

MINISTRY OF PUBLIC HEALTH OF UKRAINE

Department of human resources policy, education and science

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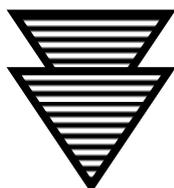
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Test items for licensing examination

Krok 1

STOMATOLOGY



General Instruction

Every one of these numbered questions or unfinished statements in this chapter corresponds to answers or statements endings. Choose the answer (finished statements) that fits best and fill in the circle with the corresponding Latin letter on the answer sheet.

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The book includes test items for use at licensing integrated examination “Krok 1. Stomatology” and further use in teaching.

The book has been developed for students of stomatological faculties and academic staff of higher medical educational establishments.

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1. Carious cavities of a 29-year-old patient contain parasitic protozoa. It is determined that they relate to the *Sarcodina* class. Specify these single-celled organisms:

- A. *Entamoeba gingivalis*
- B. *Entamoeba coli*
- C. *Entamoeba histolytica*
- D. *Amoeba proteus*
- E. *Lambliia intestinalis*

2. A puncture sample taken from the lymph node of a patient with preliminary diagnosis of protozoan disease has been investigated. The preparation was processed with Giemsa stain and the following was detected: crescent-shaped bodies with pointed tips, blue cytoplasm and red nuclei. What protozoa have been detected in the preparation?

- A. *Toxoplasma*
- B. *Plasmodium malariae*
- C. Dermatotropic *Leishmania*
- D. Viscerotropic *Leishmania*
- E. *Trypanosoma*

3. It is necessary to perform urinary bladder catheterization of an adult man. Resistance to the catheter can occur in the following structure or part of urethra:

- A. Membranous part
- B. Prostatic part
- C. Spongiose part
- D. External urethral orifice
- E. Internal urethral orifice

4. A woman addressed a dentist with complains of bruise and swelling around her eye. Anamnesis is as follows: several days prior her 1st premolar tooth had been extracted, with infraorbital anesthesia administered; several days later hematoma appeared in the area of *foramen intraorbitale*. Branch of the following artery was damaged:

- A. Maxillary artery
- B. Facial artery
- C. Superficial temporal artery
- D. Superior labial artery
- E. Masseteric artery

5. A patient consulted a doctor about difficult chewing. On examination he was found to have atrophy of the right temporal muscle and masticatory

muscles. Upon opening the mouth, the patient's jaw deviates to the left. What nerve is affected?

- A. Motor portion of the mandibular nerve
- B. Facial
- C. Inferior alveolar
- D. Maxillary
- E. Mandibulohyoid

6. Examination of a 23-year-old patient reveals that, when his tongue is protruded, its tip deviates to the side. This is caused by the dysfunction of the following tongue muscle:

- A. Genioglossus
- B. Hyoid
- C. Superior longitudinal
- D. Inferior longitudinal
- E. Styloglossus

7. It is required to anaesthetize right lower molars. The proper injection site for the conduction anaesthesia is:

- A. The region of the right mandibular foramen
- B. The gums to the right of mandible
- C. The region of the right mental foramen
- D. The region of suborbital foramen
- E. The region of the oval foramen

8. A patient consulted a doctor about an inflammation of the ethmoid bone cells (ethmoiditis). Examination revealed the disorder of blood supply to the bone. Ethmoidal cells are normally supplied with blood through the branches of the following artery:

- A. *A. ophthalmica*
- B. *A. infraorbitalis*
- C. *A. facialis*
- D. *A. cerebri anterior*
- E. *A. transversa faciei*

9. Due to a cranial trauma leading to damage of the eye socket superior wall a patient has lost the ability to lift the upper eyelid and look upwards. What nerve is most likely damaged?

- A. *R. superior n.oculomotorii*
- B. *R. inferior n.oculomotorii*
- C. *N. trochlearis*
- D. *N. abducens*
- E. *N. ophthalmicus*

10. A woman with a tumour of the pancreas has developed mechanic jaundice due to compression of a bile-excreting duct. Which duct is compressed?

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

11. On the longitudinal section of a tooth there are tubules visible in the dentin. What is inside these tubules?

- A.** Processes of odontoblasts
- B.** Processes of ameloblasts
- C.** Odontoblast bodies
- D.** Fibroblasts
- E.** Elastic fibers

12. Study of the histological specimen of a baby's primary tooth revealed hypoplasia (underdevelopment) of enamel. This abnormality is caused by the disruptions in the activity of the following cells:

- A.** Inner enamel epithelium
- B.** Pulp cells of the enamel organ
- C.** Outer enamel epithelium
- D.** Cells of the stratum intermedium of the enamel organ
- E.** Odontoblasts

13. Proliferation of connective tissue in the parenchyma of liver (fibrosis) caused by chronic diseases is typically accompanied by an impairment of blood circulation in the classic lobules. What is the direction of blood flow in these lobules?

- A.** From the periphery to the center
- B.** From the center to the periphery
- C.** Around the lobule
- D.** From the top to the base
- E.** From the base to the top

14. A histological preparation shows organ, where lymphocytes form three types of lymphoid structures: lymph nodules, medullary cords and lymphatic sinuses. What organ is it?

- A.** Lymph node
- B.** Spleen
- C.** Thymus
- D.** Tonsil
- E.** Red bone marrow

15. During formation of mantle dentin in a deciduous tooth there occurred a disruption of odontoblast secretory activity. Such disruption will affect the formation of the following fibers:

- A.** Von Korff's radial collagen fibers
- B.** Reticular fibers
- C.** Elastic fibers
- D.** Ebner's tangential collagen fibers
- E.** Nerve fibers

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

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

17. Histological investigation of a 40-year-old man's thymus revealed the following: decreased part of parenchymatous elements, increased part of adipose and loose connective tissues, high concentration of thymic bodies with total organ weight remaining the same. Name this phenomenon:

- A.** Age-related thymic involution
- B.** Accidental thymic involution
- C.** Thymic hypotrophy
- D.** Thymic dystrophy
- E.** Thymic atrophy

18. A heart microslide demonstrates cells in the shape of pale chords, which have few myofibrilla, glycogen inclusions and eccentric nuclei. Name these cells:

- A.** Purkinje's fibers
- B.** Leading pacemaker cells
- C.** Leading transitional cells
- D.** Endocrine cells
- E.** Contractile cells

19. In the preparation of a 10-day-old

human embryo there are 2 contacting sacs visible (amniotic and vitelline). Name the structure situated at the place of the contact:

- A. Embryonic shield
- B. Fundus of the amniotic sac
- C. Fornix of the vitelline sac
- D. Amniotic pedicle
- E. Extraembryonic mesoderm

20. A patient has petechial hemorrhages on the gums, hard and soft palate, buccal mucosa. This is caused by the dysfunction of the following blood corpuscles:

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

21. A patient with gastric juice hypersecretion has been recommended to exclude from the diet rich broths and vegetable infused water. A doctor recommended it, because these food products stimulate production of the following hormone:

- A. Gastrin
- B. Secretin
- C. Cholecystokinin
- D. Somatostatin
- E. Neurotensin

22. After a hemorrhage into the brainstem a patient has lost reflex of myosis as a reaction to increase of illumination. What structure was damaged?

- A. Vegetative nuclei of oculomotor nerve
- B. Lateral reticular nuclei
- C. Medial reticular nuclei
- D. Red nuclei
- E. Black substance

23. An oculist detected increased time of darkness adaptation of a patient's eye. What vitamin deficiency can cause such symptom?

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

24. Examination of a patient revealed

dermatitis, diarrhea, dementia. What vitamin deficiency is the cause of this condition?

