase. This enzyme ensures the following process:

- a. Replication
- b. Repair
- c. Elongation
- d. Transcription
- e. Amino acid activation**

67. Local anesthetic lidocaine is widely used in dental practice. Lidocaine has an analgesic effect because it:

- a. Blocks voltage-gated potassium channels
- b. Blocks ligand-gated sodium channels
- c. Blocks voltage-gated calcium channels
- d. Activates voltage-gated potassium channels
- e. Blocks voltage-gated sodium channels**

68. A 5-year-old boy complains of intense headache and vomiting. Objectively, he has nuchal rigidity, vomiting without nausea, herpes rash on his face, and fever. What pathologic material should be obtained for bacteriology, to confirm the diagnosis of cerebrospinal meningitis?

- a. Fecal culture of N.Meningitidis
- b. A sample of N.Meningitidis bacteria from urogenital mucosa
- c. Urine culture of N.Meningitidis
- d. Spinal tap**
- e. Vomit content analysis

69. A patient has a parotid gland inflammation. What nerve is involved in the inflammatory process in this case?

- a. N. tympanicus
- b. N. maxillaris
- c. N. mandibularis
- d. N. facialis**
- e. N. linqualis

70. A 42-year-old woman, who has been keeping to a vegetarian diet for a long period of time, consulted a doctor. Examination revealed negative nitrogen balance in the patient. What factor is the most likely cause of such a condition?

- a. Insufficient amount of proteins in the diet**
- b. Insufficient amount of fats in the diet
- c. Insufficient amount of dietary fiber
- d. Decreased rate of metabolic processes
- e. Excessive amount of fats in the diet

71. For a rapid relief of hypertensive crisis, a 65-year-old man was prescribed a drug that suppresses the reabsorption of sodium chloride in the thick segment of the ascending limb of the loop of Henle and has marked diuretic effect. Name this drug:

- a. Triamterene
- b. Mannitol
- c. Furosemide**
- d. Hydrochlorothiazide

e. Spironolactone

72. A child presents with hepatomegaly, hypoglycemia, and convulsions that occur predominantly during fasting or in stress-inducing situations. The child is diagnosed with von Gierke disease (glycogen storage disease type I). What enzyme is affected by the genetic defect that is the cause of this disease?

- a. Amylase-1,6-glycosidase
- b. Glycogen phosphorylase
- c. Glucokinase
- d. Glucose 6-phosphatase**
- e. Phosphoglucomutase

73. A 27-year-old patient with neck wound has lost over 30% of blood volume. The patient is in severe condition: blood pressure - 60/40 mm Hg, heart rate - 140/min., respirations - 30/min., conscious.

Characterize the patient's condition:

- a. Coma
- b. Collapse
- c. Arterial hypertension
- d. Cardiogenic shock
- e. Hypovolemic shock**

74. Most epithelial cells sampled from the oral mucosa of a man contained one X chromatin body. It is characteristic of:

- a. Triple Y syndrome
- b. Triple X syndrome
- c. Klinefelter syndrome**
- d. Down syndrome
- e. Turner syndrome

75. A culture of Gram-positive cocci was isolated from the oral cavity of a clinically healthy 25-year-old person. These cocci have a slightly elongated shape, are arranged in pairs or short chains, form a capsule, and exhibit alpha hemolysis on blood agar. This person is a carrier of the following pathogen:

- a. Streptococcus pyogenes
- b. Streptococcus faecalis
- c. Streptococcus salivarium
- d. Peptostreptococcus
- e. Streptococcus pneumoniae**

76. A person develops alimentary (nutritional) hyperglycemia after eating, which stimulates secretion of the following hormone:

- a. Insulin**
- b. Adrenaline
- c. Noradrenaline
- d. Glucagon
- e. Cortisol

77. A patient with infiltrative pulmonary tuberculosis, who was undergoing treatment with isoniazid, developed signs of B6 hypovitaminosis. What is the cause of this condition?

- a. Isoniazid is a vitamin B6 antagonist**
- b. Vitamin biotransformation speeds up
- c. A strong connection forms between vitamin and blood plasma proteins
- d. Vitamin elimination speeds up
- e. Vitamin absorption slows down

78. A woman came to a dental clinic with complaints of severe toothache and extreme sensitivity to sweet and sour foods and thermal stimuli. She has a history of frequent maxillary sinusitis on the right. Examination of her oral cavity detected a carious tooth - the maxillary right first premolar. The doctor suggested anesthetizing the tooth for further treatment. What nerve innervates this tooth?

- a. N. incisivus
- b. N. alveolaris superior medius**
- c. N. infraorbitalis
- d. N. petrosus major
- e. N. mandibularis

79. At the crown apex of the second molar, on the surface that comes into contacts with the cheek, the doctor detected a carious cavity. Name the affected crown surface:

- a. Facies vestibularis**
- b. Facies occlusalis
- c. Facies distalis
- d. Facies lingualis
- e. Facies mesialis

80. Two weeks after the recovery from tonsillitis, a 17-year-old young man developed acute diffuse glomerulonephritis. What is the most common cause of this complication?

- a. Mycobacterium tuberculosis
- b. Viruses
- c. Streptococci**
- d. Candida fungi
- e. Staphylococci

81. A patient has been hospitalized with a rectal prolapse. Examination of the rectum detected small helminths detected attached to the mucosa. They resemble small whips with varying diameter of the body. Stool test revealed barrel-shaped eggs with bipolar plugs. What is the most likely causative agent of the disease?

