STATE NON-PROFIT ENTERPRISE
«TESTING BOARD FOR PROFESSIONAL COMPETENCE ASSESSMENT OF HIGHER EDUCATION TRAINEES IN MEDICINE AND PHARMACY AT THE MINISTRY OF HEALTH OF UKRAINE»

Student ID								
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Variant 70

TEST ITEMS
FOR THE UNIFIED STATE QUALIFICATION EXAM
TEST COMPONENT
STAGE 1

STOMATOLOGY

KROK 1

1. A person bitten by a stray dog has wide lacerated wounds localized on the face. What therapeutic and preventive aid must be provided to this person for prevention of rabies?

A. Urgently administer normal gamma globulin
B. Hospitalize the patient and monitor the patient's condition
C. Begin the immunization with antirabic vaccine
D. Prescribe a combined vitamin therapy
E. Urgently administer DPT vaccine

2. A patient had a tooth extracted. Its crown is chisel-shaped, wide, with narrow edge. The root is cone-shaped and flattened on the sides. What tooth was extracted?

A. Upper premolar
B. Lower canine
C. Upper incisor
D. Lower premolar
E. Lower incisor

3. A 50-year-old patient was diagnosed with myxedema. The development of this pathology is caused by disturbed production of certain hormones. Name these hormones.

A. ACTH and growth hormone
B. Thyroxine and triiodothyronine
C. Insulin and glucagon
D. Cortisol and aldosterone
E. Oxytocin and vasopressin

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

A. Lymphocytosis
B. Basophilic
C. Neutrophilic
D. Monocytosis
E. Eosinophilic

5. During the appendectomy, the patient's *a. appendicularis* was ligated. This vessel is a branch of the following artery:

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

6. A patient with chronic hyperacidic gastritis developed joint pain and was prescribed celecoxib. This drug has no effect on gastric mucosa because of its selective effect on a certain enzyme. What enzyme is it?

A. Phospholipase A2
B. Kallikrein
C. Phospholipase C
D. Cyclooxygenase 1
E. Cyclooxygenase 2

7. A 38-year-old patient complains of a constant joint pain. Laboratory studies detect increased levels of proline and oxyproline in the patient's urine, which indicates problems with the metabolism of the following compound:

A. Collagen
B. Elastin
C. Chondroitin sulfate
D. Heparin
E. Hyaluronic acid

8. Autopsy of the body of a 7-year-old child, who died of decompensated congenital heart defect, shows an increase in the mass and volume of the thymus. Microscopy reveals normal structure of the thymus. What pathological process is observed in the thymus in this case?

A. Accidental thymic involution
B. Thymic dysplasia
C. Thymic agenesis
D. Thymoma
E. Congenital thymomegaly

9. Ossification of the annular stapedial ligament occurred in a patient with hearing impairment. What is this type of connection called?

A. Syndesmosis
B. Hemiarthrosis
C. Synostosis
D. Gomphosis
E. Synchondrosis

10. 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. Staphylococci
B. Sarcinae
C. Corynebacteria
D. Escherichia
E. Streptococci

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

A. Cajal
B. Lenhossek
C. Golgi
D. Betz
E. Nissl

12. The physiological properties of human cardiac muscle include all of the listed below except:

A. Conductivity
B. Contractility
C. Elasticity
D. Excitability
E. Automaticity

13. Tyrosine is used as a substrate in thyroxine synthesis. What chemical element takes part in this process?

A. Iodine
B. Copper
C. Calcium
D. Zinc
E. Iron

14. During a surgery, a patient with acute appendicitis developed a cardiac arrest. What signs are characteristic of clinical death?

A. No respiration, thready pulse
B. Rapid respiration, weak heart sounds
C. No respiration, no cardiac activity
D. Kussmaul respiration, no cardiac activity
E. Apneustic respiration, no cardiac activity

15. An 8-year-old child came to a dentist with a herpetic rash on the lower lip. What medicine needs to be prescribed for the child?

A. Oxacillin
B. Ampicillin
C. Ketoconazole
D. Acyclovir
E. Furadonin (Nitrofurantoin)

16. Oxidative decarboxylation of pyruvic acid is catalyzed by a multienzyme complex with several functionally linked coenzymes. Name this complex.

A. Flavin adenine dinucleotide (FAD), tetrahydrofolic acid, pyridoxal-5-phosphate, thymidine diphosphate (TDP), choline
B. Lipoic acid, tetrahydrofolic acid, pyridoxal-5-phosphate, methylcobalamin
C. Thymidine diphosphate (TDP), flavin adenine dinucleotide (FAD), coenzyme A (CoASH), nicotinamide adenine dinucleotide (NAD), lipoic acid
D. Coenzyme A (CoASH), flavin adenine dinucleotide (FAD), pyridoxal-5-phosphate, tetrahydrofolic acid, carnitine
E. Nicotinamide adenine dinucleotide (NAD), pyridoxal-5-phosphate, thymidine diphosphate (TDP), methylcobalamin, biotin

17. A patient has aspermia. What organ is dysfunctional in this case?

A. Seminal vesicles
B. Testicle
C. Bulbourethral (Cowper's) glands
D. Epididymis
E. Prostate

18. To determine the functional state of the patient's liver, the analysis of animal indican excreted with urine was conducted. Indican is produced during detoxification of putrefaction products of a certain amino acid, which takes place in the large intestine. Name this amino acid.

