



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

Student ID									

Surname									

Variant 89

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

STOMATOLOGY

KROK 1

1. It is dangerous to eat plants and mushrooms harvested along the motorways due to high risk of lead poisoning. What is the main source of lead contamination in the environment?

- A. Herbicides
- B. Exhaust gases
- C. Acid rains
- D. Sewage
- E. Chemical fertilizers

2. Histological microslide shows a section of a vessel that can be characterized by regular round shape. The vessel is gaping; its wall consists of 3 layers. The middle layer is fenestrated with 30–40 elastic membranes. What vessel is exhibited in the microslide?

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

3. A 65-year-old man came to the general physician. He complains of dyspnea during even slight physical exertion, cyanotic skin, and leg edemas. Prescribe him a cardiac glycoside for treatment of chronic heart failure:

- A. Methyluracil
- B. Panangin (potassium aspartate and magnesium aspartate)
- C. Metoprolol
- D. Digoxin
- E. Heparin

4. In Western Europe nearly half of all congenital malformations occur in the children conceived in the period, when pesticides were used extensively in the region. These congenital conditions result from the following influence:

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

5. X-ray scan shows a skull fracture. The line of the fracture passes through the supraorbital rim. What bone is damaged?

- A. Frontal bone
- B. Parietal bone
- C. Maxilla
- D. Temporal bone
- E. Occipital bone

6. Light microscopy was used to study the morphology of human Y chromosome. Centromere is located close to one of the ends of the chromosome. Name the type of the chromosome:

- A. Polytene
- B. Telocentric
- C. Acrocentric
- D. Metacentric
- E. Submetacentric

7. Blood sample was obtained for analysis. 30% of erythrocytes in the sample are abnormally shaped. Name this phenomenon:

- A. Physiological poikilocytosis
- B. Pathological poikilocytosis
- C. Anisocytosis
- D. Microcytosis
- E. Macrocytosis

8. Microslide of a CNS organ impregnated with silver shows piriform cells. The cells are aligned in a row, 3–4 cellular processes branch off from the apices of the cells. These processes branch out further and form nearly two-dimensional layers. Name these cells:

- A. Betz cells
- B. Martinotti cells
- C. Purkinje cells
- D. Golgi cells
- E. Dogiel cells

9. A man, who for a long time has been suffering from chronic mandibular osteomyelitis, died of renal failure. Autopsy shows enlarged yellow-white kidneys that are extremely dense and have a waxy sheen. Light microscopy detected deposits of homogeneous pink masses in the glomerular capillary loops, walls of arterioles and arteries, canalicular basement membrane, and stroma. These deposits color brick-red when stained with Congo red. What process developed in the kidneys?

- A. Fibrinoid necrosis
- B. Primary amyloidosis
- C. General hyalinosis
- D. Local hyalinosis
- E. Secondary amyloidosis

10. Bacteria that enter the body are being phagocytized by macrophages. What is the role of macrophages in cooperation of immunocompetent cells during the first phase of immune response?

- A. Ensure antigen processing and presentation to T helper cells
- B. Activate T killer cells
- C. Activate NK cells
- D. Ensure antigen processing and presentation to T killer cells
- E. Produce immunoglobulins

11. 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. Hypoglossal nucleus
- B. Nucleus ambiguus
- C. Inferior salivatory nucleus
- D. Dorsal nucleus of vagus nerve
- E. Solitary nucleus

12. 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. Insulin
- B. Vasopressin
- C. Adrenaline
- D. Mineralocorticoids
- E. ACTH

13. Secretory units of salivary glands are surrounded with specific contractile cells. Name these cells:

- A. Adipocytes
- B. Ciliated cells
- C. Endotheliocytes
- D. Myoepithelial cells
- E. Pericytes

14. To prevent an increase in hepatitis B morbidity in the city hospitals, it is necessary to vaccinate the medical personnel. What should be used for immunization in this case?

- A. Recombinant vaccine
- B. Inactivated vaccine
- C. Live attenuated vaccine
- D. Arbidol (Umifenovir)
- E. Interferon

15. In an experiment, the vagus nerve was severed in a test animal. As the result, the animal developed elevated blood glucose due to:

- A. Increased secretion of insulin
- B. Increased secretion of glucagon
- C. Decreased secretion of glucagon
- D. Decreased secretion of insulin
- E. Increased secretion of somatostatin

16. Laboratory analysis confirmed the patient's diagnosis of gout. What analysis was conducted to make this diagnosis?

- A. Measuring urine ammonia levels
- B. Measuring residual nitrogen in the blood
- C. Measuring uric acid levels in the blood and urine
- D. Measuring urine creatinine levels
- E. Measuring urea levels in the blood and urine

17. A patient suffers from angina pectoris. What antianginal drug is this patient contraindicated if he is allergic to iodine?

- A. Nitroglycerine
- B. Drotaverine
- C. Amiodarone
- D. Verapamil
- E. Nitrosorbide (Isosorbide dinitrate)

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

- A. *M. zygomaticus major*
- B. *M. occipitofrontalis (venter frontalis)*
- C. *M. orbicularis oculi*
- D. *M. corrugator supercilli*
- E. *M. procerus*

19. During a regular check-up with the dentist, a patient diagnosed with chronic gingivitis presents with no inflammatory changes in the gingival mucosa. This condition of the patient can be characterized as:

- A. Complication
- B. Remission
- C. Pathologic reaction
- D. Pathologic process
- E. Recurrence

20. A patient has a history of chronic heart failure. Which of the following hemodynamic parameters is a major symptom of cardiac decompensation development?