- a. *Giardia intestinalis*
- b. *Entamoeba histolytica*
- c. *Ascaris lumbricoides*
- d. *Trichuris trichiura***
- e. *Enterobius vermicularis*

82. Fibrocartilaginous layer of trachea consists of C-shaped hyaline cartilage rings, with their open ends facing posteriorly. What tissue connects these open ends?

- a. Smooth muscular tissue**
- b. Loose fibrous connective tissue
- c. Dense unformed connective tissue
- d. Adipose connective tissue
- e. Striated muscular tissue

83. A child with signs of rickets has been prescribed a certain liposoluble vitamin drug by the pediatrician and dentist. This drug affects the metabolism of phosphorus and calcium in the body and facilitates calcium accumulation in bone tissue and dentine. If its content in the body is insufficient, there develop disorders of ossification process, dental structure, and occlusion. Name this drug:

- a. Retinol acetate
- b. Tocopherol acetate
- c. Ergocalciferol**
- d. Menadione (Vicasolum)
- e. Thyroidin

84. A patient diagnosed with hepatic abscess was brought into the surgery department. He has a history of recurrent gastrointestinal disorders. Laboratory stool analysis detected round cells with 4 nuclei. What protozoal invasion can be detected in this case?

- a. *Trichomonas vaginalis*
- b. *Entamoeba histolytica***
- c. *Entamoeba gingivalis*
- d. *Trichomonas hominis*
- e. *Balantidium coli*

85. A patient developed a tender red nodule in the lower jaw area. Histologically there is accumulation of purulent exudate in several hair follicles. What clinicopathological type of inflammation is observed?

- a. Phlegmon
- b. Furuncle
- c. Abscess
- d. Carbuncle**
- e. Hypostatic abscess

86. Before extracting a tooth, the dentist recommended the patient a drug that should be taken to prevent bleeding. Name this drug:

- a. Asparcam (potassium aspartate and magnesium aspartate)
- b. Magnesium sulfate
- c. Heparin
- d. Vicasol (Menadione)**
- e. Dimedrol (Diphenhydramine)

87. A patient diagnosed with renal failure shows signs of renal osteodystrophy accompanied by resorption of periodontal bone tissue. This condition is caused by disturbed formation of:

- a. 25(OH) D<sub>3</sub>
- b. 24, 25(OH)<sub>2</sub> D<sub>3</sub>
- c. 1,25(OH)<sub>2</sub> D<sub>3</sub>**
- d. D<sub>2</sub>
- e. D<sub>3</sub>

88. A patient presents with damaged fibers of the ninth pair of cranial nerves (glossopharyngeal nerve). What gustatory sensation will be disturbed in this case?

- a. Saltiness
- b. Sweetness
- c. Bitterness**
- d. Sourness
- e. All gustatory sensations

89. A 36-year-old woman came to a dentist with complaints of facial edema localized under her right eye. After examination, the dentist diagnosed her with phlegmon of the infraorbital region. What teeth often become the source of infection that spreads into this region?

- a. Upper lateral and central incisors
- b. Upper canine and first premolar**
- c. Upper first and second molars
- d. Second premolar and first molar
- e. Upper central incisor

90. Presence of citrulline and high ammonia levels are detected in the urine of a newborn. This child is likely to present with disturbed production of the following substance:

- a. Uric acid
- b. Urea**
- c. Creatinine
- d. Creatine
- e. Ammonia

91. A 36-year-old man traveled to the mountains for a vacation (altitude of 2000 meters above the sea level). He developed increased respiration rate, tachycardia, and slight dizziness. Two days later these signs disappeared. This process is called:

- a. Regeneration
- b. Proliferation
- c. Compensation
- d. Adaptation**
- e. Inhibition

92. A 14-year-old patient presents with disturbed twilight vision. What vitamin is deficient in the body of this patient?

- a. C
- b. B<sub>1</sub>
- c. B<sub>12</sub>
- d. A**
- e. B<sub>6</sub>

93. A child has a congenital immunodeficiency. The cell-mediated immunity is affected, causing frequent viral infections. It is likely to be caused by a disorder of the following organ:

- a. Thymus gland**
- b. Lymph nodes
- c. Red bone marrow
- d. Spleen
- e. Palatine tonsils

94. Normal occlusion of the dental arches can be made more pronounced by pulling the lower jaw backwards. What muscle performs this action?

- a. Lateral pterygoid
- b. Medial pterygoid
- c. Temporal**
- d. Sternocleidomastoid
- e. Masseter

95. Mitochondrial respiratory chain contains complex cytochrome proteins in its structure. What type of reactions do they catalyze?

- a. Redox**
- b. Deamination
- c. Decarboxylation
- d. Hydration
- e. Transamination

96. After a surgery an animal developed tetany as a result of low plasma calcium levels. What endocrine gland was removed in the animal?

- a. Parathyroid glands**
- b. Thymus
- c. Pineal gland
- d. Adrenal cortex
- e. Thyroid gland

97. There are several ways of ammonia neutralization in the body, with some organs having their own specific ways. What way of ammonia neutralization is characteristic of brain cells?

- a. NH<sub>4</sub><sup>+</sup> formation
- b. Glutamine formation**
- c. Asparagine formation
- d. Urea formation
- e. Creatine formation

98. A 50-year-old patient, who recovered from a heart attack, five years later died of chronic heart failure. Autopsy detects a dense sac-like protrusion on the lateral surface of the wall of the left ventricle. The wall in this place is thinned out, dense, and gray. What cardiac pathology can be characterized by these changes?