A. Cysteine
B. Glycine
C. Serine
D. Valine
E. Tryptophan

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

A. Hemic hypoxia
B. Tissue hypoxia
C. Respiratory hypoxia
D. Circulatory hypoxia
E. Hypoxic hypoxia

20. Examination of the oral cavity shows that gingival mucosa of the upper jaw is reddish, has signs of edema, and slightly bleeds, with the damage localized primarily at the interdental areas. What diagnosis is likely in this case?

A. Catarrhal gingivitis
B. Ulcerative gingivitis
C. Local parodontitis
D. Parodontosis
E. Hypertrophic gingivitis

21. Bacterioscopy of a swab from the patient's urethra detected gonorrhea. Since fluoroquinolones are the drugs of choice for the treatment of gonorrhea, this patient must be prescribed:

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

22. Because cutaneous leishmaniasis in the urban areas can be characterized by a cyclic course, a physician suspects that the patient has been ill for approximately 3–6 months. What pathological anatomical changes allow making this conclusion, if they appear?

A. Tuberculoid form
B. Nosular stage
C. Scar stage
D. Primary leishmanioma
E. Ulcerative stage

23. During tooth development, dentin is the first tissue to be laid down. What is the source of its development?

A. Outer enamel epithelium
B. Dental follicle
C. Dental lamina
D. Dental papilla
E. Inner enamel epithelium

24. Prolonged exposure of a human body to toxic substances has resulted in destruction of the organelles that perform protein synthesis in the hepatocytes. Name these organelles.

A. Peroxisomes
B. Lysosomes
C. Mitochondria
D. Ribosomes
E. —

25. In COVID-19 patients, type II pneumocytes in the lungs are the target cells for coronavirus SarsCov-2. What function of the alveolar epithelium primarily becomes impaired as a result of viral damage to these cells?

A. Additional air purification in the alveoli
B. Surfactant synthesis
C. Mucus production
D. Gas exchange
E. Surfactant dissolution

26. A patient was diagnosed with a damaged intervertebral disk in the lumbar spine. What type of joint is it?

A. Synchondrosis
B. Symphisis
C. Diarthrosis
D. Synostosis
E. Syndesmosis

27. An electrician accidentally touched an exposed electrical wire with both hands and died. What process caused death in this case?

A. Decreased contractility of the myocardium
B. Atrial and ventricular fibrillation
C. Complete atrioventricular block
D. Impaired vagal heart rate control
E. Inhibition of the sinoatrial node automaticity

28. Oral cavity examination reveals gingival retraction with exposed roots and cervices of the lower incisors. X-ray shows foci of osteoporosis in the alveolar bone; smooth resorption of bone tissue is prevalent. Microscopy of gingival tissues shows sclerosis and hyalinosis of the microvasculature with luminal obliteration. The capillary network is reduced. Connective tissue has dystrophic changes. What pathological process was detected in the patient?

A. Parodontosis
B. Periodontitis
C. Periostitis
D. Parodontitis
E. Osteomyelitis

29. A patient presents with disturbed blood supply to the medial surface of the right cerebral hemisphere. What artery is damaged in this case?

A. *A. cerebri media*
B. *A. chorioidea*
C. *A. communicans posterior*
D. *A. cerebri posterior*
E. *A. cerebri anterior*

30. Indirect calorimetry shows that the basal metabolic rate of a person is 40% lower than the norm. What endocrine

gland does not function properly in this person, causing this condition?

A. Thymus
B. Pineal gland
C. Pancreas
D. Thyroid gland
E. Adrenal gland

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

A. Sternocleidomastoid
B. Masseter
C. Medial pterygoid
D. Temporal
E. Lateral pterygoid

32. A woman with a deep wound on her leg was brought into the trauma department. She received the injury three days ago. What drug must be used to prevent tetanus in this case?

A. Antitetanic serum
B. BCG vaccine
C. Antibiotics
D. Diphtheria and tetanus toxoids
E. DPT vaccine

33. Folding is a post-translational modification of a protein. What is the mechanism of pepsin folding in the chief cells of the gastric mucosa?

A. Methylation
B. Covalent modification
C. Acetylation
D. Partial proteolysis
E. Phosphorylation

34. A 30-year-old woman complains of intense thirst and dry mouth after a severe emotional shock. Laboratory testing shows elevated blood sugar levels of 10 mmol/L. What endocrine gland is affected in the patient, causing her condition?

A. Pineal gland
B. Gonads
C. Pancreas
D. Thyroid gland
E. Adrenal glands

35. After mushroom poisoning, a person developed yellow coloring of the skin and sclera and dark-colored urine. What pigment causes urine discoloration in patients with hemolytic jaundice?

A. Unconjugated bilirubin
B. Stercobilin
C. Verdoglobin
D. Bilirubin monoglucuronide
E. Biliverdin

36. In the periodontal tissues, electron microscopy detects fibers, one end of which is embedded into the cementum of the dental root, while the other is embedded into the periosteum of the alveolar process. Name these fibers.

A. Argyrophilic fibers
B. Sharpey fibers
C. Korff fibers
D. Purkinje fibers
E. Ebner fibers

37. A man complains of weight loss, rapid physical and mental fatigability, decreased appetite, arterial hypotension, and hyperpigmentation of the skin. Examination allowed diagnosing him with Addison's disease. What endocrine gland is hypofunctional in this case, causing this condition in the patient?

