

1. Carious cavities of a 29-year-old patient contain the parasitic protozoa. It is established 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. *Lamblia intestinalis*

2. In some areas of South Africa many people have sickle cell disease characterized by red blood cells that assume an abnormal sickle shape due to the substitution of glutamic acid for valine in the hemoglobin molecule. What is the cause of this disease?

- A. Gene mutation
- B. Disturbances of the mechanisms of genetic information transmission
- C. Crossing-over
- D. Genomic mutation
- E. Transduction

3. Examination of an 18-year-old girl revealed the following features: ovarian hypoplasia, broad shoulders, narrow hips, shortening of the lower extremities, webbed neck. Mental development is normal. The patient has been diagnosed with Turner's syndrome. What chromosomal abnormality does this patient have?

- A. Monosomy X
- B. Trisomy X
- C. Trisomy 13
- D. Trisomy 18
- E. Nullisomy X

4. Mother and father are healthy. Mother underwent amniocentesis for fetal karyotyping. The fetal karyotype turned out to be 45, XO. What syndrome can be expected in a newborn baby?

- A. Turner's
- B. Edwards'
- C. Patau's
- D. Cri du chat
- E. "Superwoman"

5. A physician collects the patient's history of the post-embryonic period of ontogenesis from birth to puberty. In

this case we are talking about:

- A. Juvenile period
- B. The first period of adulthood
- C. Senium
- D. The second period of adulthood
- E. Advanced age

6. Genealogical study of a family with hereditary enamel hypoplasia has revealed that the disease occurs in every generation. In women, the anomaly occurs more frequently than in men. Male patients only pass this trait to their daughters. What type of inheritance takes place in this case?

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

7. A 58-year-old male patient consulted an urologist about acute pain during urination and decreased amount of the excreted urine. Urolithiasis was suspected. The concretions are most likely to be found in the following part of the urethra:

- A. *Pars membranacea*
- B. *Pars prostatica*
- C. *Pars spongiosa*
- D. *Pars pelvina*
- E. *Pars intramuralis*

8. When examining the oral cavity of a 22-year-old patient, the dentist noticed a destroyed medial tubercle on the cutting edge of the right maxillary first molar. This tubercle is called:

- A. Paracone
- B. Metacone
- C. Mesocone
- D. Hypocone
- E. Protocone

9. A patient with inflammation of tongue mucosa (glossitis) complains of taste sensitivity disorder in the two anterior thirds of his tongue. This is caused by the damage of the following nerve:

- A. Tympanichord
- B. Tympanic
- C. Lesser petrosal
- D. Lingual
- E. Glossopharyngeal

10. As a result of injury of tongue a 32-year-old male had a heavy bleeding. The bleeding can be stopped by ligating an artery in the following topographic anatomic region (triangle):

- A. Pirogov's triangle
- B. Omoclavicular triangle
- C. Carotid triangle
- D. Omotrapezoid triangle
- E. Omotracheal triangle

11. The operative dentistry department admitted a newborn girl who choked during sucking. Examination revealed cleft palate arising from non-union of the middle frontal process and maxillary process of the I-st branchial arch. The cleft was located in the palate between:

- A. *Os incisivum et processus palatinus maxillae*
- B. *Processus palatinus maxillae dextrae et sinistrae*
- C. *Lamina horizontalis os palatinum dextrum et sinistrum*
- D. *Processus palatinus maxillae et lamina horizontalis os palatinum*
- E. *In the region of canalis incisivus*

12. A 39-year-old patient consulted a dentist about having a dry area of the oral mucosa beneath the tongue on the right. The dentist revealed a compression of chorda tympani as it exits to the right infratemporal fossa through the following fissura:

- A. *Petrotympánica*
- B. *Tympanomastoidea*
- C. *Petrosguamosa*
- D. *Sphenopetrosa*
- E. *Petroocipitalis*

13. A patient consulted a doctor about difficult chewing. On examination he was found to have the 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

14. A 36-year-old patient presents with periodontitis of the mandibular molar. It was found that inflammation had spread to the lymph nodes. What lymph nodes were the first to be involved in the inflammatory process?

- A. Submandibular
- B. Lateral cervical
- C. Anterior cervical
- D. Mental
- E. Facial

15. 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

16. A 33-year-old patient complains of an impairment of skin sensitivity in the medial part of the dorsal and palmar surface of hand. Which nerve is damaged?

- A. *N. ulnaris*
- B. *N. radialis*
- C. *N. medianus*
- D. *N. musculocutaneus*
- E. *N. cutaneus antebrachii medialis*

17. A 2-year-old child has congenital spastic contraction of muscles on one side of neck, that is torticollis. What muscle is affected?

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

18. The emergency department admitted a 48-year-old male with a blunt abdominal injury on the right and a suspected rupture of liver. Which

of these peritoneal structures can be expected to include blood accumulations?

- A. Rectovesical pouch
- B. Superior iliocecal recess
- C. Intersigmoidal recess
- D. Omental sac
- E. Left paracolic gutter

19. A histological specimen represents a structure of the oral cavity, which is formed by bone tissue. It is covered by mucous membrane consisting of keratinizing stratified squamous epithelium. The structure has fatty, glandular and marginal zone. In all parts of the lamina propria the collagen fibers form thick bundles that penetrate deep into the periosteum. What kind of structure is it?