- a. Myocardial infarction
- b. Myocarditis
- c. Cardiomyopathy
- d. Chronic aneurysm**
- e. Cardiosclerosis

99. A 49-year-old man presents with facial edema, significant proteinuria, hypoproteinemia,

dysproteinemia, and hyperlipidemia. What provisional diagnosis can be made?

a. Nephrotic syndrome

- b. Prostatitis
- c. Cystitis
- d. Pyelonephritis
- e. Urolithiasis

100. A woman had been taking synthetic hormones during her pregnancy. Her newborn girl presents with excessive hairiness which has formal resemblance to adrenogenital syndrome. This sign of variability is called:

- a. Mutation
- b. Recombination
- c. Heterosis
- d. Replication
- e. Phenocopy

101. In an experiment, urethane poisoning was induced in a test animal. What type of hypoxia occurred as a result?

- a. Respiratory hypoxia
- b. Hypoxic hypoxia
- c. Tissue hypoxia

- d. Hemic hypoxia
- e. Circulatory hypoxia

102. A histopathological analysis of the tissues of an extracted tooth shows that a larger part of the dental cavity is filled with the collagen fiber-rich connective tissue and cellular infiltrations that are made up of lymphocytes and plasma cells. What type of pulpitis can be characterized by the described changes?

- a. -
- b. Gangrenous pulpitis
- c. Purulent pulpitis
- d. Granulating pulpitis
- e. Fibrous pulpitis

103. Examination of a 15-year-old patient shows that after a maxillofacial trauma he is unable to move his lower jaw downward. This pathology is likely to be caused by a damaged muscle. What muscle is damaged?

a. Geniohyoid muscle

- b. Temporal muscle
- c. Medial pterygoid muscle
- d. Masseter
- e. Lateral pterygoid muscle

104. A patient has been hospitalized in a severe general condition, with high temperature and difficulty breathing. Bacterioscopy of the material obtained from the patient's pharynx and airways allowed provisionally diagnosing the patient with diphtheritic croup. What staining technique was used in this case?

a. Neisser stain

- b. Burri-Gins stain
- c. Ziehl-Neelsen stain
- d. Ozheshko stain
- e. Peshkov stain

105. Biochemical analysis of amino acid contents of freshly synthesized polypeptides shows that in the process of their translation the first amino acid in each of these proteins will be the same. Name this amino acid:

- a. Histidine
- b. Serine

- c. Isoleucine
- d. Phenylalanine
- e. Methionine**

106. A patient is registered for regular check-ups. Laboratory analyses for viral hepatitis diagnostics are made. In the blood serum only antibodies to HbsAg are detected. Such result is indicative of:

- a. Acute viral hepatitis type B
- b. Acute viral hepatitis type C
- c. Past case of viral hepatitis type B**
- d. Chronic viral hepatitis type C
- e. Viral hepatitis type A

107. An ophthalmologist suspects blennorrhea (gonococcal conjunctivitis) in a child with signs of suppurative keratoconjunctivitis. What laboratory diagnostics should be conducted to confirm the diagnosis?

- a. Microscopy and serum diagnostics
- b. Serum diagnostics and allergy test
- c. Biological analysis and phagodiagnostics
- d. Biological analysis and allergy test
- e. Microscopy and bacteriological analysis**

108. A dentist has found an ulcer on the oral mucosa of a 7-year-old girl. The ulcer is 1.5 cm in diameter, it has uneven edges and a gray floor. After the ulcer scrape was stained using the Ziel-Nielsen technique, thin ruby-red bacilli were detected in the slide. The bacilli are isolated or arranged in chaotic clusters. This pathogen is characteristic of the following disease:

- a. Diphtheria
- b. Actinomycosis
- c. Syphilis
- d. Tuberculosis**
- e. Candidiasis

109. A 30-year-old breastfeeding woman keeps to the diet that daily provides her with 1000 mg of calcium, 1300 mg of phosphorus, and 20 mg of iron. How should the daily dosages of minerals in this diet be adjusted?

- a. Increase iron intake
- b. Increase calcium intake
- c. Increase phosphorus intake**
- d. Decrease fluorine intake
- e. Decrease iron intake

110. An enzyme, connected to substrate, interacts with it only with a part of its molecule. Name this part:

- a. Active center**
- b. Allosteric center
- c. Polypeptide chain portion
- d. Coenzyme
- e. Cofactor

111. What antimicrobial drug is not a cephalosporin antibiotic?

- a. Ceftriaxone
- b. Cefalexin
- c. Ciprofloxacin**
- d. Cefazolin
- e. Cefepime

112. Ten weeks after a case of jaundice, HbsAg were detected in the patient's blood. What pathology is it characteristic of?

- a. Viral hepatitis C
- b. Viral hepatitis B**

- c. Viral hepatitis E
- d. Viral hepatitis A
- e. Viral hepatitis D

113. An examination of tooth 16 revealed a cavity on its masticatory surface. The cavity has a narrow opening and is filled with softened dentin. Microscopically, there are bacteria in the dilated dentinal canaliculi, some canaliculi are destroyed, the cavities merge together into caverns, decalcification of enamel and dentin occurs without formation of the replacement dentin. Make the diagnosis:

- a. Chronic deep dental caries
- b. Acute superficial dental caries
- c. Acute deep dental caries**
- d. Chronic superficial dental caries
- e. Dental caries at the stage of white spot lesions

114. A patient with signs of anxiety, fear, uncertainty, and mental strain was prescribed diazepam.

What mechanism of tranquilizing action can be observed in this case?