- A. Increased peripheral vascular resistance
- B. Tachycardia development
- C. Decreased stroke volume
- D. Tonogenic dilatation
- E. Increased central venous pressure

21. Deficiency of a certain vitamin can result in a group of symptoms called pellagra. Dermatitis, diarrhea, and dementia are the three main symptoms in such cases. Name the deficient vitamin:

- A. Vitamin C
- B. Vitamin B₂
- C. Vitamin B₁
- D. Vitamin PP
- E. Vitamin A

22. In a maternity hospital a newborn should receive vaccination against tuberculosis. What vaccine should be chosen?

- A. BCG vaccine
- B. Tuberculin
- C. EV vaccine
- D. DPT vaccine
- E. STI vaccine

23. After administration of eyedrops, the patient developed mydriasis and paralysis of accommodation. What group of drugs can cause this effect?

- A. Anticholinesterase drugs
- B. Muscarinic antagonists
- C. α -adrenergic blockers
- D. Muscarinic agonists
- E. β -adrenergic agonists

24. Before the surgery for realignment of the fractured bone of the upper jaw, the patient received neuroleptanalgesia. Neuroleptic droperidol was administered along with analgesic fentanyl. What type of drug interaction was used?

- A. Potentiated synergism
- B. Additive synergism
- C. Synergo-antagonism
- D. Non-competitive antagonism
- E. Competitive antagonism

25. Cells of basal layer of epidermis were damaged due to exposure to radiation. What function of epidermis will be impaired or inhibited first?

- A. Regenerative
- B. Absorption
- C. Barrier
- D. Dielectric
- E. Protective

26. A patient diagnosed with atherosclerosis, ischemic heart disease, and rest angina pectoris was hospitalized into the cardiology department. Laboratory analysis shows high lipid levels in his blood plasma. What class of plasma lipids plays the main role in pathogenesis of atherosclerosis?

- A. High-density lipoproteins
- B. Fatty acid-albumin complexes
- C. Chylomicrons
- D. Low-density lipoproteins
- E. α -lipoproteins

27. A culture of coccal bacteria was obtained from the oropharynx of a boy with chronic tonsillitis. In the smears these bacteria are arranged in chains. What bacteria are likely in this case?

- A. Streptococci
- B. Vibrio
- C. Clostridia
- D. Escherichia
- E. Staphylococci

28. Examination of a patient who came to the neurological department shows smoothed-out forehead wrinkles, inability to squint the eyes, drooping mouth corner. One cheek "inflates" along with breathing. What nerve is damaged in this case?

- A. Trigeminal
- B. Accessory
- C. Facial
- D. Oculomotor
- E. Vagus

29. Every diet includes products with dietary fiber. These fibers cannot be digested by gastrointestinal enzymes and cannot be absorbed by the body. What is

the role of dietary fiber?

- A.** Inhibits motor function of alimentary tract
- B.** Inhibits absorptive function of alimentary tract
- C.** Inhibits secretion of enzymes in digestive juices
- D.** Stimulates motor function of alimentary tract
- E.** Inhibits secretory function of alimentary tract

30. A patient is diagnosed with parathyroid tumor. He presents with generalized fibrous osteodystrophy and periodical renal colic attacks. US detects small nephroliths in the kidneys. What is the most likely cause of nephrolithiasis in this case?

- A.** Hypocalcemia
- B.** Hypercalcemia
- C.** Hyperphosphatemia
- D.** Hyperuricemia
- E.** Hypercholesterolemia

31. A man has developed a drooping mouth corner and smoothed out nasolabial fold due to influenza complication. What nerve is damaged?

- A.** Mandibular nerve
- B.** Facial nerve
- C.** Maxillary nerve
- D.** Trochlear nerve
- E.** Oculomotor nerve

32. Examination of a person with an extremely short stature (dwarfism) detects childish facial features, normal body proportions, and underdeveloped secondary sexual characters. This person has low hormonal activity in the:

- A.** Thymus
- B.** Middle lobe of pituitary gland
- C.** Posterior lobe of pituitary gland
- D.** Thyroid gland
- E.** Anterior lobe of pituitary gland

33. When studying chemical composition of a tooth tissue, it is determined that 95–97% of this tissue consists of mineral substances (hydroxyapatite, carbonate apatite, fluorapatite), 1–2% consists of organic compounds, and 3% consists of water. What type of dental tissue is it?

- A.** Pulp
- B.** Enamel
- C.** Periodontium
- D.** Cement
- E.** Dentin

34. In the process of tooth extraction, the connection between the tooth cement and tooth socket is being destroyed. Name this connecting structure:

- A.** Cement
- B.** Gums
- C.** Periodontium
- D.** Dentin
- E.** Enamel

35. A patient suffering from ciliary arrhythmia with a history of bronchial asthma should be prescribed an antiarrhythmic drug. What antiarrhythmic drug is contraindicated in this case?