A. Parathyroid gland
B. Thyroid gland
C. Pituitary gland
D. Gonads
E. Adrenal glands

38. A doctor diagnosed a patient with meningococcal nasopharyngitis. What method of laboratory diagnostics would be a rational choice for confirmation of the diagnosis?

A. Bacteriology
B. Allergy testing
C. Biological method
D. Microscopy
E. Serology

39. After entering the body, bacteria undergo phagocytosis by macrophages. What role do macrophages play in the cooperation of immunocompetent cells at the first stage of immune response formation?

A. They process antigens and present them to T-helpers
B. They activate NK-cells
C. They process antigens and present them to T-killers
D. They produce immunoglobulins
E. They activate T-killers

40. Examination of a patient detects an anomaly of enamel development. What

structural components of the tooth bud were damaged, causing this condition?

A. Outer enamel epithelium
B. Stellate reticulum
C. Inner enamel epithelium
D. Cervical loop
E. Stratum intermedium

41. A patient with an angina pectoris attack was brought into the intensive care unit. What drug must be administered in this case to stop the angina pectoris attack?

A. Nitroglycerin
B. Furosemide
C. Vicasolum (Menadione)
D. Heparin
E. Calcium chloride

42. Examination of a patient detects calcinosis cutis, Raynaud's syndrome, esophageal motility disorder, sclerodactyly, and telangiectasia. These changes are called CREST syndrome. What disease can be characterized by the described changes?

A. Dermatomyositis
B. Systemic scleroderma
C. Systemic lupus erythematosus
D. Rheumatoid arthritis
E. Gouty arthritis

43. In an experiment, a dog was trained to develop a conditioned reflex in response to a flash of light. For this reflex to occur, a certain part of the cerebral cortex must be intact. What part of the cerebral cortex is it?

A. Postcentral gyrus
B. Temporal lobe
C. Frontal lobe
D. Occipital lobe
E. Precentral gyrus

44. In an experiment, ribosomes were destroyed in polychromatophilic erythroblasts of human red bone marrow. In this case, the synthesis of a certain specific protein will be disturbed. Name this protein.

A. Globin
B. Fibrinogen
C. Laminin
D. Elastin
E. Collagen

45. A 25-year-old patient undergoes dental procedures. Several minutes after the patient's oral cavity was lavaged with a furacilin (nitrofural) solution, the patient developed marked edema of the lips. What type of allergic reaction is observed in this case?

A. Cytolytic
B. Stimulating
C. Delayed-type hypersensitivity
D. Immune complex
E. Anaphylactic

46. What condition can develop as a result of infusing large volumes of isotonic solutions?

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

47. A patient is diagnosed with frontitis. He has a past history of maxillary sinusitis. What structure of the nasal cavity is the most likely pathway through which the infection was able to reach the frontal sinus?

A. Inferior nasal meatus
B. Ethmoid and sphenoid sinuses
C. Middle nasal meatus
D. Vestibule of the nose
E. Superior nasal meatus

48. 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 pneumoniae*
B. *Streptococcus pyogenes*
C. *Streptococcus salivarium*
D. *Streptococcus feacalis*
E. *Peptostreptococcus*

49. Enzyme cofactors include various derivatives of water-soluble vitamins. Which one of them is a component of aminotransferases?

A. B2
B. B6
C. B3
D. B1
E. PP

50. In an experiment, the common bile duct of a test animal was diverted

outwards. What digestive processes become disturbed as a result?

A. Hydrolysis and absorption of fats
B. Hydrolysis and absorption of fats, proteins, and carbohydrates
C. Water absorption
D. Hydrolysis and absorption of proteins
E. Hydrolysis and absorption of carbohydrates

51. Amniocentesis detected karyotype 45, X0 in fetal epithelial cells. The mother and father are healthy. What is the likely diagnosis in this case?

A. Turner syndrome
B. Cri-du-chat syndrome
C. Edwards syndrome
D. Trisomy X
E. Patau syndrome

52. A newborn failed to take his first breath. Autopsy revealed that despite unobstructed airways the lungs of the newborn were unable to stretch. What is the most likely cause of this condition?

A. Pleural thickening
B. Bronchial rupture
C. Alveolar enlargement
D. Bronchial narrowing
E. Absence of surfactant

53. 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. Replication
B. Translocation
C. Duplication
D. Inversion
E. Deletion

54. What structure in the cell becomes the main target, when exposed to ionizing radiation?

A. Sarcoplasmic reticulum
B. Cytoplasmic membrane
C. DNA
D. Mitochondria
E. Ribosomes

55. Premature excitation that occurrs in the ventricular myocardium:

A. Reduces the automaticity of the sinoatrial node
B. Increases the automaticity of the sinoatrial node
C. Increases the speed of excitation conduction through working cardiomyocytes
D. Reduces the speed of excitation conduction through working cardiomyocytes
E. Has no effect on the automaticity of the sinoatrial node

56. The sequence of DNA triplets determines the arrangement of amino acids in a protein molecule. This characteristic of the genetic code is called:

A. Colinearity
B. Redundancy
C. Triplet code
D. Non-overlapping
E. Universality

57. 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°C and discharge of purulent mucus from the right nasal passage. What mistake was likely made by the doctor in this case?