- A. Nicotinamide
- B. Ascorbic acid
- C. Folic acid
- D. Biotin
- E. Rutin

25. A woman has scalded her hand with boiling water. The affected area of her skin became red, swollen and painful. This effect is caused by accumulation of the following substance:

- A. Histamine
- B. Lysine
- C. Thiamine
- D. Glutamine
- E. Asparagine

26. There are various diseases that cause sharp increase of active oxygen, thus leading to cell membranes destruction. Antioxidants are used to prevent it from happening. The most potent natural antioxidant is:

- A. α -tocopherol
- B. Glucose
- C. Vitamin D
- D. Fatty acids
- E. Glycerol

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

- A. Nongaseous excretory alkalosis
- B. Gaseous alkalosis
- C. Gaseous acidosis
- D. Nongaseous metabolic acidosis
- E. Nongaseous excretory acidosis

28. A 49-year-old patient was found to have a disproportionate enlargement of hands, feet, nose, ears, superciliary arches and cheek bones. Blood test revealed hyperglycemia, impaired glucose tolerance. What is the most likely cause of this pathology development?

- A. Hypersecretion of growth hormone
- B. Posterior pituitary hormone hypersecretion
- C. Insulin hyposecretion
- D. Vasopressin hyposecretion
- E. Glucocorticoid hypersecretion

29. A patient suffers from mutation of a gene that corresponds with hemoglobin synthesis. This condition led to development of sickle-cell disease. Name the pathological hemoglobin characteristic of this disease:

- A. HbS
- B. HbA
- C. HbF
- D. HbA1
- E. Bart-Hb

30. A patient, who had suffered severe blood loss three days ago, underwent blood test. The following data was obtained in leukogram: leukocytes - $12 \cdot 10^9/l$, basophils - 0, eosinophils - 3, myelocytes - 0, juvenile - 3, stab neutrophils - 12, segmented neutrophils - 62, lymphocytes - 16, monocytes - 4. What change of leukocyte content occurred in this case?

- A. Neutrophilia with regenerative left-shift
- B. Neutrophilia with degenerative left-shift
- C. Neutrophilia with right-shift
- D. Absolute lymphopenia
- E. Absolute monocytopenia

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

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

32. Due to recurring vomiting a patient has lost significant amount of gastric juice, which led to development of acid-base dysbalance. What type of acid-base dysbalance has developed?

- A. Nongaseous alkalosis
- B. Gaseous acidosis
- C. Nongaseous acidosis
- D. Gaseous alkalosis
- E. Metabolic acidosis

33. Microscopy of an extracted tooth has revealed a focus of enamel destruction at the dentinoenamel junction. Within this focus accumulation of microorganisms occurs; calcium salts disappear from enamel columns; intercolumn substance and enamel columns are partially destroyed. What diagnosis is the most likely?

- A. Superficial caries
- B. Median caries
- C. Deep caries
- D. Fluorosis
- E. Cemental caries

34. A patient with a long history of chronic periodontitis underwent removal of a maxillary cyst located at the root of the affected tooth. Microscopy shows that the bone wall is made up of fibrous tissue infiltrated by lymphocytes and plasma cells. The inner surface of the cyst is covered with stratified squamous epithelium with no signs of keratinization. What is the most likely diagnosis?

- A. Radicular cyst
- B. Follicular cyst
- C. Primordial cyst
- D. Eosinophilic granuloma
- E. Gingival fibromatosis

35. An autopsy of the body of an elderly man, who was suffering from acute intestinal disorder during his last 2 weeks of life, has revealed the following change in the rectum and sigmoid colon: brown and green film covering the mucosa is detected. The intestinal wall is thickened; the cavity sharply narrows down. Microscopy reveals mucosa necrosis of varying depth, necrotic tissue is pierced through with fibrin threads, leucocytic infiltration is observed. What diagnosis is the most probable?

- A. Fibrinous colitis
- B. Catharrhal colon
- C. Ulcerative colitis
- D. Follicular colitis
- E. -

36. Macroscopic examination of lung tissue revealed areas of high airiness with small bubbles. Histological examination revealed thinning and rupture of alveolar septa accompanied by formation of large diversiform cavities. What disease was revealed in the lung?

- A. Pulmonary emphysema
- B. Multiple bronchiectasis
- C. Cavernous tuberculosis
- D. Chronic bronchitis
- E. Fibrosing alveolitis

37. 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 the chest, difficult respiration. One day later the patient died of progressive heart and respiratory failure. Histological study of the 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. Gas embolism
- C. Drug-induced embolism
- D. Microbial embolism
- E. Thromboembolism

38. Autopsy of a man who had tuberculosis revealed a 3x2 cm large cavity in the superior lobe of the right lung. The cavity was interconnected with a bronchus, its wall was dense and consisted of three layers: the internal layer was pyogenic, the middle layer was composed of tuberculous granulation tissue and the external one was consisted of connective tissue. What is the most likely diagnosis?

- A. Fibrous cavernous tuberculosis
- B. Fibrous focal tuberculosis
- C. Tuberculoma
- D. Acute focal tuberculosis
- E. Acute cavernous tuberculosis

39. Autopsy of a man who died from ethylene glycol poisoning revealed that

his kidneys are a little bit enlarged, edematic; their capsule can be easily removed. Cortical substance is broad and light-grey. Medullary substance is dark-red. What pathology had this man?

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

40. While studying blood and mucus samples from the nasopharynx, a bacteriologist took certain measures to conserve the pathogens in the material. Bacterioscopic study revealed the presence of gram-negative cocci resembling coffee beans and arranged in pairs or tetrads. Name the pathogen that was isolated by the bacteriologist:

- A. *Neisseria meningitidis*
- B. *Staphylococcus aureus*
- C. *Neisseria gonorrhoeae*
- D. *Moraxella lacunata*
- E. *Acinetobacter calcoaceticus*

41. In a microslide of the patient's regional lymph node stained with Giemsa method a doctor detected thin microorganisms with 12-14 uniform tendrils with pointed tips, 10-13 micrometers in length, pale pink in color. In this case they can be identified as infectious agents of the following disease:

- A. Syphilis
- B. Trypanosomiasis
- C. Leptospirosis
- D. Relapsing fever
- E. Leishmaniasis

42. There are several cases of children from boarding school suffering from sore throat. Microscopy of tonsil smears stained according to Neisser method has revealed thin yellow bacilli with dark brown grains on their ends situated in the shape of the Roman numeral five. What infection can be suspected in this case?

- A. Diphtheria
- B. Infectious mononucleosis
- C. Listeriosis
- D. Tonsillitis
- E. Scarlet fever

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

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

44. A patient had been provisionally diagnosed with syphilis. A laboratory assistant took the blood serum for an immunologic test based on the detection of antibodies preventing the movement of treponemes and causing their death. What reaction was used to make the diagnosis?

- A.** Immobilization
- B.** Complement binding
- C.** Agglutination
- D.** Precipitation
- E.** Neutralization

45. A 50-year-old patient with hypertensive crisis had been administered magnesium sulfate, which led to abrupt decrease in blood pressure. The side effects of magnesium sulfate can be prevented if the following drug is administered:

- A.** Calcium chloride
- B.** Potassium chloride
- C.** Trilon B
- D.** Sodium bromide
- E.** Sodium sulfate

46. A schizophrenic patient has been prescribed aminazine. What pharmacodynamic action of this drug justifies its prescription in this case?

- A.** Antipsychotic
- B.** Antiemetic
- C.** Hypothermic
- D.** Muscle relaxant
- E.** Hypotensive

47. A patient has a slowly healing fracture. What medicine can be used to accelerate formation of connective tissue matrix?

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

48. A 17-year-old girl has attempted to commit suicide by overdosing on phenobarbital. Upon arrival at the site an emergency doctor urgently performed gastric lavage on the patient and introduced bemegride and solution of sodium hydrocarbonate intravenously. The doctor introduced sodium hydrocarbonate to:

- A.** Increase renal excretion of phenobarbital
- B.** Stimulate respiration
- C.** Normalise blood pressure
- D.** Inactivate phenobarbital
- E.** Wake up the patient

49. Genetic information is stored in DNA but does not participate directly in protein synthesis within DNA cells. What process ensures transfer of genetic information into polypeptide chain?

- A.** Translation
- B.** Formation of rRNA
- C.** Formation of tRNA
- D.** Formation of iRNA
- E.** Replication

50. A woman who had been consuming alcohol excessively during her pregnancy had a child with cleft palate and upper lip. These presentations are indicative of some chromosomal anomalies. What process do they result from?