- A.** Ajmaline
- B.** Anaprilin (Propranolol)
- C.** Verapamil
- D.** Nifedipine
- E.** Novocainamide (Procainamide)

36. Fatigability of masticatory muscles can result in their abnormally slow relaxation, which impairs mechanical processing of food. Name this condition:

- A.** Tetanus
- B.** Galvanization
- C.** Hypodynamia
- D.** Contracture
- E.** Galvanism

37. Nitrogen(II) oxide is an unstable molecule that takes part in vasodilation, immune processes, and neurotransmission. What enzyme participates in formation of nitrogen(II) oxide from arginine?

- A.** Argininosuccinate lyase
- B.** Ornithine carbamoyl transferase
- C.** Argininosuccinate synthetase
- D.** NO-synthase
- E.** Arginase

38. A 26-year-old woman was found to have a tumor of the alveolar process. The tumor manifests as a dense node with clear margins. Histological examination shows homogeneous mononuclear small oval cells mixed with multinucleated giant cells; occasionally bone trabeculae form among the cells. Make the diagnosis:

- A. Ameloblastoma
- B. Giant-cell tumor of the bone
- C. Eosinophilic granuloma
- D. Fibromatous epulis
- E. Primordial cyst

39. A traumatologist has diagnosed a patient with a fracture in the area of the canine fossa. This fossa is located on the:

- A. Zygomatic bone
- B. Maxilla
- C. Mandible
- D. Frontal bone
- E. Palatine bone

40. 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. Renal corpuscle
- B. Proximal tubule
- C. Distal straight tubule
- D. Thin tubule
- E. Capillaries of peritubular capillary network

41. Microscopic examination of a surgical biopsy material (part of the lip with an ulcer) shows epithelial complexes composed of atypical stratified epithelium with pathological mitotic figures near the ulcer margins and under the ulcer floor in the connective tissue of mucosa. Within these complexes there are accumulations of bright pink concentric formations. What pathology is it?

- A. Squamous cell nonkeratinous carcinoma
- B. Transitional cell carcinoma
- C. Squamous cell keratinous carcinoma
- D. Papilloma
- E. Basal cell carcinoma

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

- A. Productive bronchitis
- B. Convulsions
- C. Heart failure
- D. Asphyxia of newborn
- E. Bronchial asthma

43. A child with a point mutation presents with absence of glucose 6-phosphatase, hypoglycemia, and hepatomegaly. These

signs are characteristic of:

- A. Parkinson disease
- B. Addison disease (primary adrenal insufficiency)
- C. McArdle disease (glycogen storage disease type V)
- D. Von Gierke disease (glycogen storage disease type I)
- E. Gaucher disease

44. Histological examination of the mandibular bone shows a tumor consisting of fibrous tissue that surrounds basophilic cement-like foci of varying size. Make the diagnosis, what kind of tumor it is:

- A. Cemento-ossifying fibroma
- B. Giant cementoma
- C. Cementoma
- D. Cementoblastoma
- E. Odontogenic fibroma

45. Prior to tooth extraction the patient was given a local anesthetic, lidocaine. What is the mechanism of anesthetic action of this drug?

- A. Stimulation of GABA receptors
- B. Block of H1-histamine receptors
- C. Sodium channels block
- D. Stimulation of muscarinic acetylcholine receptors
- E. Block of β_2 -adrenergic receptors

46. A patient is in a state of hypoglycemic coma. What hormone can cause this condition if overdosed?

- A. Progesterone
- B. Insulin
- C. Cortisol
- D. Somatotropin
- E. Corticotropin

47. A 2-year-old child with a history of URTI, who died with signs of cardiopulmonary failure, has hyperemic right lung. In segments 2, 6, and 10 on the surface and on section there are irregular-shaped yellow airless foci, with their size varying from several millimeters to 1 cm. Microscopy shows that in these portions of pulmonary tissue the alveoli, bronchioles, and small bronchi contain exudate with predominance of neutrophils. What is the most likely diagnosis?

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

48. To facilitate teeth mineralization in the course of caries treatment, certain substances are used. These substances are the source from which minerals are supplied to the hard dental tissues. Name these substances:

- A. Potassium sulfate
- B. Calcium glycerophosphate
- C. Sodium chloride
- D. Magnesium sulfate
- E. Copper sulfate

49. 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. Radicular cyst
- B. Follicular cyst
- C. Primordial cyst
- D. Follicular ameloblastoma
- E. Cherubism

50. A 40-year-old woman after installation of artificial crowns on her upper incisors eventually developed a brownish gingival enlargement on the vestibular surface. The enlargement covers the crowns and is 15 mm in diameter. Open biopsy results: under the stratified squamous epithelium of the gums there is a neoplasm consisting of connective tissue with numerous sinusoid vessels, oval mononuclear cells that form osteoid substance, and multinucleated giant cells that destroy the maxillary alveolar ridge. Make the diagnosis:

- A. Fibromatous epulis
- B. Angiomatous epulis
- C. Giant-cell epulis
- D. Eosinophilic granuloma
- E. Gingival fibromatosis

51. A 30-year-old patient hospitalized with diagnosis of acute glomerulonephritis presents with proteinuria. What disturbance has caused this phenomenon?