- a. Interaction with benzodiazepine receptors**
- b. Interaction with dopamine receptors
- c. Interaction with adrenergic receptors
- d. Interaction with cholinergic receptors
- e. Interaction with serotonin receptors

115. Rectal microscopy shows large necrotic foci on the mucosa. Necrotic masses are saturated with fibrin, forming a film. Mucosa and submucosa on the periphery of the necrotic foci are hyperemic, swollen, and have hemorrhages and leukocyte infiltrations. What disease can be suspected?

- a. Cholera
- b. Salmonellosis
- c. Amebiasis
- d. Dysentery**
- e. Typhoid fever

116. A patient needs his tongue to be amputated due to a malignant tumor located there. Where can one easily find the lingual artery and ligate it?

- a. Carotid triangle
- b. Pirogov triangle**
- c. Omoclavicular triangle
- d. Omotrapezoid triangle
- e. Omotracheal triangle

117. A 65-year-old man presents with acute mandibular osteomyelitis. 3 days after the disease onset he developed marked edema of skin and soft submandibular cervical tissues. Microscopically there is a diffuse infiltration with neutrophils. What complication of the main disease occurred in the patient's skin tissues?

- a. Carbuncle
- b. Abscess
- c. Furuncle
- d. Phlegmon**
- e. Actinomycosis

118. To study the blood flow, a doctor placed the sensor in the area of the sulcus bicipitalis medialis. What vessel is being studied by the doctor?

- a. A) axillaris
- b. A) radialis
- c. A) ulnaris
- d. A) brachialis**
- e. A) profunda brahii

119. During parodontosis, destruction of protein and polysaccharide components of connective tissue occurs. Which of the proteins listed below is a component of connective tissue?

- a. Transferrin
- b. Ceruloplasmin
- c. Collagen**
- d. Antitrypsin
- e. Albumin

120. A dental surgeon has diagnosed a 24-year-old woman with suppurative inflammation of the sphenoidal sinus. All possible measures are taken to prevent the artery wall from being involved in this process. The artery is located in the cavernous sinus and its involvement can cause fatal hemorrhage. Name this artery:

- a. A) carotis interna**
- b. A) infraraorbitalis
- c. A) carotis externa
- d. F. supraorbitalis
- e. A) ophthalmica

121. After ineffective treatment of stomatitis with antibiotics, the patient consulted a dentist. The dentist made a diagnosis of herpetic stomatitis. What medicine should the patient be prescribed?

- a. Azithromycin
- b. Sulfacyl sodium (Sulfacetamide)
- c. Clotrimazole
- d. Metrogyl (Metronidazole)
- e. Acyclovir**

122. Because of a trauma, a patient developed a skin defect. To remove the defect, the surgeons replaced this patch of skin with a skin patch taken from other body part of the same patient. What type of transplantation is it?

- a. Autotransplantation**
- b. Xenotransplantation
- c. Allotransplantation
- d. Explantation
- e. Homotransplantation

123. During their expedition to the Middle East, the students found a 7-centimeter-long arthropod. Its body consists of cephalothorax with 4 pairs of ambulatory legs and segmented abdomen with two venom glands in its last segment. The gland openings are located on the tip of the hook-shaped sting. The animal was identified as a nocturnal predator, its venom is dangerous for humans. It belongs to the following order:

- a. Acarina
- b. Scorpiones**
- c. Solpugae
- d. Aranei
- e. Aphaniptera

124. A 6-month-old child has a dense red nodule on the skin. The nodule becomes pale when pressed. What disease can be characterized by these pathological changes?

- a. Lymphangioma
- b. Melanoma
- c. Leiomyoma
- d. Pigmented nevus
- e. Hemangioma**

125. A patient diagnosed with chronic myelogenous leukemia developed signs of necrotizing ulcerative stomatitis. Mucosal biopsy detected leukemic cells. In this case, oral cavity damage is associated with a certain link of tumor pathogenesis. Name this link.

- a. Initiation
- b. Mutational mechanism of transformation
- c. Tumor progression**

- d. Promotion
- e. Epigenomic mechanism of transformation

126. Three days after the filling of the first right premolar, the patient developed pain under the right eye and persistent nasal congestion accompanied by the fever of 38<sup>o</sup>C and discharge of purulent mucus from the right nasal passage. What mistake was likely made by the doctor in this case?

- a. Perforation of the right maxillary sinus
- b. Perforation of the sphenoid sinus
- c. Fracture of the interalveolar septum
- d. Perforation of the right wall of the nasal cavity
- e. Perforation of the infraorbital canal

127. How does pH of venous blood differ from pH of arterial blood and why?

- a. No difference
- b. Lower, due to O<sub>2</sub> release from the organism
- c. Higher, due to higher blood CO<sub>2</sub> levels
- d. Lower, due to higher blood CO<sub>2</sub> levels
- e. Higher, due to O<sub>2</sub> release from the organism

128. A woman complains of headache, muscle pain during swallowing, chewing, and eyeball movement, elevated temperature, swollen face and eyelids. The signs developed 1.5-2 months after she had eaten pork without sanitary certificate. What helminth can cause these signs in a human?

- a. Necator
- b. **Trichinella**
- c. Ascaris lumbricoides
- d. Ancylostoma
- e. Enterobius

129. Autopsy of an 86-year-old woman, who suffered from cerebral atherosclerosis, shows atrophy of her cerebral cortex. Name this type of atrophy based on its cause:

- a. Caused by physico-chemical factors
- b. Pressure-induced
- c. Dysfunctional
- d. Neurogenic
- e. **Insufficient blood supply**

130. An HIV-positive patient presents with suppressed activity of the immune system. In this case, the immunodeficiency is primarily caused by the damage to a certain group of cells. What cells are damaged?