A. Fracture of the interalveolar septum
B. Perforation of the infraorbital canal
C. Perforation of the sphenoid sinus
D. Perforation of the right wall of the nasal cavity
E. Perforation of the right maxillary sinus

58. What receptors respond to changes in gas composition of the blood that enters the brain?

A. All of the listed
B. Carotid sinus receptors
C. —
D. Aortic receptors
E. Bulbar receptors

59. A patient was diagnosed with ishemic heart disease and prescribed a calcium channel blocker agent. What drug is it?

A. Thiotriazoline
B. Eldepryl (Selegiline)
C. Amlodipine
D. Carvedilol
E. Nitroglycerin

60. A student uses percussion to determine the cardiac border that projects on the anterior thoracic

wall at the level of the third costal cartilage. What cardiac border is being determined?

A. Lower
B. Apex
C. Left
D. Upper
E. Right

61. Several hours after a dental trauma, the tooth pulp has hyperemic vessels and marked tissue edema with isolated neutrophils and lymphocytes, while nerve fibers have minor dystrophic changes. What diagnosis is likely in this case?

A. Purulent pulpitis
B. Serous pulpitis
C. Fibrous pulpitis
D. Gangrenous pulpitis
E. Granulating pulpitis

62. A 61-year-old patient died in the intensive care unit due to multiple organ dysfunction syndrome. Previously, the patient underwent a surgery for acute purulent periostitis. Histology of necropsy materials revealed hyperplasia of the lymphoid tissue of the tonsils, diffuse neutrophilic infiltration of the necrotically changed alveolar process of the jaw, regional purulent lymphadenitis, soft tissue phlegmon of the neck, bilateral polysegmental purulent pneumonia, splenomegaly, irreversible changes in cardiomyocytes and epithelium of the renal tubules. Postmortem bacteriology detected *Staphylococcus aureus* in the blood. What disease is the cause of these pathological manifestations?

A. Tonsilogenic sepsis
B. Cryptogenic sepsis
C. Surgical sepsis
D. Treatment-induced sepsis
E. Odontogenic sepsis

63. A 40-year-old patient with a poisoning caused by the chlorophos (metrifonate) insecticide was hospitalized into the toxicology department. What drug that blocks peripheral muscarinic acetylcholine receptors would be most effective in treatment of such poisoning?

A. Atropine sulfate
B. Amizylum (Benactyzine)
C. Benzohexonium (Hexamethonium)
D. Platyphylline
E. Scopolamine

64. A person with signs of anxiety, fear, uncertainty, and mental strain was prescribed diazepam. What mechanism of its tranquilizing action can be observed in this case?

A. Interaction with dopamine receptors
B. Interaction with acetylcholine receptors
C. Interaction with adrenergic receptors
D. Interaction with serotonin receptors
E. Interaction with benzodiazepine receptors

65. A patient diagnosed with chronic renal failure developed anorexia, dyspepsia, heart rhythm disturbances, and skin itching. What is the main mechanism of development of these disorders?

A. Changes in carbohydrate metabolism
B. Water-electrolyte imbalance
C. Lipid metabolism disorders
D. Accumulation of nitrogen metabolism products in the blood
E. Renal acidosis

66. The course of complete starvation consists of three stages. What is characteristic of the third (terminal) stage of starvation?

A. Activation of lipolysis in adipose tissue
B. Increased formation of ketone bodies in the liver
C. Development of non-gaseous acidosis
D. Intensified protein catabolism in muscles and gluconeogenesis in the liver
E. Increased breakdown of proteins in vital organs

67. A patient diagnosed with oral candidiasis was prescribed an antifungal drug. What drug was prescribed for this patient?

A. Biseptol (Co-trimoxazole)
B. Ampicillin
C. Fluconazole
D. Erythromycin
E. Levomycetin (Chloramphenicol)

68. In some hereditary diseases (e.g., Kearns-Sayre syndrome), mitochondrial destruction can be observed. What cellular processes can be disturbed as a result of it?

A. Lipid synthesis
B. Protein synthesis
C. Nuclear division
D. Crossingover
E. ATP synthesis

69. A histological specimen of decalcified lower jaw shows bundles of thick collagen fibers around the root of a tooth. Between these fibers, loose fibrous connective tissue with blood vessels can be identified. What structure is it?

A. Dental alveolus
B. Gums
C. Cellular cementum
D. Periodontium
E. Dentin

70. 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. Asparagine formation
B. Creatine formation
C. Urea formation
D. Glutamine formation
E. NH_4^+ formation

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

A. *Rr. alveolares superiores posteriores*
B. *Rr. alveolares superiores anteriores*
C. *Rr. alveolares inferiores posteriores*
D. *Rr. alveolares inferiores anteriores*
E. *Rr. alveolares superiores medii*

72. A patient diagnosed with gout has a significant increase in the levels of uric acid in the blood. Uric acid is the end product of the metabolism of:

A. Triglycerides
B. Albumins
C. Purine bases
D. Globulins
E. Fatty acids

73. Gene expression is regulated by various mechanisms and activates upon induction of certain DNA regions. Name these regions.

A. Enhancer
B. Attenuator
C. Spacer
D. Terminator
E. Silencer

74. A 67-year-old man was brought into the cardiology department with complaints of periodical pain in his heart, shortness of breath caused by even slight physical exertion, cyanosis, and edemas. ECG detects premature excitations of heart ventricles. What type of rhythm disturbance is it?

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

75. A 2-month-old child has been diagnosed with cri-du-chat syndrome. This disease is caused by deletion of the short arm of autosome 5. What is the total number of chromosomes in this child?