- A. Increased permeability of glomerular membrane
- B. Delayed excretion of nitrogen metabolism products
- C. Decreased oncotic blood pressure
- D. Increased hydrostatic pressure on the capillary walls
- E. Decreased number of functional nephrons

52. A patient has suffered a head injury. On examination there is a subcutaneous hematoma in the temporal area. What vessel was damaged, resulting in hematoma development?

- A. *A. occipitalis*
- B. *A. temporalis superficialis*
- C. *A. maxillaris*
- D. *A. auricularis posterior*
- E. *A. buccalis*

53. During analysis of a blood sample, the laboratory assistant additionally noted that this sample belongs to a female patient. Such conclusion can be made based on the structural characteristics of certain blood corpuscles. Name this type of corpuscles:

- A. Basocytes
- B. Lymphocytes
- C. Monocytes
- D. Neutrophils
- E. Erythrocytes

54. To improve digestion of fatty food, the patient was prescribed a bile-containing preparation. What components of this preparation take part in emulsification of fats?

- A. Cholesterol and its ethers
- B. Bile acids
- C. Higher fatty acids
- D. Bilirubin glucuronides
- E. Diglycerides

55. 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. Collagen
- B. Ceruloplasmin
- C. Transferrin
- D. Albumin
- E. Antitrypsin

56. Examination of the patient shows that the patient's tongue cannot be moved

forward (the patient cannot stick his tongue out). What muscle is damaged?

- A. Stylohyoid muscle
- B. Transverse muscle of the tongue
- C. Genioglossal muscle
- D. Hyoglossal muscle
- E. Longitudinal muscle of the tongue

57. 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. Medial pterygoid muscle
- B. Temporal muscle
- C. Geniohyoid muscle
- D. Lateral pterygoid muscle
- E. Masseter

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

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

59. 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. Histoplasmosis
- B. Toxoplasmosis
- C. Brucellosis
- D. Syphilis
- E. Listeriosis

60. The third heart sound can be detected via phonocardiogram only in adult non-asthenic patients. It occurs during the following phase of a cardiac cycle:

- A. Isovolumetric relaxation
- B. Rapid filling
- C. Reduced filling
- D. Rapid ejection
- E. Asynchronous contraction

61. Prior to a complex surgery the patient

developed skin pallor, rapid heart rate and respiration rate, elevated blood pressure, and dry mouth. These signs appeared due to activation of:

- A. Somatic nervous system
- B. Metasympathetic nervous system
- C. Parasympathetic nervous system
- D. —
- E. Sympathetic nervous system

62. A patient complains of acute spastic abdominal pain, frequent urge to defecate, liquid bloody feces with mucus. Laboratory analysis of fecal smear revealed inconstant in shape organisms with erythrocytes. What is the most likely diagnosis?

- A. Intestinal trichomoniasis
- B. Schistosomiasis
- C. Lambliasis
- D. Amebiasis
- E. Balantidiasis

63. A 40-year-old man has returned home after his voyages along the coast of West Africa that lasted for many months. 15 days later he developed weakness, headache, elevated temperature, and fever. He was diagnosed with malaria. What laboratory methods of analysis can confirm this diagnosis?

- A. Serology, biologic method
- B. Bacteriology, allergy testing
- C. Bacterioscopy, biologic method
- D. Microscopy, microbial culture
- E. Microscopy, serology

64. In an experiment, cerebral neurons of a test animal were electrostimulated, which resulted in hypophagia (refusal to eat food). Where in the brain were the electrodes placed?

- A. Adenohypophysis
- B. Red nucleus
- C. Hypothalamus
- D. Neurohypophysis
- E. Thalamus

65. 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. Arterial hypertension
- B. Coma
- C. Cardiogenic shock
- D. Collapse
- E. Hypovolemic shock

66. A cell is an elementary living system that ensures proper structure, development, functioning, adaptation, procreation, and regeneration of the organism. Name the three main structural components of a cell:

- A. Cell membrane (plasmalemma), cytoplasm, nucleus
- B. Cytoplasm, organelles, nucleus
- C. Glycocalyx, nucleus, organelles
- D. Hyaloplasm, plasmalemma, nucleus
- E. Cell membrane (plasmalemma), inclusions, organelles

67. Sodium citrate is used to preserve donor blood. What should be added to this blood to induce its coagulation?

- A. Calcium ions
- B. Sodium ions
- C. Fibrinogen
- D. Vitamin K
- E. Prothrombin

68. During heart ultrasound a 1.5-year-old child presents with non-closure of the foramen ovale, which is clinically confirmed. Where in the heart is this defect located?

- A. Right atrioventricular valve
- B. Cardiac apex
- C. Left atrioventricular valve
- D. Interatrial septum
- E. Interventricular septum

69. A 43-year-old man complains of sudden skin edema and redness with vesicles and itching. He developed these signs after eating shrimps. Such local signs are characteristic of the following type of hypersensitivity:

- A. Local signs of type II hypersensitivity
- B. Local signs of type IV hypersensitivity
- C. —
- D. Type III hypersensitivity reaction
- E. Local signs of type I hypersensitivity

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

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

71. Autopsy of a 2-year-old child, who died of meningitis, shows absence of thymus and T-dependent areas in the peripheral lymphoid tissue. What immunodeficiency syndrome can be characterized by these changes?