- A.** Teratogenesis
- B.** Carcinogenesis
- C.** Mutagenesis
- D.** Phylogenesis
- E.** Ontogenesis

51. A 67-year-old patient has ordered a full functional denture. It was necessary to extract the left upper canine. After infraorbital anesthesia the patient presented with a progressing hematoma in the frontal part of the face. The patient was found to have an injury of an artery that is the branch of:

- A. *A. maxillaris*
- B. *A. facialis*
- C. *A. temporalis superficialis*
- D. *A. ophthalmica*
- E. *A. labialis superior*

52. A patient has sustained a traumatic injury of the greater pectoral muscle. This resulted in the decrease of:

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

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

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

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

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

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

- A. Ergocalciferol
- B. Retinol acetate
- C. Tocopherol acetate
- D. Menadione (Vicasolum)
- E. Thyroidin

56. During bacteriological examination

of the purulent discharge obtained from a postoperative wound an inoculation on meat infusion agar has been performed. The inoculation has resulted in large colorless mucous colonies that in 24 hours with exposure to sunlight developed green-blue pigmentation and smell of honey or jasmine. Bacterioscopy revealed gram-negative lophotrichea. What bacterial culture is contained in purulent discharge?

- A. *Pseudomonas aeruginosa*
- B. *Proteus vulgaris*
- C. *Klebsiella ozaenae*
- D. *Streptomyces griseus*
- E. *Brucella abortus*

57. Due to a stroke (cerebral hemorrhage) a patient has lost the ability of voluntary movement of the head and neck muscles. Brain examination revealed the hematoma to be situated within the genu of internal capsule. What conduction pathway is damaged?

- A. *Tr.cortico-nuclearis*
- B. *Tr.cortico-spinalis*
- C. *Tr.cortico-thalamicus*
- D. *Tr.cortico-fronto-pontinus*
- E. *Tr.thalamo-corticalis*

58. A woman presents with ovarian hyperaemia, increased permeability of the blood-follicle barrier with development of edema, infiltration of the follicle wall with segmental leukocytes. The follicle is large in volume. Its wall is thickened. The described situation is typical for the following period of the sex cycle:

- A. Preovulatory stage
- B. Ovulation
- C. Menstrual period
- D. Postmenstrual period
- E. Period of relative rest

59. The total number of leukocytes in the patient's blood is $90 \cdot 10^9/l$. Leukogram: eosinophils - 0%, basophils - 0%, juvenile - 0%, stab neutrophils - 2%, segmented neutrophils - 20%, lymphoblasts - 1%, prolymphocytes - 2%, lymphocytes - 70%, monocytes - 5%, Botkin-Gumprecht cells. Clinical examination revealed enlarged cervical and submandibular lymph nodes. Such clinical presentations are typical of the

following pathology:

- A. Chronic lympholeukosis
- B. Acute lympholeukosis
- C. Lymphogranulomatosis
- D. Infectious mononucleosis
- E. Chronic myeloleukosis

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

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

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

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

62. A patient with chronic hepatitis complains of increased sensitivity to barbiturates that previously induced no symptoms of intoxication. What hepatic function is disrupted and primarily responsible for such reaction in this patient?

- A. Metabolic
- B. Bilification
- C. Hemodynamic
- D. Hemopoietic
- E. Phagocytic

63. Having completed work in a laboratory, a student must tidy up the workspace, perform disinfection of the workbench and tools. What chemicals should be used for disinfection?

- A. Chloramine
- B. Hydrochloric acid
- C. Formalin
- D. Chloroform
- E. Ether

64. A histological preparation of cerebellum transverse section shows large number of multipolar neurons in the grey matter. What morphological feature allows to identify them as multipolar?

- A. Number of cellular processes
- B. Length of cellular processes
- C. Shape of axon terminals
- D. Shape of perikaryon
- E. Cell size

65. A patient is diagnosed with seborrheic dermatitis caused by vitamin H (biotin) deficiency. Observed is activity disruption of the following enzyme:

- A. Acetyl-CoA carboxylase
- B. Pyruvate decarboxylase
- C. Alcohol dehydrogenase
- D. Aminotransferases
- E. Carbamoyl phosphate synthetase

66. A 56-year-old woman is registered with a psychoneurologic dispensary due to her suffering from epilepsy, specifically, minor attacks (*pti mal*). What drug is the most efficient in this case?

- A. Sodium valproate
- B. Phenobarbital
- C. Trihexyphenidyl
- D. Levodopa
- E. Phenytoin

67. Glucose content of blood keeps at sufficient level after one week of starvation. Is it caused by activation of the following process:

- A. Gluconeogenesis
- B. Glycolysis
- C. Glycogenolysis
- D. Tricarboxylic acid cycle
- E. Glycogen phosphorolysis

68. A 60-year-old patient with a history of bronchial asthma has had several attacks during the day. What is the optimal drug to be used for attacks prevention?

- A. Salbutamol
- B. Isadrinum
- C. Adrenaline hydrochloride
- D. Dobutamine
- E. Methacinum

69. In the armpits of a patient there are small (1-1,5 mm), dorsoventrally flattened, wingless, blood-sucking insects. Their larvae developed in the armpits too. What disease is caused by these insects?

- A. Phthiriasis
- B. Sleeping sickness
- C. Chagas' disease
- D. Plague
- E. Relapsing fever

70. A student, who unexpectedly met his girlfriend, developed an increase in systemic arterial pressure. This pressure change was caused by the intensified realization of the following reflexes:

- A. Conditional sympathetic
- B. Conditional parasympathetic
- C. Conditional sympathetic and parasympathetic
- D. Unconditional parasympathetic
- E. Unconditional sympathetic

71. After the exposure to ionizing radiation a person was found to have a decreased blood granulocyte level. What mechanism underlies these changes?

- A. Leikopoiesis inhibition
- B. Increased passage of granulocytes into the tissues
- C. Autoimmune process development
- D. Increased disintegration of leucocytes
- E. Disrupted release of mature leukocytes from the bone marrow

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

73. A connective tissue preparation

stained with hematoxylin-eosin shows isogenous cell groups surrounded with basophilic intercellular substance. No fibrous structure can be detected. What type of connective tissue is it?

- A. Hyaline cartilage tissue
- B. Elastic cartilage tissue
- C. Dense fibrous tissue
- D. Loose fibrous tissue
- E. Splenial bone tissue

74. What factor results in maximal dilation of the gemomicrocirculatory pathway vessels and their increased permeability?

- A. Histamine
- B. Endothelin
- C. Vasopressin
- D. Noradrenaline
- E. Serotonin

75. A 46-year-old patient consulted an oculist about drooping of the upper eyelid. On examination he was diagnosed with a brain tumor. The pathological process must have affected the nuclei of the following pair of cranial nerves:

- A. III
- B. II
- C. IV
- D. VI
- E. VII

76. A 36-year-old patient consulted an ophthalmologist about eye ache. The examination revealed the erosion of the cornea, specifically, the lack of superficial and spinous layers of the epithelium. What cells will provide regeneration of the damaged epithelium?

- A. Cells of the stratum basale
- B. Cells of the stratum corneum
- C. Cells of the the stratum granulosum
- D. Cells of the stratum lucidum
- E. Cell of the stratum superficiale

77. On the 4th day of treatment with diclofenac sodium a 55-year-old patient has developed gastric hemorrhage due to an ulcer appearing on the gastric mucosa. Ulcerogenic action of this drug is caused by decreased secretion of:

- A. Prostaglandin E_2
- B. Leukotriene
- C. Prostaglandin E_1
- D. Cyclic endoperoxides
- E. Thromboxane

78. A 43-year-old woman complains of weight loss, hyperhidrosis, low-grade fever, increased irritability. She has been found to have hyperfunction of the sympathetic-adrenal system and basal metabolism. These disorders can be caused by hypersecretion of the following hormone:

- A. Thyroxine
- B. Somatotropin
- C. Corticotropin
- D. Insulin
- E. Aldosterone

79. During examination a patient presents with the following: hypertrophy and inflammation of lymphoid tissue, mucosa swelling between the arches of the soft palate. What tonsil is situated there?