A. 44
B. 45
C. 47
D. 46
E. 23

76. Autopsy of a 72-year-old man with recurrent transmural myocardial infarction revealed his epicardial and pericardial membranes to be swollen, thickened, coarse, as if covered in hair. What type of inflammation occurred in the cardiac membranes in this case?

A. Catarrhal
B. Purulent
C. Croupous
D. Diphtheritic
E. Serous

77. In an experiment, a rabbit received guinea pig nephrotoxic serum. What renal disease was modeled in this experiment?

A. Acute diffuse glomerulonephritis
B. Nephrotic syndrome
C. Chronic pyelonephritis
D. Acute pyelonephritis
E. Chronic renal failure

78. During a neck surgery, the patient's sternothyroid muscle was damaged by the surgeon. What function will be impaired because of the damage to this muscle?

A. Lowering of the larynx
B. Neck extension
C. Raising of the larynx
D. Raising of the hyoid bone
E. Bending the neck forwards

79. Impaired coordination of movements and disturbed muscle tone are signs of alcohol intoxication. These changes are associated with damage to certain cells in the cerebellum. Name these cells.

A. Golgi cells of the granular layer
B. Basket cells of the granular layer
C. Stellate cells of the molecular layer
D. Purkinje cells of the molecular layer
E. Pear-shaped neurons of the Purkinje layer

80. A diabetus mellitus patient fell unconscious and developed convulsions after administration of insulin. What glucose levels would be detected by blood biochemistry in this case?

A. 5.5 mmol/L
B. 8 mmol/L
C. 10 mmol/L
D. 3.3 mmol/L
E. 1.5 mmol/L

81. Cancer cells form in the human body due to the effect of environmental factors. What cells provide antitumor protection?

A. Epitheliocytes
B. Erythrocytes
C. Lymphocytes
D. Platelets
E. Neurocytes

82. A patient has been suffering from pneumonia for a week. Microscopy of a sputum sample detects helminth larvae. Eosinophilia is observed in the patient's blood. What diagnosis can be suspected in this case?

A. Paragonimiasis
B. Taeniasis
C. Ascariasis
D. Echinococcosis
E. Fasciolasis

83. A patient has high body temperature, increased basal metabolic rate, and tachycardia at rest, which can be caused by hyperfunction of the:

A. Gonads
B. Thyroid gland
C. Pancreas
D. Neurohypophysis
E. Adrenal cortex

84. A patient diagnosed with systemic lupus erythematosus has kidney damage with nephrotic syndrome. What is the cause of this condition?

A. Glomerulosclerosis
B. Autoimmune damage to nephron glomeruli
C. Mechanical damage to the urinary tract
D. Hyperproteinemia
E. Ischemic kidney damage

85. Autopsy of the body of a deceased 64-year-old woman diagnosed with tuberculosis shows a dense and enlarged spleen with multiple small gray-white foci. Microscopy detects caseous necrosis in the center of the foci, surrounded by epithelioid cells, multinucleated giant cells, lymphocytes, etc. What spleen disorder did this woman develop?

A. Miliary tuberculosis of the spleen
B. Sago spleen
C. Porphyry spleen
D. Septic spleen
E. Lardaceous spleen

86. Examination of a hematopoietic organ reveals lobules formed by a lymphoid tissue with stroma that consists of epithelioreticular cells. What organ is being studied?

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

87. A specimen shows a tissue with cells that are located separately and in isogroups. No fibrous structures can be detected within its intercellular substance. What tissue is demonstrated in this specimen?

A. Epithelial tissue
B. Hyaline cartilaginous tissue
C. Bone tissue
D. Smooth muscular tissue
E. Fibrous cartilaginous tissue

88. For the treatment of gingivitis, a dentist prescribed the patient a drug with an antiprotozoal and antibacterial effect, which can cause an aversion to alcohol. What drug did the doctor prescribe?

A. Ceftriaxone
B. Metronidazole
C. Tetracycline
D. Lincomycin hydrochloride
E. Levomycetin (Chloramphenicol)

89. 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 A
C. Viral hepatitis E
D. Viral hepatitis B
E. Viral hepatitis D

90. After a family quarrel, a 70-year-old man was hospitalized with the diagnosis of ischemic heart disease, preinfarction state. What substance can cause a coronary angiospasm in the patient?

A. Nitrous oxide
B. Potassium ions
C. Adenosine
D. Thromboxane A2
E. Prostacyclin

91. 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. Second premolar and first molar
B. Upper first and second molars
C. Upper canine and first premolar
D. Upper lateral and central incisors
E. Upper central incisor

92. 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. D_3
B. D_2
C. $24,25(OH)_2D_3$
D. $25(OH)D_3$
E. $1,25(OH)_2D_3$

93. A woman has edemas and high levels of urine protein. What nephron segment is dysfunctional in this case, as indicated by these signs?

A. Distal convoluted tubule
B. Renal corpuscle
C. Ascending limb of the loop of Henle
D. Proximal convoluted tubule
E. Descending limb of the loop of Henle

94. A 20-year-old pregnant woman has a round reddish formation with ulceration on its surface on the vestibular surface of the gums in her incisor region. Microscopy detects in this formation a similarity to a capillary hemangioma. What diagnosis is likely in this case?