- A. Combined immunodeficiency syndrome
- B. Humoral immunodeficiency syndrome
- C. Secondary immunodeficiency syndrome
- D. Cellular immunodeficiency syndrome
- E. Deficiency syndrome of monocytic phagocytes

72. 30 minutes after dental treatment the patient developed red itching spots on the face and oral mucosa. The patient was diagnosed with urticaria. What bioactive substance with vasodilating and pruriginous effect is produced in this type of allergic reaction?

- A. Histamine
- B. Bradykinin
- C. Prostaglandin E2
- D. Leukotriene B4
- E. Interleukin-1

73. To terminate hypertensive crisis the patient was administered solution of magnesium sulfate. What route of drug administration should be chosen?

- A. Intravenous
- B. Oral
- C. Duodenal
- D. Intra-arterial
- E. Rectal

74. A patient with essential hypertension presents with significant increase in left ventricular myocardial mass. It is likely to be caused by:

- A. Myocardial fluid retention
- B. Increased number of cardiomyocytes
- C. Proliferation of connective tissue
- D. Increased volume of cardiomyocytes
- E. Fatty infiltration of the myocardium

75. The patient's EEG shows delta and theta rhythms, which indicates that the patient is in a state of:

- A. Active wakefulness
- B. Rapid eye movement sleep
- C. Rest with eyes open
- D. Slow-wave sleep
- E. Rest with eyes closed

76. A 53-year-old patient with a long history of nephrolithiasis underwent nephrectomy. The removed kidney is a thin-walled sac filled with urine. Renal parenchyma is atrophied. Specify this complication of nephrolithiasis:

- A. Pyonephrosis
- B. Pyelonephritis
- C. Nephrosclerosis
- D. Multicystic kidney disease
- E. Hydronephrosis

77. To speed up the healing process in a wound located on the patient's oral mucosa, the patient was prescribed a medicine that is a thermostable protein. This protein can be found in human tears, saliva, and breastmilk and it can be detected in freshly laid eggs. It is known as a factor of the body's natural resistance. Name this protein:

- A. Interferon
- B. Lysozyme
- C. Interleukin
- D. Complement
- E. Imanin

78. A patient with trigeminal neuralgia was given parenterally a non-narcotic analgesic with rapid onset and short action. This analgesic is manufactured in tablets and ampoules. What drug was the patient administered?

- A. Piroxicam
- B. Analgin (Metamizole)
- C. Indometacin
- D. Mefenamic acid
- E. Ibuprofen

79. What artery can be damaged when conduction anesthesia is being administered to the area of mandibular foramen?

- A. Lingual artery
- B. Middle meningeal artery
- C. Inferior alveolar artery
- D. Buccal artery
- E. Pterygoid branches of the maxillary artery

80. What type of hemophilia inheritance

results in men being affected by hemophilia and in women being carriers of this disease?

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

81. 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. Creatinine
- B. Creatine
- C. Urea
- D. Uric acid
- E. Ammonia

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

83. 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. Musculotubal canal
- B. Carotid canal
- C. Tympanic canal
- D. Pterygoid canal
- E. Facial canal

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. *Trichomonas hominis*
- C. *Balantidium coli*
- D. *Entamoeba histolytica*
- E. *Entamoeba gingivalis*

85. In an experiment, the myotome

was destroyed in a rabbit fetus. This manipulation will result in malformation of the following structure:

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

86. A patient, who works in underground mining, developed pulmonary fibrosis. In this case spirometry shows the following:

- A. Increased vital capacity of lungs
- B. Normal airway resistance
- C. Decreased airway resistance
- D. Increased airway resistance
- E. Decreased vital capacity of lungs

87. A certain hereditary syndrome affects teeth, hair, and bones. Each generation has affected individuals. The syndrome occurs equally frequent in men and women. What type of inheritance is it?

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

88. In what organ does biotransformation (metabolic transformation) of most medicinal agents occur upon their introduction into an organism?

- A. Kidneys
- B. Liver
- C. Intestine
- D. Skin
- E. Lungs

89. A 22-year-old man was brought into the inpatient department with complaints of fever and weakness. One of his enlarged cervical lymph nodes was excised for histological analysis. In the tissues of the lymph node there are necrotic foci surrounded with epithelioid cells, Langhans multinucleated giant cells, and lymphocytes. What disease can be suspected in this case?

- A. Syphilis
- B. Lymphatic leukemia
- C. Lymphogranulomatosis
- D. Sarcoidosis
- E. Tuberculosis

90. A patient has a head trauma in the area of the suture between two parietal

bones. What sinus of dura mater is likely to be damaged in this case?