- A. *Tonsilla palatina*
- B. *Tonsilla pharyngealis*
- C. *Tonsilla tubaria*
- D. *Tonsilla lingualis*
- E. -

80. Cytochemical investigation has revealed high content of hydrolytic enzymes in cytoplasm. This phenomenon indicates high activity of the following organelles:

- A. Lysosomes
- B. Centriole
- C. Endoplasmic reticulum
- D. Polysomes
- E. Mitochondria

81. A patient suffering from parkinsonism has been prescribed levodopa, which resulted in rapid improvement of the patient's condition. What mechanism of action is characteristic of this drug?

- A. Stimulation of dopamine synthesis
- B. Block of muscarinic receptors
- C. Stimulation of dopamine receptors
- D. Anticholinesterase action
- E. Stimulation of muscarinic receptors

82. A blood test was performed for a patient with allergic rhinitis. Blood

smear stained after Romanowsky reveals large number of cells with the following structure: segmented nucleus consists of 2-3 segments; cytoplasm is filled with bright-pink oxyphil granularity; granules are large. Name these cells:

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

83. For several days a 55-year-old woman has been suffering from pain attacks in the right upper quadrant after eating fatty foods. Visually, there is yellowness of sclera and skin. The patient has acholic stool, beer-colored urine. What substance present in the patient's urine causes its dark color?

- A. Conjugated bilirubin
- B. Ketone bodies
- C. Unconjugated bilirubin
- D. Stercobilin
- E. Bilirubin glucuronides

84. A patient with diabetes mellitus has been delivered to a hospital unconscious. BP is low, Kussmaul's respiration is observed, the smell of acetone can be detected from the patient's mouth. What mechanism is leading in the coma development in this case?

- A. Accumulation of ketone bodies in blood
- B. Accumulation of potassium ions
- C. Accumulation of sodium ions
- D. Accumulation of chlorine ions
- E. Accumulation of urea

85. A 45-year-old woman has addressed a doctor with complaints of rapid mood swings, tearfulness, apathy. Antidepressants prescribed for her treatment are monoamine oxidase inhibitors. These drugs have a certain effect on catecholamines, which results in their medicinal action. Name this effect:

- A. Increased concentration
- B. Increased deamination
- C. Decreased concentration
- D. Neutralization activation
- E. Inhibition of back transfer

86. Pupil dilation occurs when a person steps from a light room into a dark one.

What reflex causes such reaction?

- A. Sympathetic unconditioned reflex
- B. Sympathetic conditioned reflex
- C. Metasympathetic reflex
- D. Parasympathetic unconditioned reflex
- E. Parasympathetic conditioned reflex

87. A 49-year-old man with myocardial infarction has been admitted to a cardiology department. What changes in the peripheral blood cells are induced by the necrotic changes in the myocardium?

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

88. A patient with limb fracture should be prescribed a depolarizing muscle relaxant for brief surgical invasion. Name this drug:

- A. Dithylinum
- B. Tubocurarin chloride
- C. Cytisinum (Cytitonum)
- D. Atropine sulfate
- E. Azamethonium bromide (Pentaminum)

89. In the area that is the epicenter of the registered rabies cases among wild animals a 43-year-old man arrived at a clinic and claimed to have been bitten by a stray dog. He was given a course of anti-rabies vaccine. This preparation belongs to the following type of vaccines:

- A. Attenuated
- B. Inactivated
- C. Molecular
- D. Toxoids
- E. Synthetic

90. A 25-year-old man presents with tumorous growth situated in the area of the body of the maxilla, which results in face deformation. Biopsy material consists of fibrous tissue containing juvenile bone trabeculae, spindle and stellate cells. There is no clear margin between the normal bone tissue and lesion focus, capsule is absent. No pathologic changes can be detected in the other organs. Make the diagnosis:

- A. Simple fibrous dysplasia
- B. Osteoclastoma
- C. Odontogenic fibroma
- D. Osteosarcoma
- E. Ossifying fibroma

91. 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. Those congenital conditions result from the following influence:

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

92. A 40-year-old woman suffering from diffuse toxic goiter presents with constant increase of her body temperature. What mechanism results in such clinical presentation?

- A. Separation of oxidation and phosphorylation in cell mitochondria
- B. Increased breakdown of glycogen in hepatic cells
- C. Increased catabolism of protein in cells
- D. Increased excitability of nerve cells
- E. Increased cell sensitivity to catecholamines

93. A 19-year-old young man has been examined in a nephrological hospital. Increased potassium content was detected in secondary urine of the patient. Such changes have been most likely caused by the increased secretion of the following hormone:

- A. Aldosterone
- B. Oxytocin
- C. Adrenalin
- D. Glucagon
- E. Testosterone

94. A person with dental disease cannot always pinpoint the location of the affected tooth. What principle of excitatory diffusion in nerve centers causes such phenomenon?

- A. Irradiation
- B. Reverberation
- C. Occlusion
- D. Dominant
- E. Divergence

95. Injection of an anaesthetic before the tooth extraction resulted in development of anaphylactic shock accompanied by oliguria. What pathogenetic mechanism caused the decrease in diuresis in this case?

- A.** Decrease in hydrostatic pressure in the renal corpuscle capillaries
- B.** Increase in hydrostatic pressure in the Bowman's capsule
- C.** Damage of the glomerular filter
- D.** Increase in oncotic pressure of blood plasma
- E.** Increase in vasopressin secretion

96. A patient has vesicles on the mucous membrane of the oral cavity, lips and nose. A dentist suspected vesicular stomatitis. What analysis will allow to confirm the diagnosis?

- A.** Recovery of virus from the vesicular fluid
- B.** Allergy test
- C.** Recovery of bacteria from the vesicular fluid
- D.** Contamination of animals with the vesicular fluid
- E.** Microscopy of the vesicular fluid

97. A patient complains of toothache. On examination he has been diagnosed with pulpitis. Which factor played the main pathogenic role in the development of pain syndrome in this case?

- A.** Increased intratissular pressure in the dental pulp
- B.** Vasospasm
- C.** Inadequate stimulation of the mandibular nerve branch
- D.** Activation of one of the components of the complement system
- E.** Interleukin action

98. Periodontitis induces development of lipid peroxidation in the periodontal tissues, as well as increase in malondialdehyde and hydrogen peroxide concentration in the oral cavity. Which of the following enzymes provides antioxidant protection?

- A.** Catalase
- B.** Amylase
- C.** Maltase
- D.** Lactase
- E.** Invertase

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

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

100. On examination a patient was revealed to have a large amount of mucus accumulated in the nasal cavity. The mucus covers the mucosa and blocks the olfactory receptors. Where exactly are these receptors situated in a nasal cavity?

- A.** Superior nasal concha
- B.** Middle nasal concha
- C.** Inferior nasal concha
- D.** Common nasal meatus
- E.** -

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

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

102. A patient with symptoms of acute heart failure, namely pallor, acrocyanosis and rapid shallow breathing, has been delivered to an emergency department. Which of these drugs is indicated in this case?

- A.** Corglycon
- B.** Digitoxin
- C.** Cordiamine
- D.** Nitroglycerine
- E.** Adrenalin hydrochloride

103. After the transfusion of the concentrated red blood cells the patient

developed posttransfusion shock. What is the leading mechanism of the acute renal failure in this case?

- A. Glomerular filtration disorder
- B. Tubular reabsorption disorder
- C. Tubular secretion disorder
- D. Urinary excretion disorder
- E. Impairment of the renal incretory function

104. A victim of an earthquake has been remaining under debris for 7 days without food or water. What type of starvation is it?

- A. Complete
- B. Complete with continued hydration
- C. Quantitative
- D. Qualitative
- E. Incomplete

105. A 50-year-old patient has been referred for treatment of neck lymphadenitis. His individual penicillin sensitivity was tested. In 30 seconds full-body fever raised in the patient and his arterial blood pressure dropped to 0 mm Hg followed by cardiac arrest. Resuscitation was unsuccessful. Autopsy revealed acute venous hyperemia of viscera. Histological study revealed mast cells (tissue basocytes) degranulation in the skin (at the area of injections), myocardium and lungs. What kind of hypersensitivity reaction occurred in the patient?