- a. Suppressor T cells
- b. Killer T cells
- c. **Helper T cells**
- d. B lymphocytes
- e. Plasma cells

131. Acid resistance of human teeth depends on the ratio of calcium to phosphorus in the enamel. What is the normal calcium to phosphorus ratio?

- a. **1.67**
- b. 0.5
- c. 1.1
- d. 0.8
- e. 0.9

132. A certain disease of infection-allergic or unknown origin leads to bilateral diffuse or focal non-suppurative inflammation of renal glomerular apparatus with characteristic renal and extrarenal signs. Name this disease:

- a. Pyelonephritis
- b. Polycystic renal disease
- c. Nephrosclerosis

d. Glomerulonephritis

e. Nephrolithiasis

133. What type of hemophilia inheritance results in men being affected by hemophilia and in women being carriers of this disease?

a. X-linked dominant

**b. X-linked recessive**

c. Autosomal dominant

d. Autosomal recessive

e. Holandric

134. Examination of a patient detects an anomaly of enamel development. What structural components of the tooth bud were damaged, causing this condition?

a. Cervical loop

**b. Inner enamel epithelium**

c. Stratum intermedium

d. Stellate reticulum

e. Outer enamel epithelium

135. During dental manipulations in the oral cavity, a woman felt unwell: she developed headache and palpitations. Blood pressure measurement revealed a systolic pressure of 170 mm Hg. What is the normal value (mm Hg) of human systolic blood pressure?

a. 60-80

**b. 100-120**

c. 140-160

d. 160-180

e. 90-100

136. Contraction of cross-striated muscles is impossible without calcium. What do calcium ions bind to, when forming the actin-myosin cross-bridges?

a. Cholinergic receptors

b. Histamine receptors

c. Serotonin receptors

d. Adrenoceptors

**e. Troponin**

137. Correlation between one nerve fiber and all the muscle fibers it innervates is called a motor unit. What body part has the smallest number of muscle fibers innervated by one nerve fiber?

a. Shin

**b. Eye**

c. Back

d. Shoulder

e. Palm

138. A pregnant woman developed severe toxemia with exhausting recurrent vomiting throughout a day. By the end of the day she developed tetanic convulsions and dehydration. The described changes were caused by the following type of acid-base imbalance:

a. Nongaseous metabolic acidosis

b. Nongaseous excretory acidosis

c. Gaseous alkalosis

**d. Nongaseous excretory alkalosis**

e. Gaseous acidosis

139. In protein biosynthesis that occurs in a eukaryotic cell, one of the stages is the conversion of pro-mRNA into mRNA (As a result of this process, mRNA <>matures>>). Name this process.

**a. Processing**

b. Transduction

c. Transcription

d. Replication

e. Repair

140. A child presents with caries development and disturbed osteogenesis due to an insufficient intake of a certain microelement. Name this microelement:

- a. Iron
- b. Iodine
- c. Cobalt
- d. Fluorine**
- e. Potassium

141. A topical anesthetic was applied to the tongue apex of an experiment participant. The resulting gustatory loss will make this person unable to feel the following taste:

- a. Bitter
- b. Sour
- c. Salty
- d. Sweet**
- e. Sour and salty

142. During examination the doctor performs auscultation to assess the functioning of the patient's mitral valve. Where can the sound of this valve be auscultated?

- a. At the edge of the sternum in the 2nd intercostal space on the left
- b. At the apex of the heart**
- c. At the edge of the sternum in the 2nd intercostal space on the right
- d. At the edge of the sternum over the 5th costal cartilage on the left
- e. At the edge of the sternum over the 5th costal cartilage on the right

143. A patient suffers from meningitis. He is prescribed a subarachnoid space puncture. Where is this space located?

- a. Between periosteum and dura mater
- b. Between periosteum and arachnoid mater
- c. -
- d. Between arachnoid mater and pia mater**
- e. Between dura mater and arachnoid mater

144. A 67-year-old man suffers from cardiac and cerebral atherosclerosis. Examination detected hyperlipidemia. What class of blood plasma lipoproteins contributes the most to the pathogenesis of atherosclerosis?

- a. -
- b. High-density lipoproteins
- c. Chylomicrons
- d. Alpha-lipoproteins
- e. Low-density lipoproteins**

145. When providing dental care, the dentist received a trauma of the index finger. The skin was breached and the wound is likely to be contaminated with the patient's blood. In such cases regulations require for the patient to be examined for HIV-infection and viral hepatitis. What type of examination is necessary in this case?

- a. Identify specific antibodies
- b. Study the level of T helper cells
- c. Inoculate blood sample on sugar broth
- d. Determine the causative agent by infecting cell culture
- e. Study blood for hepatitis markers and anti-HIV antibodies**

146. A 45-year-old man had a cyst removed from the region of his gonial angle. The cyst was 1.5 cm in diameter and contained numerous keratinous masses. Histology shows that the cyst wall is thin and formed from mature connective tissue, cyst interior is lined with stratified squamous epithelium with marked parakeratosis and hyperkeratosis. Make the diagnosis:

- a. Follicular ameloblastoma
- b. Radicular cyst

c. Primordial cyst

d. Cherubism

e. Follicular cyst

147. An experiment was conducted to study major indicators of hemodynamics. What hemodynamics indicator would be the same for both systemic and pulmonary circulation?

a. Mean arterial pressure

b. Linear blood flow velocity

c. Volumetric blood flow rate

d. Vascular resistance

e. Dyastolic blood pressure

148. A patient being treated for viral B hepatitis developed signs of hepatic failure. What changes in the blood test that indicate a protein metabolism disorder will most likely be observed in this case?