- A. Superior sagittal sinus
- B. Sigmoid sinus
- C. Transverse sinus
- D. Occipital sinus
- E. Inferior sagittal sinus

91. 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. Ascaris lumbricoides
- C. Ancylostoma
- D. Trichinella
- E. Enterobius

92. A woman with allergic dermatitis has been taking an antiallergic drug for a week. As the result of taking this drug, she developed marked somnolence. Name this drug:

- A. Aminazine (Chlorpromazine)
- B. Cromolyn sodium (Cromoglicic acid)
- C. Dimedrol (Diphenhydramine)
- D. Adrenaline hydrochloride
- E. Loratadine

93. A diet must include fats. Fats perform plastic function in an organism due to their inclusion in:

- A. Cell end-organs
- B. Cell ion pumps
- C. Cell membranes
- D. Cell ion channels
- E. Glycocalyx

94. 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. Suppresses fibrinolysis
- B. Increases blood coagulability via intensified prothrombin synthesis
- C. Decreases vascular permeability
- D. Suppresses platelet aggregation
- E. Binds free calcium ions, removing calcium from coagulation reaction

95. A 38-year-old man suddenly died. Autopsy revealed myocardial infarction

in the posterior wall of the left ventricle. What are the most likely changes in myocardiocyte structure that can be revealed microscopically in the infarction focus?

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

96. Examination of a patient shows base metabolism increased by 50%. This change is caused by increased secretion of the following hormone:

- A. Thyroxine
- B. Prolactin
- C. Growth hormone
- D. Parathormone
- E. Insulin

97. An electron microphotograph of duodenal epithelium clearly shows a cell with electron-dense granules in the basal pole. What cell is it?

- A. Parietal
- B. Poorly differentiated
- C. Endocrine
- D. Goblet
- E. Prismatic with a limbus

98. The pediatrician examines a one-year-old child. The child has 4 teeth in the oral cavity. How many milk teeth should the child have at this age?

- A. 14
- B. 20
- C. 12
- D. 10
- E. 8

99. Disturbed auditory function can be caused by changes in the structure of the receptor cells of spiral organ of Corti. What cells are affected in such cases?

- A. Marginal cells
- B. Supporting cells
- C. Hair cells
- D. Phalangeal cells
- E. Pillars

100. A structural gene — a DNA molecule segment — was damaged. However, it did not result in amino acid replacement in the protein, because after a time this damage was corrected with specific enzymes. Name this DNA ability:

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

101. 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. Hydrochlorothiazide
- B. Spironolactone
- C. Triamterene
- D. Furosemide
- E. Mannitol

102. A 26-year-old man presents with anemia against the background of chronic gastritis with intrinsic Castle factor deficiency. What type of anemia is characteristic of such cases?

- A. Thalassemia
- B. Chronic posthemorrhagic
- C. Iron-deficiency
- D. Hypoplastic
- E. B_{12} and folate deficiency

103. Erythrocyte needs energy in the form of ATP for its vital functions. What process supplies erythrocytes with necessary amount of ATP?

- A. β -oxidation of fatty acids
- B. Pentose phosphate pathway
- C. Tricarboxylic acid cycle
- D. Aerobic oxidation of glucose
- E. Anaerobic glycolysis

104. A 28-year-old patient had been diagnosed with multifragmental fracture of the right hip. On the third day after the injury he began to complain of pain in the right side of chest, difficult respiration. A day later the death occurred against the background of progressive heart and respiratory failure. Histological study of pulmonary and cerebral blood vessels revealed orange sudanophilic droplets that completely obstructed the vessels of microvasculature. What complication caused the death of the patient?

- A. Fat embolism
- B. Thromboembolism
- C. Gas embolism
- D. Microbial embolism
- E. Drug-induced embolism

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

- A. A
- B. B₁₂
- C. B₆
- D. B₁
- E. C

106. A patient with wrist wound started to develop an edema. At what stage of local circulatory disturbance does it usually occur?

- A. Arterial hyperemia
- B. Stasis
- C. Arteriolar spasm
- D. Prestasis
- E. Venous hyperemia

107. 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. Opening of the mitral valve
- C. Opening of the tricuspid valve
- D. Closing of the aortic valve
- E. Closing of the atrioventricular valves

108. A 36-year-old patient with diabetes mellitus developed seizures with loss of consciousness after an insulin injection. What was the result of blood glucose test?

- A. 5.5 mmol/L
- B. 2.5 mmol/L
- C. 8.0 mmol/L
- D. 3.3 mmol/L
- E. 10 mmol/L

109. A fixed-run taxi passenger has a severe attack of tachycardia. A doctor travelling by the same taxi has managed to slow down his heart rate by pressing upon the eyeballs and thus inducing the following reflex:

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

110. A sick child has gingivitis caused by

anaerobic infection. The child needs to be prescribed an antimicrobial drug that belongs to the following class:

- A. Nitrofurans
- B. Nitroimidazoles
- C. Aminoglycosides
- D. Polymyxins
- E. Sulfonamides

111. 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. Study the level of T helper cells
- B. Inoculate blood sample on sugar broth
- C. Determine the causative agent by infecting cell culture
- D. Study blood for hepatitis markers and anti-HIV antibodies
- E. Identify specific antibodies

112. A patient with acute retention of urine has been brought to an admission room. During examination a doctor found out that the patient has urethral obturation caused by pathology of the surrounding organ. Name this organ:

- A. Seminal vesicle
- B. Epididymis
- C. Prostate
- D. Spermatic cord
- E. Testicle

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

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

- A. Glucagon
- B. Adrenaline
- C. Noradrenaline
- D. Insulin
- E. Cortisol

115. A patient who died of chronic kidney disease has dull pericardial layers with thin fiber-like gray deposits. What pathologic process is observed in the pericardium?