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

106. A 78-year-old patient suffering from atherosclerosis has been delivered to a surgical ward with signs of acute abdomen. Laparoscopy revealed blackened and flaccid small intestine loops; demarcation line is not clear. Diagnose the changes that occurred in the patient's small intestine:

- A. Hemorrhagic infarction complicated with humid gangrene
- B. Hemorrhagic infarction complicated with dry gangrene
- C. Ischemic stroke complicated with humid gangrene
- D. Ischemic stroke complicated with dry gangrene
- E. -

107. A histological specimen of mandible of an embryo shows a tooth germ with the dental papilla made up of small stellate basophilic cells. What tissue forms this part of the tooth germ?

- A. Mesenchyme
- B. Epithelial
- C. Reticular
- D. Cartilaginous
- E. Osseous

108. During examination of a child's oral cavity a dentist noted the appearance of the first permanent molars on the child's lower jaw. How old is the child?

- A. 6-7
- B. 4-5
- C. 8-9
- D. 10-11
- E. 12-13

109. Examination of a 29-year-old patient revealed a dense, immobile, ill-defined tumor-like formation in the lower jaw. The overlying mucosa was pale. Biopsy of the neoplasm revealed osteoid structures lined with atypical osteoblasts; numerous pathologic mitotic figures; a great number of thin-walled vessels. What is the most likely diagnosis?

- A. Osteosarcoma
- B. Osteoblastoclastoma
- C. Exacerbation of chronic osteomyelitis
- D. Ameloblastoma
- E. Primary jaw carcinoma

110. Microscopic examination of a skin tumor revealed that it invaded the underlying tissue, destroyed it and formed nests and cords of atypical epithelium, which include pearl-like formations. Specify the tumor:

- A. Keratinizing squamous cell carcinoma
- B. Squamous cell non-keratinizing carcinoma
- C. Solid carcinoma
- D. Adenocarcinoma
- E. Medullary carcinoma

111. A child is 6 years old. The permanent teeth have started to take the place of the primary teeth. What teeth are the first to emerge?

- A. Lower first molars
- B. Lower first premolars
- C. Upper first premolars
- D. Upper medial incisors
- E. Lower canines

112. Histological examination of the myocardium of a 47-year-old patient with rheumatic heart disease (section material) revealed big visually empty vacuoles within the cardiomyocytes. They turn black, when stained with osmic acid, and yellow-red, when stained with sudan III. What pathological process is it?

- A. Adipose degeneration
- B. Hyaline droplet degeneration
- C. Hydropic degeneration
- D. Carbohydrate degeneration
- E. Dysproteinosis

113. A 38-year-old woman complains of bleeding gums, halitosis, exposure of tooth necks. Objectively: the patient has gingivitis, plaque and tartar. Inflammation involves the alveolar part of gingiva with dental pockets. The bone tissue exhibits signs of bone resorption. What pathology does the patient have?

- A. Parodontitis
- B. Periostitis
- C. Periodontitis
- D. Gingivitis
- E. -

114. Vestibular surface of the left lower incisor has a pink fungoid formation up to 2 cm large, which is fixed to the supra-alveolar tissue by a wide pedicle. Histological examination revealed branched capillary vessels with multiple hemorrhages and foci of hemosiderosis. What is the most likely diagnosis?

- A. Angiomatous epulis
- B. Fibrous epulis
- C. Giant cell epulis
- D. Gingival fibromatosis
- E. Cavernous hemangioma

115. Routine investigation of microbiological sanitary condition of air in a hospital is performed once in 3 months. What microorganism is the sanitary indicator of air condition in an enclosed space?

- A. *S.aureus*
- B. *E.coli*
- C. *E.faecalis*
- D. *P.aeruginosa*
- E. *C.perfringens*

116. In the course of evolution there developed molecular mechanisms for correction of damaged DNA molecules. This process is called:

- A. Reparation
- B. Transcription
- C. Translation
- D. Replication
- E. Processing

117. The patient's examination in a hospital specialised in diseases of nervous system has revealed absence of light-induced miosis. It is caused by the damage of the following brain structures:

- A. Vegetative nuclei of the 3rd pair of cranial nerves
- B. Red nuclei of mesencephalon
- C. Reticular nuclei of mesencephalon
- D. Hypothalamus nuclei
- E. Reticular nuclei of medulla oblongata

118. A doctor noted in the patient's case history, that the wound entry hole is situated in the submandibular triangle. What anatomical landmark binds this area?

- A. Lower jaw edge
- B. Neck midline
- C. *M.sternocleidomastoideus*
- D. *M.trapezius*
- E. *M.omohyoideus*

119. A patient during examination presents with prolongation of the II heart sound. The II heart sound occurs due to:

- A. Closure of semilunar valve
- B. Opening of semilunar valve
- C. Opening of mitral valve
- D. Opening of tricuspid valve
- E. Closure of tricuspid valve

120. A patient with pituitary tumor complains of increased daily diuresis (polyuria). Glucose concentration in blood plasma equals 4,8 mmol/l. What hormone can be the cause of this, if its secretion is disturbed?

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

121. A patient with heart failure and tachycardia has been prescribed digoxin. After 5 days of taking digoxin the patient's heart rate was normalized. After 2 weeks the patient addressed a doctor due to continuous decrease of heart rate down to 52/min. What phenomenon has caused such changes of heart rate?

- A. Cumulation
- B. Idiosyncrasy
- C. Tachyphylaxis
- D. Tolerance
- E. Allergy

122. A woman suffering from essential hypertension had suddenly lost consciousness; she was delivered to a resuscitation unit in a comatose state with the diagnosis of disturbed cerebral circulation. The patient died one day after her hospitalization. Autopsy revealed a cavity in the left hemisphere of the brain. The cavity is 5x4 cm in size and filled with blood clots and liquid blood. What hemorrhage is it according to the mechanism of its origin?

- A. Hemorrhage caused by vessel rupture
- B. Hemorrhage caused by vessel erosion
- C. Diapedetic hemorrhage
- D. Hemorrhagic extravasation
- E. Petechial hemorrhage

123. During AB0 blood grouping by using zoliclons (diagnostic monoclonal antibodies), hemagglutination did not occur with any of the zoliclons. What is the blood group of the patient under

examination?

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

124. Autopsy of a young man revealed lung cavities with inner walls made up of granulation tissue of varying degree of maturity, pronounced pneumosclerosis and bronchiectasis. Some cavities had caseation areas. What is your presumptive diagnosis?

- A. Fibrous cavernous tuberculosis
- B. Infiltrative tuberculosis
- C. Caseous pneumonia
- D. Acute cavernous tuberculosis
- E. Bronchiectasis

125. A 42-year-old woman has been administered propranolol for the ischemic heart disease. Yet she has been found to have a concomitant condition that renders propranolol to be contraindicated. What disease is it?

- A. Bronchial asthma
- B. Cholecystitis
- C. Arterial hypertension
- D. Duodenal ulcer
- E. Myasthenia

126. During exacerbation of peptic gastric ulcer disease a patient complains of heart pain. What vegetative reflex can cause these painful sensations?

- A. Viscerovisceral reflex
- B. Viscerodermal reflex
- C. Visceromotor reflex
- D. Dermatovisceral reflex
- E. Motor visceral reflex

127. A man submerged into the ice-cold water and died soon as a result of abrupt exposure to cold. In such cases an organism loses heat most intensively by the way of:

- A. Heat conduction
- B. Radiation
- C. Convection
- D. Heat conduction and radiation
- E. No correct answer

128. A person performs flexion-extension movements of the forearm

with the elbow resting on a table. What type of muscle contraction occurs in the *m.biceps brachii*?