a. Absolute hyperglobulinemia

b. Absolute hypoalbuminemia

c. Absolute hyperalbuminemia

d. Absolute hyperfibrinogenemia

e. Blood protein composition is unchanged

149. Dependence of blood pressure from vascular resistance was studied in an experiment on a test animal. In what vessel will the resistance be the highest?

a. Veins

b. Aorta

c. Capillaries

d. Arteries

e. Arterioles

150. During the neurologist's examination, a patient presents with a sensory loss on the back surface of the left hand. Name this phenomenon:

a. Alexia

b. Anesthesia

c. Asthenia

d. Atony

e. Ataxia

151. A 42-year-old man fell ill one week after he had been preparing a fox pelt. The disease manifested as nervous excitement, hydrophobia, and convulsions. Autopsy of the man's body detected encephalitis with damage to the brain stem, walls of the third ventricle, and hippocampus. Signs of encephalitis included accumulation of lymphocytes and microglial cells around dead neurons and blood vessels. Eosinophilic inclusions (Babesh-Negri bodies) were detected in the hippocampal neurons. What disease was diagnosed in the deceased man?

a. Rabies

b. Plague

c. Brucellosis

d. Tularemia

e. Anthrax

152. After inhalation of dust a person develops cough, which results from stimulation of:

a. Pulmonary chemoreceptors

b. Nociceptors

c. Juxtagapillary receptors

d. Pulmonary thermoreceptors

e. Irritant receptors

153. A patient with bronchopneumonia was prescribed acetylcysteine. What are the indications for this drug?

a. Convulsions

b. Productive bronchitis

- c. Asphyxia of newborn
- d. Bronchial asthma
- e. Heart failure

154. Increased aortic blood pressure created an overload of the cardiac muscle. In what cardiac structure does the muscle wall respond to the irritation in this case?

- a. Right ventricle
- b. Left ventricle
- c. Venous sinus
- d. Left atrium
- e. Right atrium

155. In the blood plasma of a healthy person there are several dozens of proteins. Illness leads to production of new proteins, in particular "acute-phase proteins". Name one such protein:

- a. Prothrombin
- b. C-reactive protein
- c. Immunoglobulin A
- d. Immunoglobulin G
- e. Fibrinogen

156. A woman with the height of 1.70 m and the body weight of 94 kg presents with decreased carbohydrate tolerance. What hormone is likely to be deficient in this case, causing this condition?

- a. Insulin
- b. Cortisol
- c. Adrenaline
- d. Somatotropin
- e. Glucagon

157. An 8-year-old child presents with frequent severe subcutaneous hemorrhages. Prescription of Vicasol, synthetic analogue of vitamin K, had a positive effect. This vitamin participates in gamma-carboxylation of glutamic acid in a certain blood-clotting protein. Name this protein:

- a. Fibrinogen
- b. Rosenthal factor
- c. Proconvertin
- d. Prothrombin
- e. Hageman factor

158. A patient presents with aspermia. What organ is functionally disturbed?

- a. Prostate
- b. Testicle
- c. -
- d. Seminal vesicles
- e. Epididymis

159. A patient with pulmonary tuberculosis is prescribed rifampicin that inhibits RNA-polymerase enzyme at the stage of initiation of the following process:

- a. Termination
- b. Transcription
- c. Elongation
- d. Replication
- e. Translation

160. A person has an upper jaw injury - one of the first premolars was knocked out. What maxillary process is damaged in this case?

- a. Palatine
- b. Zygomatic
- c. Orbital
- d. Alveolar
- e. Frontal

161. In an experiment the vagus is being stimulated, which results in increased acetylcholine entry to the synaptic cleft, and that in turn results in the decreased heart rate due to the following mechanism:

- a. Decrease of action potential duration
- b. Increase of action potential duration
- c. Depolarization of cardiomyocyte membrane
- d. Increase in AV nodal conduction velocity
- e. Hyperpolarization of cardiomyocyte membrane

162. A 5-year-old boy suffers from severe headache, nuchal rigidity, vomiting without nausea, herpetic rash on his face, and fever. Bacteriology of what pathological material must be performed to confirm the provisional diagnosis of cerebrospinal meningitis?

- a. Obtaining N. meningitidis bacteria from the mucosa of the genitourinary system
- b. Cerebrospinal fluid
- c. Vomitus analysis
- d. Stool culture of N. meningitidis
- e. Urine culture of N. meningitidis

163. X-ray scan shows a skull fracture. The line of the fracture passes through the supraorbital rim.

What bone is damaged?

- a. Maxilla
- b. Occipital bone
- c. Parietal bone
- d. Frontal bone
- e. Temporal bone

164. A shepherd tended to the sheep with the help of his dogs. Gradually he developed pain in his chest and started coughing blood. X-ray shows a spherical structure in his lungs. Immunology testing confirmed the provisional diagnosis. What helminth is the likely cause of this condition?

- a. Taenia solium
- b. Diphyllobothrium latum
- c. Echinococcus
- d. Hymenolepis nana
- e. Liver fluke

165. It is known that in metabolism of catecholamine mediators the special role belongs to monoamine oxidase (MAO). How does this enzyme activate these mediators (noradrenaline, adrenaline, dopamine)?

- a. Methyl group removal
- b. Hydrolysis
- c. Carboxylation
- d. Amino group attachment
- e. Oxidative deaminization

166. A patient with diabetes mellitus developed a pain in the right leg. The tissues of the big toe became black and edematous, desquamation of the epidermis is observed and a foul-smelling discharge is produced. Specify the pathological process:

- a. Infarction
- b. Dry gangrene
- c. Wet gangrene
- d. Coagulative necrosis
- e. Sequestrum

167. A 59-year-old man was diagnosed with chorea that manifests as involuntary rapid movements accompanied by grimaces. Chorea development is associated with damage to a certain brain structure. Name this brain structure.