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

116. An 84-year-old patient suffers from parkinsonism. One of the pathogenetic development elements of this disease is deficiency of a certain mediator in some of the brain structures. Name this mediator:

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

117. Microscopy of a plaque-like structure extracted from the lateral surface of the tongue of a man with dentures revealed significant thickening of the epithelial layer along with processes of parakeratosis, hyperkeratosis, and acanthosis; in the connective tissue there are small round cell infiltrations. Make the diagnosis of this pathological condition:

- A. Chronic glossitis
- B. Atrophic (Hunter's) glossitis
- C. Leukoplakia
- D. Chronic stomatitis
- E. Ichthyosis

118. The doctor observes a disturbed process of lacrimation in the patient due to irritation of one of the branches of the VII pair of cranial nerves. What branch is irritated?

- A. *R. colli*
- B. *N. petrosus major*
- C. *Chorda tympani*
- D. *N. auricularis posterior*
- E. *N. stapedius*

119. A patient complains of painful chewing, especially when his lower

jaw moves forward and to the side. It indicates functional disorder of the following muscles:

- A. Temporal muscles
- B. Masseter muscles
- C. Mylohyoid muscles
- D. Lateral pterygoid muscles
- E. Medial pterygoid muscles

120. Examination of the femur detected suppurative inflammation of compact bone substance and bone marrow with formation of sequestra. What disease causes such changes?

- A. Multiple myeloma
- B. Periostitis
- C. Osteomyelitis
- D. Giant cell tumor of bone
- E. Reticulosarcoma

121. A 28-year-old patient complains of frequent gingival hemorrhages. Blood test revealed the clotting factor II (prothrombin) deficiency. What phase of blood coagulation is impaired in this patient?

- A. Thrombin generation
- B. —
- C. Clot retraction
- D. Vascular-platelet hemostasis
- E. Fibrinolysis

122. Lysozyme is a hydrolyzing enzyme that provides protective function of saliva. Its antibacterial properties are based on its ability to break the structural integrity of a bacterial cell wall by inducing hydrolysis of the following:

- A. Peptide bonds of proteins
- B. Ester bonds of lipids
- C. Cell wall antigens and endotoxins
- D. Glycosidic bonds of nitrogen bases and pentoses
- E. Glycosidic bonds of mucopolysaccharides

123. Erythrocytes of a person with fourth blood group (genotype IAIB) contain both antigen A controlled by allele IA and antigen B that is the product of allele IB expression. What type of gene interaction is demonstrated by this phenomenon?

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

124. What immunoglobulins produced in salivary glands ensure local immunity of oral mucosa?

- A. IgM
- B. IgA
- C. IgD
- D. IgE
- E. IgG

125. A 12-year-old boy has tetanic convulsions. What gland is likely to be functionally impaired in this case?

- A. *Hypophysis*
- B. *Glandula pinealis*
- C. *Glandula thyroidea*
- D. *Thymus*
- E. *Glandulae parathyroidae*

126. Histological examination of a lymph node removed from the posterior triangle of neck of an 18-year-old patient revealed cell agglomerations that included single multinuclear Reed-Sternberg cells, major Hodgkin's cells, minor Hodgkin's cells, and many lymphocytes, single plasmatic cells, and eosinophils. What is the most likely diagnosis?

- A. Lymphogranulomatosis
- B. Lymphocytic lymphoma
- C. Chronic lymphoid leukemia
- D. Burkitt tumor
- E. Nodular lymphoma

127. A patient presents with osteoporosis. Hypercalcemia and hypophosphatemia are observed in the patient's blood. What is the cause of this condition?

- A. Increased parathormone secretion
- B. Increased thyroxin secretion
- C. Inhibited parathormone secretion
- D. Increased corticosteroid secretion
- E. Inhibited corticosteroid secretion

128. Blood test for diabetes mellitus shows lactic acid levels of 2.5 mmol/L. What complication is it?

- A. Hypoglycemic coma
- B. Hyperketonemic coma
- C. Hyperosmolar coma
- D. Lactacidemic coma
- E. Hyperglycemic coma

129. Examination of a sick child detected partial absence of lingual papillae on the lateral surface of the tongue. What papillae are affected?

- A. Conoid
- B. Filiform
- C. Vallate
- D. Fungiform
- E. Folate

130. A 36-year-old man was hospitalized into the infectious diseases hospital with profuse diarrhea, signs of exicosis, and low body temperature. He died of uremia. Autopsy revealed a colorless liquid resembling rice water in the lumen of the small intestine; mucosa is edematous. Microscopy of the small intestine shows plethoric vessels, focal hemorrhages, enterocyte desquamation, hypersecretion of goblet cells, and lympholeukocytic infiltration of mucosal stroma. Make the diagnosis:

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

131. Chronic inflammation of gingiva resulted in excessive growth of connective tissue fibers. What cell elements are leading in the development of this condition?