- A. Isotonic
- B. Auxotonic
- C. Isometric
- D. Smooth muscle tetanus
- E. Serrated muscle tetanus

129. A patient is diagnosed with acute morphine hydrochloride poisoning. Choose the oxidant to be prescribed for gastric lavage:

- A. Potassium permanganate
- B. Chloramine
- C. Sulfocamphocainum (Procaine + Sulfocamphoric acid)
- D. Cerigel
- E. Chlorhexidine digluconate

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

- A. Phenocopy
- B. Mutation
- C. Recombination
- D. Heterosis
- E. Replication

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

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

132. A concerned mother addressed a pediatrician with complaints of her child suffering from frequent stomachaches, loss of appetite, nausea, constipation. Feces analysis detected rounded eggs with double capsules and oncospheres localized in their centers. The child was diagnosed with hymenolepiasis. Specify the type of infection transmission, considering that the invasion intensity was extremely high:

- A. Autoinvasion
- B. Alimentary
- C. Sexual
- D. Contamination
- E. Immediate contagion

133. Sulfanilamides are applied as antimicrobial agents in clinical practice. Sulfanilamide treatment, however, can result in hemolytic anemia development in patients that suffer from genetic defect of the following enzyme of pentose phosphate metabolism in erythrocytes:

- A. Glucose-6-phosphate dehydrogenase
- B. Hexokinase
- C. Transketolase
- D. Transaldolase
- E. Pyruvate kinase

134. An autopsy is performed on the body of a 58-year-old woman, who suffered from diabetes mellitus. On histological examination of kidneys the following was revealed: segmental homogenous oxyphilic deposits are detected in the glomerules; arteriole walls are diffusely thickened, homogenous, oxyphilic. Diagnose the morphologic changes that occurred in the renal glomerules and vessels:

- A. Hyalinosis
- B. Hyaline droplet degeneration
- C. Amyloidosis
- D. Mucoïd degeneration
- E. Fibrinoid degeneration

135. Under the influence of physical factors there can develop defects in a DNA molecule. Ultraviolet irradiation, for instance, can cause development of dimers. Dimers are two adjacent pyrimidine bases joined together. Name these bases:

- A. Thymine and cytosine
- B. Adenine and thymine
- C. Guanine and cytosine
- D. Adenine and guanine
- E. Guanine and thymine

136. For pain relief a patient has taken simultaneously a tablet of paracetamol and a tablet of diclofenac sodium. What type of drug interaction did the patient use for self-treatment?

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

137. Ketoacidosis that develops due to accumulation of ketone bodies in blood serum is a primary complication of diabetes mellitus. What acid-base disbalance develops during this condition?

- A. Metabolic acidosis
- B. Metabolic alkalosis
- C. Respiratory acidosis
- D. Respiratory alkalosis
- E. -

138. During auscultation a 26-year-old patient was asked to breathe deep. After 10 breaths the patient lost consciousness, which is associated with the development of the following condition:

- A. Respiratory alkalosis
- B. Carbon dioxide acidosis
- C. Erythropenia
- D. Polycythemia
- E. Reduced oxygen capacity of blood

139. When examining a patient presumptively diagnosed with food toxicoinfection, a doctor on duty has detected symptoms characteristic of botulism. The patient named the meals he ate the day before. What is the most probable cause of infection?

- A. Homemade canned meat
- B. Custard pastry from a private bakery
- C. Sour cream from a local dairy factory
- D. Strawberries from a suburban vegetable garden
- E. Fried eggs

140. A patient has an inflammation in the pterygopalatine fossa. The infection has spread into the nasal cavity. Which anatomical structure has the infection spread through?

- A. *Foramen sphenopalatinum*
- B. *Foramen rotundum*
- C. *Canalis palatinus major*
- D. *Canalis palatinus minor*
- E. *Canalis pterygoideus*

141. Phenylketonuria is a disease caused by a recessive gene that is localized in an

autosome. Parents are heterozygous for this gene. They already have two sons with phenylketonuria and one healthy daughter. What is the probability that their fourth child will have the disease too?

- A. 25%
- B. 0%
- C. 50%
- D. 75%
- E. 100%

142. A 32-year-old patient has B_2 hypovitaminosis. The specific symptoms such as epithelial, mucosal, skin and corneal lesions are the most likely to be caused by the deficiency of:

- A. Flavin coenzymes
- B. Cytochrome a1
- C. Cytochrome oxidase
- D. Cytochrome b
- E. Cytochrome c

143. A 40-year-old patient suffers from intolerance of dairy food products. This condition has likely developed due to insufficiency of the following digestive enzyme:

- A. Lactase
- B. Lipase
- C. Maltase
- D. Invertase
- E. Amylase

144. A patient has been diagnosed with severe B_{12} -deficient anemia with hemopoiesis. Anamnesis states total gastrectomy. What cells allow to confirm this diagnosis, if they are absent in the peripheral blood?

- A. Megalocytes
- B. Microcytes
- C. Ovalocytes
- D. Normocytes
- E. Anulocytes

145. In order to prevent wound infection associated with surgical procedures a patient was given a synthetic anti-protozoan drug with a high activity against *Helicobacter pylori*. Specify this drug:

- A. Metronidazole
- B. Doxycycline hydrochloride
- C. Chingamin
- D. Acyclovir
- E. Isoniazid

146. Roentgenologically confirmed an obstruction of common bile duct that prevents bile from inflowing to the duodenum. What process is likely to be disturbed?

- A. Fat emulgation
- B. Protein absorption
- C. Carbohydrate hydrolysis
- D. Hydrochloric acid secretion in stomach
- E. Salivation inhibition

147. A doctor examines a 17-year-old girl. The following is detected: pharyngitis, cervical lymphadenopathy, fever. The preliminary diagnosis is infectious mononucleosis. What method of investigation allows to confirm this diagnosis at the disease onset?

- A. Determining antibodies IgM to Epstein-Barr virus
- B. Microscopy of blood smear according to Giemsa method
- C. Determining antibodies IgG to Epstein-Barr virus
- D. Sabin-Feldman dye test
- E. Determining the amount of C-reactive protein

148. A 60-year-old patient has taken a drug to relieve angina pectoris attack; in several minutes the pain felt in the breastbone area abated, but it was followed by feeling of vertigo, headache, tinnitus, and hyperemia of face. What drug has the patient taken?

- A. Nnitroglycerine
- B. Validol
- C. Nifedipine
- D. Verapamil
- E. Amiodarone

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

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

150. A 13-year-old girl has been prescribed a certain drug for treatment of megaloblastic anemia. This drug stimulates a transfer from megaloblastic haemopoiesis to normoblastic, participates in synthesis of purine and pyrimidine bases, activates protein and methionine synthesis. What drug does the patient take?

- A. Cyanocobalamin
- B. Ferric sulfate
- C. Haemostimulinum
- D. Erythropoietin
- E. Rosehip tea

151. A patient in a grave condition has been delivered into an admission ward. Examination revealed pupil mydriasis, no reaction to the light, considerable reddening and dryness of skin and mucous membranes. What drug might have caused the intoxication symptoms?

- A. Atropine sulphate
- B. Proserin
- C. Adrenalin hydrochloride
- D. Pilocarpine hydrochloride
- E. Dithylinum

152. When examining a female patient a doctor observed the following: misshapen auricles, elevated palate, teeth growth disorder; mental retardation; no disruption of reproductive function. Provisional diagnosis is the "super woman" syndrome. Point out the karyotype of this disease:

- A. (47, XXX)
- B. (47, XXY)
- C. (47, YYY)
- D. (47, XYY)
- E. (45, X0)

153. Histological preparation of skin demonstrates dense unformed connective tissue. What layer of this organ is formed by such tissue?

- A. Reticular dermis
- B. Epidermis
- C. Papillary dermis
- D. Hypodermis
- E. Basal membrane

154. During ascent into mountains at the altitude of 5000 meters the group of climbers has developed the following complaints: dyspnea, increased heart rate, headache, vertigo, tinnitus. What is the cause of such symptoms?