A. Fibrous epulis
B. Giant cell epulis
C. Papilloma
D. Fibroma
E. Angiomatous epulis

95. In the body of a female *Anopheles* mosquito, the malaria *Plasmodium* reproduces via copulation (a type of sexual process). What type of host is this insect for malaria *Plasmodium*?

A. Reservoir
B. Optional
C. Additional
D. Definitive
E. Intermediate

96. Reading of the hereditary information encoded within a gene begins with pre-mRNA synthesis on a fragment of DNA matrix chain. Where does this process occur in the eukaryotic cells?

A. Cytoplasm
B. Centrosomes
C. Nucleus
D. Golgi complex
E. Ribosomes

97. An organ of the cardiovascular system is composed of cells that connect to each other with intercalated discs. What organ is it?

A. Mixed type artery
B. Muscular artery
C. Heart
D. Muscular vein
E. Aorta

98. In an adult person, mitosis is not observed in certain cells throughout life and the quantity of DNA in them remains constant. What are these cells called?

A. Epidermal cells
B. Endothelial cells
C. Smooth muscle cell
D. Neurons
E. Hematopoietic cells

99. 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. Atropine sulfate
D. Ditylin (Suxamethonium)
E. Piracetam

100. A patient has diabetes mellitus with fasting hyperglycemia of over 7.2 mmol/L. What blood plasma protein would allow to assess the patient's glycemia levels retrospectively (4–8 weeks prior to the examination)?

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

101. 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. Chronic aneurysm
B. Myocardial infarction
C. Cardiosclerosis
D. Cardiomyopathy
E. Myocarditis

102. 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. B2
B. B6
C. B5
D. B1
E. C

103. A woman diagnosed with dysentery was hospitalized into the infectious diseases unit. Laboratory testing determined that the causative agents in this case are *Entamoeba histolytica*. What drug should she be prescribed?

A. Rifampicin
B. Benzylpenicillin sodium salt
C. Metronidazole
D. Isoniazid
E. Chingamin (Chloroquine)

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

A. Blocks calcium channels
B. Blocks potassium channels
C. Stimulates imidazoline receptors
D. Binds angiotensin-converting enzyme and blocks the conversion of angiotensin I into angiotensin II
E. Blocks angiotensin receptors in blood vessels

105. What property is not characteristic of low molecular weight heparins, such as enoxaparin, fraxiparine (nadroparin calcium), etc.?

A. No inhibitory effect on thrombin
B. An increase in the inhibitory effect of antithrombin III on factor Xa
C. Injected subcutaneously 1–2 times a day
D. Antiplatelet and anticoagulant activity
E. Bioavailability is higher than that of heparin

106. In diabetes mellitus, the levels of ketone bodies in the blood increase, causing metabolic acidosis. From what substance are ketone bodies synthesized?

A. Propionyl-CoA
B. Malonyl-CoA
C. Acetyl-CoA
D. Methylmalonyl-CoA
E. Succinyl-CoA

107. A 3-year-old girl was diagnosed with rubella. Her 10-year-old sister was not infected, despite both girls constantly remaining in contact. The pediatrician determined that the elder girl had rubella 5 years ago. What type of immunity does the elder sister have?

A. Innate
B. Natural passive
C. Artificial active
D. Natural active
E. Artificial passive

108. In an experiment, a test animal had a part of its brain destroyed, which caused the animal to change from a homeothermic to a poikilothermic state. What part of the brain was destroyed in this case?

A. Medulla oblongata
B. Mesencephalon
C. Pineal gland
D. Pituitary
E. Hypothalamus

109. In an experiment, the processes of food and water hydrolysis products absorption were studied. It was determined that these processes mainly occur in the following gastrointestinal segment:

A. Oral cavity
B. Rectum
C. Large intestine
D. Stomach
E. Small intestine

110. 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. Chronic pulpitis
B. Caries
C. Ulcerative gangrenous stomatitis
D. Vesicular stomatitis
E. Parodontosis

111. A patient has high levels of vasopressin (antidiuretic hormone) in the blood. What changes in the patient's diuresis will occur in this case?

A. Anuria
B. Oliguria
C. Glycosuria
D. Natriuria
E. Polyuria

112. A patient with diabetes mellitus developed acidosis because of ketone bodies accumulation in the blood. What changes can be observed in the respiratory system in this case?

A. Cheyne-Stokes respiration is observed
B. Breath holding occurs
C. Bronchial spasms occur periodically
D. Pulmonary ventilation decreases
E. Pulmonary ventilation increases

113. 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. Vitamin elimination speeds up
B. Vitamin absorption slows down
C. A strong connection forms between vitamin and blood plasma proteins
D. Vitamin biotransformation speeds up
E. Isoniazid is a vitamin *B6* antagonist

114. A 42-year-old man with an incised wound on the lower anterior surface of his shoulder came to a hospital. Objectively, he presents with impaired forearm flexion. What muscles are likely to be damaged in this patient?

A. *M. coracobrachialis, m. supraspinatus*
B. *M. brachialis, m. biceps brachii*
C. *M. biceps brachii, m. anconeus*
D. *M. deltoideus, m. biceps brachii*
E. *M. deltoideus, m. infraspinatus*

115. Patients with ischemic heart disease are prescribed small doses of aspirin that inhibits the synthesis of platelet aggregation activator thromboxane A2. What substance is thromboxane A2 made of?