- A. Osteoblasts
- B. Osteoclasts
- C. Fibroblasts
- D. Fibrocytes
- E. Macrophages

132. What antimicrobial drug is not a cephalosporin antibiotic?

- A. Cefalexin
- B. Ciprofloxacin
- C. Cefepime
- D. Ceftriaxone
- E. Cefazolin

133. A patient with dislocated jaw was given a short-acting muscle relaxant by a doctor. Name this drug:

- A. Cytitonum (Cytisine)
- B. Procaine
- C. Pyridostigmine hydrobromide
- D. Dithylinum (Suxamethonium chloride)
- E. Papaverine hydrochloride

134. A 50-year-old man declined anesthesia during dental manipulations. Due to severe pain he developed anuria caused by acute increase in production of:

- A. Thyroxin
- B. Renin
- C. Thymosin
- D. Adrenaline
- E. Glucagon

135. Among organic substances of a cell there is a polymer composed of dozens, hundreds, and thousands of monomers. This molecule is capable of self-reproduction and can be an information carrier. X-ray structure analysis shows this molecule to consist of two complementary spiral threads. Name this compound:

- A. RNA
- B. DNA
- C. Hormone
- D. Carbohydrate
- E. Cellulose

136. 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. ophthalmica*
- C. *F. supraorbitalis*
- D. *A. infraorbitalis*
- E. *A. carotis externa*

137. Microscopy of the samples obtained from the patient's pharynx and stained according to Neisser shows bacilli with thickened poles situated at an angle to each other. Name the likely species of these microorganisms:

- A. *Corynebacterium diphtheriae*
- B. *Mycobacterium tuberculosis*
- C. *Streptococcus pyogenes*
- D. *Neisseria gonorrhoeae*
- E. *Leptospira interrogans*

138. Degenerative changes resulted in formation of mineralized foci in the tongue pulp. Some of these foci contain canaliculi. Name these formations:

- A. Ossification patches
- B. Denticles
- C. Bone tissue
- D. Cement
- E. Fibrous bodies

139. Gastroscope of a patient revealed insufficient amount of mucus in the coating of the mucous membrane. It can be caused by the dysfunction of the following cells of gastric wall:

- A. Parietal cells of gastric glands
- B. Cervical cells
- C. Cells of prismatic glandular epithelium
- D. Main exocrinocytes
- E. Endocrinocytes

140. A patient with acute pancreatitis presents with significantly increased urine diastase levels. What proteolysis inhibitor must be included into complex therapy of this patient?

- A. Digestal
- B. Pancreatine
- C. Contrykal (Aprotinin)
- D. Festal
- E. Mezymb forte

141. Examination shows that the patient has disturbed secretory function of a parotid gland due to pathology of the nerve that carries parasympathetic postganglionic nerve fibers from the otic ganglion to the affected gland. What nerve is it?

- A. *N. auriculotemporalis*
- B. *N. lingualis*
- C. *N. facialis*
- D. *N. buccalis*
- E. *N. petrosus major*

142. In the genetic consultancy a pregnant woman (20 weeks of pregnancy) was examined. US shows normally developed fetus, no abnormalities in the cardiovascular system, ductus arteriosus is functional. What fetal vessels are connected with ductus arteriosus?

- A. Aorta and superior vena cava
- B. Pulmonary trunk and inferior vena cava
- C. Pulmonary trunk and pulmonary veins
- D. Pulmonary trunk and aorta
- E. Aorta and inferior vena cava

143. A 24-year-old patient was administered glutamic acid to treat epilepsy. Medicinal effect in this case

occurs not due to glutamate itself, but due to the product of its decarboxylation:

- A. Dopamine
- B. γ -aminobutyric acid
- C. Histamine 4-monooxygenase
- D. Taurine
- E. Serotonin

144. 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. Clotrimazole
- B. Metrogyl (Metronidazole)
- C. Azithromycin
- D. Acyclovir
- E. Sulfacyl sodium (Sulfacetamide)

145. A man after a traffic accident was brought in a severe condition to the intensive care unit. The patient's condition can be described as a severe pathologic process accompanied by exhaustion of vital functions that brings the body to the brink of death due to critical decrease of capillary circulation in the affected organs. Name the patient's condition:

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

146. Intensive physical work leads to accumulation of lactic acid in muscles. What enzyme enables formation of lactic acid from pyruvate in the process of anaerobic glycolysis?

- A. Pyruvate carboxylase
- B. Phosphofructokinase
- C. Lactate dehydrogenase
- D. Pyruvate dehydrogenase
- E. Aldolase

147. A bacteriological laboratory received a sample of dried fish from an

outbreak of food poisoning. Inoculation of the sample on Kitt-Tarozzi medium revealed microorganisms resembling tennis racket. These microorganisms are causative agents of the following disease:

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

148. A patient came to the doctor with complaints of general weakness and sleep disturbances. Objectively the patient's skin is yellow. In blood there is increased concentration of direct bilirubin and bile acids. Acholic stool is observed. What condition can be characterized by these changes?

- A. Parenchymatous jaundice
- B. Hemolytic jaundice
- C. Familial nonhemolytic (Gilbert's) syndrome
- D. Mechanical jaundice
- E. Chronic cholecystitis

149. 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. 0 (I) Rh (+)
- B. AB (IV) Rh (+)
- C. B (III) Rh (-)
- D. A (II) Rh (+)
- E. AB (IV) Rh (-)

150. A student, who throughout the semester was studying poorly, is emotionally tense during the final exam. Leading mechanism of emotional tension in this case is the lack of:

- A. Time
- B. Energy and information
- C. Information
- D. Time and energy
- E. Energy