- A. Hypoxemia
- B. Hypokalemia
- C. Hypothermia
- D. Erythropenia
- E. Leucopenia

155. As a result of an injury a child developed an abscess of the buccal adipose tissue. With time the process spread to the lateral surface of pharynx. Pus spread along the following fascia:

- A. Bucco-pharyngeal
- B. Temporal
- C. Masticatory
- D. Parotid
- E. -

156. The most common disease of economically developed countries is dental caries. Over 95% of population is afflicted with this disease. Carious demineralization of hard dental tissues is caused primarily by:

- A. Organic acids
- B. Malnutrition
- C. Extreme conditions
- D. Metabolic disorder
- E. Vitamin C deficiency

157. A patient has been administered conduction anesthesia with novocaine in preparation for tooth extraction. After the anesthesia administration the patient developed swelling and hyperemia around the injection site, skin itch, general fatigue, motor agitation. Name the developed complication:

- A. Allergy
- B. Idiosyncrasy
- C. Tachyphylaxis
- D. Drug dependence
- E. Inflammation

158. Due to a contusion suffered in a

traffic accident a patient has lost vision. Ophthalmoscopy revealed no changes of the eyeball. What artery is damaged in this case?

- A. Posterior cerebral artery
- B. Anterior cerebral artery
- C. Medial cerebral artery
- D. Ophthalmic artery
- E. Central retinal artery

159. During a foot trauma both cuboid and cuneiform bones have been crushed. As a result the foot must be amputated at the following joint:

- A. *Transversa*
- B. *Cuneonavicularis*
- C. *Tallocruralis*
- D. *Tarsimetatarsa*
- E. *Intermetatarsa*

160. Specify the calcium-binding enamel protein, which plays a significant part in carious destruction of enamel, when its function is disrupted:

- A. Amelogenin
- B. Calmodulin
- C. Osteocalcin
- D. Calcitonin
- E. Parotin

161. A patient has a skull fracture located in front of the foramen magnum. What bone is damaged?

- A. *Pars basilaris ossis occipitalis*
- B. *Pars lateralis ossis occipitalis*
- C. *Pars squamosa ossis occipitalis*
- D. *Pars squamosa ossis temporalis*
- E. *Pars petrosa ossis temporalis*

162. A 36-year-old patient underwent tooth extraction at a dental clinic. After two weeks the stratified squamous epithelium regenerated at the site of extraction. What organelles were involved in the restoration of the mucous membrane?

- A. Ribosomes
- B. Centrosomes
- C. Postlysosomes
- D. Smooth EPR
- E. Mitochondria

163. A 30-year-old patient after a case of viral hepatitis type B has developed complaints of continuous

nasal hemorrhages. What drug would be the most advisable for treatment of this condition?

- A. Menadione (Vicasolum)
- B. Nadroparin calcium (Fraxiparine)
- C. Folic acid
- D. Dipyridamol
- E. Asparcam

164. A patient is being prepared for a surgery - partial mandibular resection. What drug should be administered to decrease salivation?

- A. Atropine sulfate
- B. Carbacholine
- C. Armine
- D. Tubocurarin chloride
- E. Lobeline

165. A dentist has detected symptoms of parodontosis in a patient. What anti-protozoal drug should be prescribed?

- A. Metronidazole
- B. Levamisole
- C. Griseofulvin
- D. Mykoseptin
- E. Furazolidone

166. An oral surgery unit admitted a woman with a phlegmon on the anterior surface of neck in the region of carotid triangle. What muscle demarcates the posterior wall of this triangle?

- A. Sternocleidomastoid
- B. Thyrohyoid
- C. Sternohyoid
- D. Omohyoid
- E. Sternothyroid

167. When processing a molar tooth with a dental cutter a dentist has accidentally deeply wounded the patient's cheek and damaged not only the mucosa but also a muscle. Which muscle was injured?

- A. Buccal muscle
- B. Greater zygomatic muscle
- C. Masticatory muscle
- D. Orbicular muscle of the mouth
- E. Mylohyoid muscle

168. During microscopy of a renal biopsy material there are tubules revealed in the cortical substance. The tubules are approximately 60 micrometers in diameter; their wall consists of tall cuboi-

dal epithelium with pronounced apical frame and basal folds. Name these structures:

- A. Proximal tubules
- B. Distal tubules
- C. Capsule of renal corpuscle
- D. Collection duct
- E. Henle's loop

169. A man has developed downturning mouth and smoothed out nasolabial fold due to influenza complication. What nerve is damaged?

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

170. Calcification of dental tissues is significantly influenced by osteocalcin protein that can bind calcium ions due to the presence of the following modified amino acid residues in the polypeptide chain:

- A. γ -carbon glutamine
- B. Alanine
- C. γ -aminobutyric
- D. Carboxy asparagine
- E. δ -aminopropionic

171. A 65-year-old patient had been treated for 3 days in a resuscitation unit for a cardiac pathology. Suddenly he developed ventricular fibrillation that became the immediate cause of death of this patient. Microscopy of the left ventricular myocardium revealed a large focus of cardiomyocyte karyolysis demarcated by the zone of hyperaemia. What cardiac pathology was the cause of death?

- A. Acute myocardial infarction
- B. Ischemic myocardial degeneration
- C. Acute myocarditis
- D. Diffuse cardiosclerosis
- E. Postinfarction cardiosclerosis

172. To drain the oral cavity a dentist places a tampon between the cheek and the 2nd upper molar. This way secretion of the following salivary gland **WILL NOT** be able to accumulate in the oral cavity:

- A. Parotid gland
- B. Submandibular gland
- C. Sublingual gland
- D. Lingual gland
- E. Labial glands

173. Microscopy of an extracted tooth has revealed the following: odontoblasts and pulpocytes are decreased in size and number; thickened connective fibers of the pulp are stretched between the cells that remain. What general pathological process is likely to be occurring in the tooth pulp?

- A. Atrophy
- B. Adipose degeneration
- C. Amyloidosis
- D. Local hyalinosis
- E. Local hemosiderosis

174. 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. Vascular-platelet haemostasis
- C. -
- D. Fibrinolysis
- E. Clot retraction

175. During perfusion of an isolated heart of a mammal with a high ion content solution the cardiac arrest in diastole occurred. The cardiac arrest was caused by the following ions present excessively in the solution:

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

176. Which of the named below is the substrate of activated Christmas factor that takes part in blood coagulation?

- A. Factor X
- B. Vitamin K
- C. Fibrinogen
- D. Fibrin
- E. Thrombin

177. Students have been remaining for a long time in a badly ventilated room. They developed respiratory changes

caused by irritation of their peripheral chemoreceptors that react primarily to:

- A. Decrease of oxygen tension in arterial blood
- B. Increase of oxygen tension in arterial blood
- C. Decrease of carbon dioxide tension in arterial blood
- D. Increase of hydrogen ion concentration in arterial blood
- E. Decrease of hydrogen ion concentration in arterial blood

178. A 2-year-old child presents with mental development retardation, intolerance of proteins, severe hyperammonemia against the background of low blood urea content. This condition is caused by the congenital deficiency of the following mitochondrial enzyme:

- A. Carbamoyl phosphate synthetase
- B. Citrate synthase
- C. Succinate dehydrogenase
- D. Malate dehydrogenase
- E. Monoamine oxidase

179. A woman is diagnosed with Turner's syndrome (karyotype 45, X0). How many autosomal pairs would her somatic cells contain?

- A. 22
- B. 24
- C. 23
- D. 44
- E. 45

180. Corticosteroid analogues induce breakdown of muscle proteins into free amino acids. Under such conditions these amino acids become involved with the following processes:

- A. Gluconeogenesis in liver
- B. Glycolysis in muscles
- C. Synthesis of higher fatty acids
- D. Glycogenolysis
- E. Decarboxylation

181. Microscopy of an autopsy material sampled from lungs has revealed that alveolar lumen is filled with exudate consisting mostly of erythrocytes. What type of pneumonia is the most likely to be the cause?

- A. Influenza virus pneumonia
- B. Typhoid pneumonia
- C. Measles pneumonia
- D. Staphylococcal pneumonia
- E. Pneumococcal pneumonia

182. A patient diagnosed with acute respiratory failure has been administered artificial lung ventilation in the conditions of high partial oxygen pressure. This measure resulted in aggravation of the patient's condition and development of respiratory distress syndrome. Name the likely cause of this complication:

- A. Intense oxidation of lung surfactant
- B. Inflammatory process
- C. Fibrosis
- D. Atelectasis
- E. Pulmonary congestion

183. Parkinson's disease is caused by disrupted dopamine synthesis. What brain structure synthesizes this neurotransmitter?