A. Glutamic acid
B. Acetic acid
C. Homogentisic acid
D. Arachidonic acid
E. Malonic acid

116. A certain antibiotic has low toxicity, relatively rarely causes side effects, and is a reserve antibiotic from the group of macrolides. Its mechanism of action consists of protein synthesis inhibition in bacterial ribosomes by inhibiting the peptide translocase enzyme. What antibiotic is it?

A. Sisomicin
B. Tetracycline
C. Azithromycin
D. Levomycetin (Chloramphenicol)
E. Ampicillin

117. A 5-year-old child was diagnosed with Duchenne muscular dystrophy. The parents are healthy. The child's maternal uncle and the son of the child's maternal aunt have myopathy too. What is the type of inheritance of this disease?

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

118. A patient came to a family doctor

with complaints of weakness, weight loss, and enlarged cervical lymph nodes. Microscopy of the biopsy material obtained from a lymph node shows giant multinucleated Reed-Sternberg cells, lymphocytes, plasma cells, histiocytes, eosinophils, and areas of necrosis and sclerosis. What disease can be characterized by the described changes?

A. Lymphogranulomatosis (Hodgkin lymphoma)
B. Lymphosarcoma
C. Sarcoidosis
D. Tuberculosis
E. Lymphocytic leukemia

119. 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. Striatum
B. Amygdala
C. *N. fasciculi longitudinalis medialis* (Darkshewitch nuclei)
D. Thalamus
E. Claustrum

120. Histology of an extracted tooth detects a lower number and reduced size of odontoblasts and pulpocytes with sclerosis of the connective tissue base of the pulp. What diagnosis is likely in this case?

A. Pulp hyalinosis
B. Acute pulpitis
C. Pulp necrosis
D. Pulp dystrophy
E. Pulp atrophy

121. During vascular-platelet hemostasis, platelet factor (PF-8) thrombostenin is released from destroyed platelets. What is its function?

A. Erythrocyte agglutination
B. Thrombus retraction
C. Erythrocyte hemolysis
D. Platelet adhesion
E. Platelet aggregation

122. While waiting for tooth extraction, a patient developed a bronchial asthma attack. To stop the bronchospasm, the patient needs to be prescribed a drug that belongs to the following pharmacological group:

A. Psychostimulants
B. Muscarinic agonists
C. Analeptics
D. Analgesics
E. β_2-adrenergic agonists

123. During examination of the oral cavity, a dentist detected a carious cavity in the lower second premolar. The cavity is located on the crown surface that faces the first premolar. What surface of the dental crown is affected in this case?

A. *Facies mesialis*
B. *Facies lingualis*
C. *Facies vestibularis*
D. *Facies distalis*
E. *Facies occlusalis*

124. A patient was diagnosed with a malignant tumor of the pineal gland. The tumor penetrates into one of the subarachnoid cisterns in the brain. To remove the tumor, a surgery must be performed in the area of the following cistern:

A. *Cisterna quadrigeminalis*
B. *Cisterna ambiens*
C. *Cisterna interpeduncularis*
D. *Cisterna chiasmatis*
E. *Cisterna pericallosa*

125. Glutamate decarboxylation produces an inhibitory neurotransmitter in the central nervous system. What neurotransmitter is it?

A. Asparagine
B. Serotonin
C. Histamine
D. GABA
E. Glutathione

126. A 55-year-old man was diagnosed with purulent otitis complicated with meningitis. The posterior cranial fossa was contaminated by pus. What wall of the tympanic cavity was destroyed in this case?

A. *Paries membranaceus*
B. *Paries mastoideus*
C. *Paries labyrinthicus*
D. *Paries jugularis*
E. *Paries tegmentalis*

127. A man came to a doctor with complaints of general weakness and sleep disturbances. Objectively, the patient's skin is yellow. Increased levels of direct bilirubin and bile acids are observed in the blood. Patient's stool is acholic. What

condition can be characterized by these changes?

A. Hemolytic jaundice
B. Gilbert's syndrome
C. Chronic cholecystitis
D. Mechanical jaundice
E. Parenchymatous jaundice

128. A woman was diagnosed with purulent stomatitis. What complete blood count finding is characteristic of this disease?

A. Leukocytosis
B. Lymphocytosis
C. Thrombocytosis
D. Monocytosis
E. Anemia

129. Membrane-acting protein/peptide hormones regulate metabolism in the cells, using intracellular mediators (messengers) for this purpose. ACTH causes intracellular effects by forming:

A. Cyclic adenosine monophosphate
B. Inositol trisphosphate
C. Calcium/calmodulin
D. Cyclic guanosine monophosphate
E. —

130. A patient undergoes a surgery for a knee joint injury. The surgical incision reveals formations that improve the congruence of articular surfaces. What are these formations called?

A. Menisci
B. Discs
C. Ligaments
D. Folds
E. Labia

131. 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. Nicotinamide
B. Amiodarone
C. Verapamil
D. Metoprolol
E. Asparcam

132. Complex therapy of a patient with bronchopneumonia accompanied by exhausting dry cough includes a certain mucolytic agent that depolymerizes mucoproteins. What drug is it?