- a. Thalamus
- b. Striatum
- c. N. fasciculi longitudinalis medialis (Darkshevitch nuclei)

- d. Claustrum
- e. Amygdala

168. Villikinin synthesis is impaired in a patient. What motor function of the small intestine will be disturbed in this case?

- a. Microvillar contractions
- b. Tonic contractions
- c. Pendulum contractions
- d. Rhythmic segmentation
- e. Peristaltic contractions

169. Detoxification of bilirubin occurs in the membranes of endoplasmic reticulum of hepatocytes.

Bilirubin is secreted by hepatocytes into bile for the most part as:

- a. Bilirubin diglucuronide
- b. Indirect reacting bilirubin
- c. Bilirubin monoglucuronide
- d. -
- e. Unconjugated bilirubin

170. During identification of pure culture of microorganisms the most important part is a serological identification that is conducted by means of agglutination reaction. What components are necessary to conduct this reaction?

- a. Thermoextract, specific serum
- b. Unknown antibodies, nonspecific antigen
- c. Unknown bacterial culture, specific antibodies
- d. Specific antigen, serum sample obtained from the patient
- e. Specific antigen, known antibody, bacteria

171. A 67-year-old man was delivered to a cardiology department with complaints of periodical pains in his heart, dyspnea caused by even slight exertion, cyanosis and edemas. ECG shows additional excitations of heart ventricles. Name this type of rhythm disturbance:

- a. Extrasystole
- b. Bradycardia
- c. Tachycardia
- d. Flutter
- e. Fibrillation

172. Trying to lose weight, a woman has limited the amount of products in her diet. Three months later she developed edema and increased urine output, which indicates that her diet is low on the following type of nutrients:

- a. Vitamins
- b. Proteins
- c. Lipids
- d. Minerals
- e. Carbohydrates

173. After acute blood loss, the patient with rhesus-negative blood was mistakenly transfused with rhesus-positive blood. What changes will occur in blood in this case?

- a. Aggregation of donor's erythrocytes
- b. Hemolysis of recipient's erythrocytes
- c. Platelet aggregation
- d. Erythrocytosis
- e. Hemolysis of donor's erythrocytes

174. Sodium thiopental was administered to a patient as a pre-anesthetic, after which the patient developed hypersalivation and laryngospasm. What drug could have prevented these effects, if it had been administered in this case?

- a. Adrenaline hydrochloride
- b. Analgin (Metamizole sodium)

- c. Piracetam
- d. Atropine sulfate
- e. Ditylin (Suxamethonium)

175. A small amount of specific antibodies was detected in the blood of an infectious patient, which indicates inhibited function of certain connective tissue cells. Name these cells.

- a. Lymphocytes
- b. Macrophages
- c. Labrocytes
- d. Neutrophilic granulocytes
- e. Plasma cells

176. After a cerebral hemorrhage, the patient developed a significant loss of gustatory sensitivity.

What cerebral structure is likely to be damaged in this case?

- a. Amygdala
- b. Hippocampus
- c. Postcentral gyrus
- d. Hypothalamus
- e. Substantia nigra

177. A 20-year-old young man was preventively given an anatoxin. It was an immunization against the following disease:

- a. Tuberculosis
- b. Scarlet fever
- c. Pertussis
- d. Diphtheria
- e. Meningitis

178. A 57-year-old man with chronic pyelonephritis developed arterial hypertension. What is the main mechanism of arterial pressure increase in this case?

- a. Stimulation of the cerebral cortex
- b. Stimulation of hypothalamic vegetative centers
- c. Increased renin secretion in the kidneys
- d. Increased blood levels of catecholamines
- e. Stimulation of sinocardiotid baroreceptors

179. A child has a trauma of the lower lip. What muscle is damaged in this case?

- a. M. levator labii superioris
- b. M. orbicularis oris
- c. M. risorius
- d. M. levator anguli oris
- e. M. buccinator

180. Chronic overdosage of glucocorticoids leads to the development of hyperglycemia. What process of carbohydrate metabolism is responsible for this effect?

- a. Glycogenesis
- b. Glycogenolysis
- c. Gluconeogenesis
- d. Aerobic glycolysis
- e. Pentose-phosphate cycle

181. A microslide of the cerebral cortex shows large pyramidal cells. What is the name of the scientist who discovered these cells?

- a. Nissl
- b. Betz
- c. Cajal
- d. Lenhossek
- e. Golgi

182. Bacteriological examination of a group of patients with dental caries detected various microorganisms. What microorganism plays the leading role in caries development in these patients?

- a. Streptococcus mutans
- b. St. salivarius
- c. Staphylococcus aureus
- d. Candida albicans
- e. Borellia buccalis

183. Autopsy of the body of a 43-year-old man, who died of cardiopulmonary failure, shows a cavity 3 cm in diameter, filled with viscous green-gray content, in the lower lobe of the right lung. Histology shows that the wall of this structure is made of connective tissue and immature granulation tissue, while the lumen contains neutrophilic leukocytes and products of their breakdown. What type of inflammation is it?

- a. Carbuncle
- b. Furuncle
- c. Empyema
- d. Chronic abscess
- e. Acute abscess

184. Biological material taken from a patient contains several species of microorganisms (staphylococci and streptococci) that are causative agents of the patient's disease. Name this type of infection:

- a. Reinfestation
- b. Coinfection
- c. Consecutive infection
- d. Superinfection
- e. Mixed infection

185. A patient was diagnosed with a genetic disorder leading to lipoprotein lipase deficiency. What finding will be characteristic of biochemical blood analysis in this case?