- A. Substantia nigra
- B. Pallidum
- C. Quadrigeminal plate
- D. Red nuclei
- E. Hypothalamus

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

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

185. A 50-year-old man addressed a hospital with complaints of memory disorders, painful sensations along the nerve trunks, decreased mental ability, circulatory disorders and dyspepsia. Anamnesis states excessive alcohol consumption. What vitamin deficiency can result in such signs?

- A. Thiamine
- B. Niacin
- C. Retinol
- D. Calciferol
- E. Riboflavin

186. Specify the type of jaundice, during which there is no direct bilirubin in

blood, and urine urobilinogen level is high:

- A. Suprarenal
- B. Hepatic
- C. Subhepatic
- D. Mechanical
- E. -

187. After long-term antibiotic treatment a patient has developed whitish spots on the oral mucosa. Gram-positive oval budding cells were detected in the smear preparations. What causative agents were detected?

- A. Candida fungi
- B. Staphylococci
- C. Sarcinae
- D. Actinomycete
- E. Tetracocci

188. Indigenous population of Pamir has the following characteristic features: high rate of base metabolism, elongated tubular bones, wide rib cage, high blood oxygen capacity due to increased number of erythrocytes, high hemoglobin content. What type of ecological adaptation is it?

- A. Mountain
- B. Temperate
- C. Arctic
- D. Tropical
- E. Subtropical

189. A 30-year-old man died from electrocution. What was the cause of death?

- A. Central respiratory arrest
- B. Acute renal failure
- C. Acute respiratory failure
- D. Shock
- E. Internal hemorrhage

190. Chromosomal complement of a woman contains a chromosome with arms p and q of equal length. What morphological type does this chromosome belong to?

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

191. A patient with damaged muscles

of the lower limbs has been delivered to a first-aid center. What cells enable reparative regeneration of muscle fibers and restoration of muscle function?

- A. Myosatellitocytes
- B. Adipocytes
- C. Fibroblasts
- D. Endotheliocytes
- E. Plasmocytes

192. Patients suffering from xeroderma pigmentosum have extremely photosensitive skin due to disrupted excision repair. Specify the process that is affected in such patients:

- A. Repair of DNA molecule
- B. Synthesis of iRNA
- C. Maturation of iRNA
- D. Synthesis of protein primary structure
- E. Intron extraction and exon connection

193. A doctor has determined disruption of pain and temperature sensitivity of the mucosa of the anterior 2/3 of the patient's tongue. Gustatory sensitivity is retained. The patient suffers from the functional disorder of the following cranial nerve:

- A. Trigeminal nerve
- B. Hypoglossal nerve
- C. Facial nerve
- D. Vagus nerve
- E. Glossopharyngeal nerve

194. Significant amount of biogenic amines in body tissues can be subject to oxidative deamination due to the action of the following enzyme:

- A. Monoamine oxidase
- B. Transaminase
- C. D-amino acid oxidase
- D. Isomerase
- E. L-amino acid dehydrogenase

195. A victim has a deep incised wound in the area of external surface of the gonial angle. What muscle is damaged in this case?

- A. *M. masseter*
- B. *M. zygomaticus*
- C. *M. buccinator*
- D. *M. orbicularis oris*
- E. *M. depressor anguli oris*

196. Autopsy of the body of a 46-year-

old man, who had been suffering from typhoid fever and died of intestinal hemorrhage, has revealed sequestration areas, tissue rejection in the areas of lymphoid follicle clusters. What stage of typhoid fever is it?

- A. Dirty ulcers
- B. Healing
- C. Clean ulcers
- D. Brain-like swelling of the follicles
- E. Necrosis

197. During autopsy of the body of a patient, who had died due to heart failure, the following has been detected: myogenic dilatation of the heart left ventricle, microfocal cardiosclerosis, vasculitis, Aschoff bodies with disorganization of connective tissue, myocardosis. Make the diagnosis:

- A. Rheumatic productive myocarditis
- B. Rheumatic exudative myocarditis
- C. Cardiac infarction
- D. Systemic lupus erythematosus
- E. Myocardial ischemic dystrophy

198. A 30-year-old man addressed a doctor with complaints of enlarged submandibular lymph nodes. Anamnesis states that the patient previously had been treated for acute apical periodontitis of the 36th and 46th teeth. Histologically the following could be detected in the removed lymph node: hyperemia, edema, increased amount of plasmocytes and plasmablasts in the medullary area and germinal centers of follicles. What can cause such changes in lymph nodes?

- A. Antigenic stimulation
- B. Immunodeficiency state
- C. Metastasis of a malignant tumor
- D. Granulomatous inflammation
- E. Lymphoma

199. A 35-year-old woman complains of swollen neck. Subtotal thyroidectomy is performed. On histological examination of the removed part of the thyroid gland the following was detected: atrophy of parenchyma, moderate sclerosis development, diffuse infiltration by lymphocytes and plasma cells leading to formation of lymphatic follicles. What pathology has developed in the thyroid gland?

- A.** Hashimoto's thyroiditis
- B.** Follicular adenoma
- C.** Riedel's thyroiditis
- D.** Papillary carcinoma of the thyroid gland
- E.** Diffuse toxic goiter

200. A 12-year-old patient suffering from acute leukemia presents with fever up to $39,8^{\circ}C$, acute pain in the throat. Examination of the oral cavity has revealed swollen tonsils, their

surface is covered in deep lesions with uneven margins, numerous petechial hemorrhages in the pharyngeal mucosa and around the tonsils. Determine the type of tonsillitis that complicates the disease progress in this case:

- A.** Necrotic
- B.** Catarrhal
- C.** Fibrinous
- D.** Lacunar
- E.** Purulent

INSTRUCTIONAL BOOK

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List of abbreviations

A/G	Albumin/globulin ratio	HR	Heart rate
A-ANON	Alcoholics anonymous	IDDM	Insulin dependent diabetes mellitus
ACT	Abdominal computed tomography	IFA	Immunofluorescence assay
ADP	Adenosine diphosphate	IHD	Ischemic heart disease
ALT	Alanin aminotransferase	IU	International unit
AMP	Adenosine monophosphate	LDH	Lactate dehydrogenase
AP	Action potential	MSEC	Medical and sanitary expert committee
ARF	Acute renal failure	NAD	Nicotine amide adenine dinucleotide
AST	Aspartat aminotransferase	NADPH	Nicotine amide adenine dinucleotide phosphate restored
ATP	Adenosine triphosphate	NIDDM	Non-Insulin dependent diabetes mellitus
BP	Blood pressure	PAC	Polyunsaturated aromatic carbohydrates
bpm	Beats per minute	PAS	Periodic acid & Schiff reaction
C.I.	Color Index	pCO ₂	CO ₂ partial pressure
CBC	Complete blood count	pO ₂	CO ₂ partial pressure
CHF	Chronic heart failure	pm	Per minute
CT	Computer tomography	Ps	Pulse rate
DIC	Disseminated intravascular coagulation	r	Roentgen
DCC	Doctoral controlling committee	RBC	Red blood count
DM-2	Non-Insulin dependent diabetes mellitus	RDHA	Reverse direct hemagglutination assay
DTP	Anti diphtheria-tetanus vaccine	Rh	Rhesus
ECG	Electrocardiogram	(R)CFT	Reiter's complement fixation test
ESR	Erythrocyte sedimentation rate	RIHA	Reverse indirect hemagglutination assay
FC	Function class	RNA	Ribonucleic acid
FAD	Flavin adenine dinucleotide	RR	Respiratory rate
FADH ₂	Flavin adenine dinucleotide restored	S1	Heart sound 1
FEGDS	Fibro-esophago-gastro-duodenoscopy	S2	Heart sound 2
FMNH ₂	Flavin mononucleotide restored	TU	Tuberculin unit
GIT	Gastrointestinal tract	U	Unit
Gy	Gray	USI	Ultrasound investigation
GMP	Guanosine monophosphate	V/f	Vision field
Hb	Hemoglobin	WBC	White blood count
HbA1c	Glycosylated hemoglobin	X-ray	Roentgenogram
Hct	Hematocrit		
HIV	Human immunodeficiency virus		