A. Atenolol
B. Acetylcysteine
C. Neodicoumarin
D. Codeine
E. Strophanthin

133. In an experiment, a myotome was destroyed in a rabbit fetus. This manipulation will result in malformation of the following structure:

A. Serous membranes
B. Dermal connective tissue
C. Axial skeleton
D. Skeletal muscles
E. Smooth muscles

134. During examination, a doctor performed 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 second intercostal space on the left
B. At the apex of the heart
C. At the edge of the sternum, in the second intercostal space on the right
D. At the edge of the sternum on the left, over the fifth costal cartilage
E. At the edge of the sternum on the right, over the fifth costal cartilage

135. In an experiment, a test animal lost its orienting reflexes after certain structures of its central nervous system had been destroyed. At what level did the damage occur?

A. Cerebellum
B. Lateral vestibular nuclei
C. Red nuclei
D. Diencephalon
E. Corpora quadrigemina

136. In an experiment, an excitable cell was exposed to tetraethylammonium that blocks potassium-selective ion channels. What effect will it have on the membrane potential of the cell?

A. Action potential will not occur
B. Hyperpolarization will develop
C. Resting potential will remain unchanged
D. Resting potential will increase
E. Resting potential will disappear

137. A 35-year-old man came to a hospital with complaints of pain in the right lower jaw, fever, chills, and a swelling. Examination detects detachment of the periosteum with accumulation of

condition can be characterized by these changes?

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137. A 35-year-old man came to a hospital with complaints of pain in the right lower jaw, fever, chills, and a swelling. Examination detects detachment of the periosteum with accumulation of

inflammatory exudate between the periosteum and the bone, perifocal edema of soft tissues, and partial liquefaction of the periosteum. What diagnosis can be suspected in this case?

A. Granulating periodontitis
B. Parodontosis
C. Purulent periostitis
D. Local parodontitis
E. —

138. A man came to a doctor with complaints of excessive thirst (polydipsia) and frequent urination with a large amount of urine (polyuria). The patient's history states that 4 weeks ago he was diagnosed with necrosis of the posterior lobe of the pituitary gland caused by a craniocerebral injury. What pathology is observed in the patient?

A. Cushing disease
B. Diabetes mellitus
C. Diabetes insipidus
D. Cushing syndrome
E. Acromegaly

139. In a 6-year-old child, a dentist detected gray-white spots up to one millimeter in diameter on the buccal mucosa at the level of the premolars. The child was not vaccinated at the age of one year. The doctor suspects that the mucosal lesion was caused by a complex RNA virus with hemagglutinating properties. This virus has no neuraminidase activity and cannot not cultivated in chicken embryos. What pathogen caused the development of this disease?

A. Coxsackievirus A
B. Varicella-zoster virus
C. Herpes simplex virus
D. Measles virus
E. Mumps virus

140. The presence of an allosteric center is a structural feature of regulatory enzymes. What is its role?

A. Binds the coenzyme
B. Changes the structure of the substrate
C. Promotes the coenzyme dissociation
D. Binds the substrate
E. Binds the regulatory effector

141. A patient diagnosed with bronchial asthma developed acute respiratory insufficiency. What type of respiratory insufficiency develops in such cases?

A. Restrictive disturbances of alveolar ventilation
B. Dysregulatory disturbances of alveolar ventilation
C. Diffusion insufficiency
D. Obstructive disturbances of alveolar ventilation
E. Perfusion insufficiency

142. In a patient with chronic hepatitis, tooth extraction was complicated by prolonged bleeding. What is the cause of the hemorrhagic syndrome in this case?

A. Decreased fibrin formation
B. Increased thromboplastin formation
C. Intensified fibrinolysis
D. Increased fibrinogen synthesis
E. Decreased thrombin formation

143. 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. Anthrax
B. Tularemia
C. Brucellosis
D. Rabies
E. Plague

144. Auscultation reveals that in the patient's II intercostal space along the parasternal line on the right the II heart sound can be better heard than the I heart sound. What valve produces the II heart sound when closing?

A. Bicuspid and tricuspid valves
B. Left bicuspid valve
C. Aortic semilunar valve
D. Right tricuspid valve
E. Pulmonic semilunar valve

145. After extraction of a tooth on the lower jaw, a 30-year-old woman developed an increase in temperature and later a swelling in her neck region. A dissection of the skin of her neck revealed that the subcutaneous fatty tissue was soaked through with a foul-

smelling opaque yellow-green liquid. What process developed in the fatty tissue in this case?

A. Fibrinous inflammation
B. Abscess
C. Serous inflammation
D. Hemorrhagic inflammation
E. Phlegmon

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

A. Blocks voltage-gated potassium channels
B. Blocks voltage-gated sodium channels
C. Blocks voltage-gated calcium channels
D. Activates voltage-gated potassium channels
E. Blocks ligand-gated sodium channels

147. A patient who had his lower second molar extracted presents with bleeding from the tooth socket. What vessel is the source of the bleeding in this case?

A. Maxillary artery
B. Lingual artery
C. Facial artery
D. Ophthalmic artery
E. Ascending pharyngeal artery

148. 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. alveolaris superior medius*
B. *N. infraorbitalis*
C. *N. petrosus major*
D. *N. mandibularis*
E. *N. incisivus*

149. A patient developed a tender red nodule in the lower jaw region. Histology detects accumulation of purulent exudate in several hair follicles. What clinical and morphological type of inflammation is observed in this case?

A. Hypostatic abscess
B. Carbuncle
C. Phlegmon
D. Furuncle
E. Abscess

150. What parasite has a mollusk as an intermediate host?

A. Echinococcus
B. Trichinella
C. *Fasciola hepatica*
D. *Diphyllobothrium latum*
E. Giardia