- a. Hypotriacylglycerolemia
- b. Hypoglycemia
- c. Hyperglycemia
- d. Hypochylomicronemia
- e. Hypertriacylglycerolemia

186. A sick child is suspected to have tuberculosis and is referred for Mantoux test. 24 hours later the place of allergen injection became swollen, hyperemic, and tender. What main components determine the development of this reaction?

- a. Granulocytes, T-lymphocytes, and IgG
- b. Macrophages, B lymphocytes, and monocytes
- c. Mononuclear cells, T-lymphocytes, and lymphokines
- d. B-lymphocytes and IgM
- e. Plasma cells, T-lymphocytes, and lymphokines

187. A patient was hospitalized on the fifth day after the onset of the disease that manifests as jaundice, muscle pain, chills, and nosebleeds. During laboratory diagnostics, dark-field microscopy of a drop of the patient's blood was performed. Name the causative agents of this disease.

- a. Rickettsia mooseri
- b. Leptospira interrogans
- c. Bartonella bacilliformis
- d. Borrelia duttonii
- e. Calymmatobacterium granulomatis

188. What hormone of parotid glands intensifies teeth mineralization by stimulating calcium supply to the calcified tissues?

- a. Parathyroid
- b. Cortisol

- c. Glucagon
- d. Parotin
- e. Calcitonin

189. Basement membrane consisting of three layers is an important component of renal filtration barrier. Its electron-dense middle layer has specialized reticular structure. This membrane is located in:

- a. Distal straight tubule
- b. Proximal tubule
- c. Capillaries of peritubular capillary network
- d. Thin tubule
- e. Renal corpuscle

190. During a visit to a dentist, the patient's oral mucosa is bright red. The patient has angular stomatitis and cheilosis. What vitamin deficiency is observed in this case?

- a. C
- b. B5
- c. B1
- d. B6
- e. B2

191. After spinal trauma the patient presents with absence of voluntary movements and tendon reflexes; sensitivity is retained only in the lower extremities. What is the mechanism of these disturbances and what part of the spine was injured?

- a. -
- b. Central paralysis, coccyx
- c. Spinal shock, cervical spine
- d. Spinal shock, thoracic spine
- e. Peripheral paralysis, cervical spine

192. After a brain trauma, a person developed impaired perception of visual information. What cortical region was damaged?

- a. Temporal region of the cerebral cortex
- b. Precentral gyrus
- c. Postcentral gyrus
- d. Occipital region of the cerebral cortex
- e. Parietal region of the cerebral cortex

193. The patient was prescribed Vicasol (Menadione) several days before the elective surgery for peptic ulcer disease of the stomach. What is the mechanism of action of this drug?

- a. Increases blood coagulability via intensified prothrombin synthesis
- b. Decreases vascular permeability
- c. Suppresses platelet aggregation
- d. Binds free calcium ions, removing calcium from coagulation reaction
- e. Suppresses fibrinolysis

194. A dental plaque swab was stained using the Burri-Gins technique. Microscopy of the swab revealed red cells of microorganisms against a dark brown background, with some of the bacteria surrounded by a light halo. What structure of the microorganisms was detected?

- a. Capsule
- b. Outer membrane
- c. Peptidoglycan layer
- d. Exoenzymes attached to the cell wall
- e. Protoplast

195. During a surgery on the right side of the neck, excursion of the right diaphragmatic dome was disturbed. This disturbance occurred because of the damage to the following nerve:

- a. Right transverse cervical nerve
- b. Left transverse cervical nerve

- c. Right phrenic nerve
- d. Left phrenic nerve
- e. Supraclavicular nerve

196. The dentist examines a pregnant woman. There are 3 round lesions up to 1 cm in diameter on her oral mucosa. The lesions appeared 3 days ago, they have white-gray surface and red margin. The dentist can make the following diagnosis:

- a. Leukoplakia
- b. Necrotizing ulcerative stomatitis
- c. Aphthous stomatitis
- d. Gangrenous stomatitis
- e. Catarrhal stomatitis

197. A woman complains of impaired gustatory sensitivity of her tongue. This disturbance can be caused by the damage to a certain nucleus of the medulla oblongata. Name this nucleus:

- a. Nucleus ambiguus
- b. Inferior salivatory nucleus
- c. Solitary nucleus
- d. Dorsal nucleus of vagus nerve
- e. Hypoglossal nucleus

198. A person with trauma bleeds from a head wound. Where should the carotid artery be pressed to temporarily stop the bleeding?

- a. To the spine in the upper portion of the neck
- b. To the anterior tubercle on the transverse process of the C4 vertebra
- c. To the anterior tubercle on the transverse process of the C7 vertebra
- d. To the anterior tubercle on the transverse process of the C5 vertebra
- e. To the anterior tubercle on the transverse process of the C6 vertebra

199. An 8-year-old girl against the background of a suspected viral infection developed body temperature of  $39^{\circ}\text{C}$ . What medicine should she be prescribed to lower her temperature?

- a. Diphenine (Phenytoin)
- b. Codeine
- c. Nicotinamide
- d. Pentazocine
- e. Paracetamol

200. The most common cause of incomplete lipid digestion in the digestive tract and an increase in the levels of neutral fats in the feces is a deficiency of a certain enzyme. Name this enzyme:

- a. Pancreatic lipase
- b. Enterokinase
- c. Phospholipase
- d. Gastric lipase
- e. Intestinal lipase