- A. Hard palate
- B. Gingiva
- C. Lip
- D. Cheek
- E. Tongue

20. 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

21. In the histological specimen of a tooth germ the outer surface of the enamel organ is uneven, the cells of the inner layer show the reversal of polarity (inversion). These changes precede the beginning of the following process:

- A. Amelogenesis
- B. Dentinogenesis
- C. Pulp genesis
- D. Cementogenesis
- E. Periodont development

22. 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

23. A 68-year-old female patient with a history of glaucoma has increased intraocular pressure with normal secretion of aqueous humor by ciliary body. The inadequate outflow of fluid from the anterior chamber is associated with the damage to the following structure of the eyeball wall:

- A. Venous sinus
- B. Ciliary body
- C. Choroid
- D. Ciliary muscle
- E. Posterior corneal epithelium

24. The effect of some harmful factors caused focal damage to the gastric epithelium. What cells are responsible for its regeneration?

- A. Cervical mucocytes of glands
- B. Parietal exocrinocytes of glands
- C. Principal exocrinocytes of glands
- D. Endocrinocytes
- E. Mucocytes of the gland body

25. Microscopic examination of a CNS body revealed the gray matter with three layers of neurons, namely molecular, ganglionic and granular layer. What are the neurons constituting the second layer?

- A. Piriform
- B. Basket
- C. Small stellate
- D. Large stellate
- E. Granule cells

26. In a specimen from the ovary stained with hematoxylin-eosin a follicle can be seen. The follicular epithelial cells are arranged in 1-2 layers and have cubic shape, around the oocyte the bright red membrane can be seen. Specify the follicle:

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

27. A histological specimen represents a blood vessel. Its inner tunica is composed of endothelium, subendothelium and internal elastic lamina. The middle tunica is rich in smooth muscle cells. What vessel is characterized by these morphological features?

- A. Muscular artery
- B. Elastic artery
- C. Capillary
- D. Amuscular vein
- E. Muscular vein

28. Physical activity caused an increase in the cardiac output in a patient with a transplanted heart. What regulative mechanism is responsible for these changes?

- A. Catecholamines
- B. Sympathetic unconditioned reflexes
- C. Parasympathetic unconditioned reflexes
- D. Sympathetic conditioned reflexes
- E. Parasympathetic conditioned reflexes

29. Stimulation of the peripheral segment of *chorda tympani* in an experimental animal resulted in the discharge of the following secretion from the parotid salivary fistula:

- A. A lot of liquid saliva
- B. A small amount of liquid saliva
- C. There is no saliva
- D. A small amount of viscous saliva
- E. A lot of viscous saliva

30. An animal has been given a weak solution of hydrochloric acid introduced into the duodenum through a tube. Which hormone concentration will increase in the animal?

- A. Secretin
- B. Cholecystokinin (pancreozymin)
- C. Gastrin
- D. Glucagon
- E. Neurotensin

31. Examination of a patient with a

brain cortex injury revealed that he had lost the tactile sensitivity. What part of the cerebral cortex is damaged?

- A. Posterior central gyrus
- B. Occipital lobe
- C. Parietal lobe
- D. Frontal lobe
- E. Anterior central gyrus

32. In the experiment, the permeability of cell membrane for potassium ions has been increased. What changes can be expected in the membrane state?

- A. Hyperpolarization
- B. Depolarization
- C. Action potential
- D. Local response
- E. There will be no changes

33. A 36-year-old male patient has malabsorption of sodium ions from the intestinal lumen into blood. At the same time, absorption of the following substances **REMAINS UNCHANGED**:

- A. Fats
- B. Carbohydrates
- C. Proteins
- D. Water
- E. Chlorides

34. A 32-year-old female has gingivitis accompanied by gingival hypoxia. At the same time, the level of the following metabolite of carbohydrate metabolism is greatly increased in periodontal tissues:

- A. Lactate
- B. Ribose-5-phosphate
- C. Glycogen
- D. Glucose-6-phosphate
- E. NADPH

35. 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

36. Hormonal form of a certain vitamin induces genome level synthesis of *Ca*-

binding proteins and enterocytes thus regulating the intestinal absorption of  $Ca^{2+}$  ions required for dental tissue development. What vitamin is it?

- A.  $D_3$
- B. A
- C.  $B_1$
- D. E
- E. K

37. A 23-year-old patient with acute pulpitis has elevated body temperature and an increase in the WBC count up to  $14 \cdot 10^9/L$ . The leucogram is as follows: basophils - 0, eosinophils - 2, monocytes - 0, immature neutrophils - 4, stab neutrophils - 8, segmented neutrophils - 56, lymphocytes - 26, monocytes - 4. How can we interpret these changes in the white blood cells?

- A. Neutrophilia with a regenerative left shift
- B. Neutrophilia with a degenerative left shift
- C. Neutrophilia with a hyperregenerative left shift
- D. Lymphocytosis
- E. Neutrophilic leukocytosis with a right shift

38. A female patient with toxemia of pregnancy has hypersalivation resulting in a daily loss of 3-4 liters of saliva. What disorder of water-salt metabolism occurs in such cases?

- A. Hyperosmolar hypohydration
- B. Hypoosmolar hypohydration
- C. Isoosmolar hypohydration
- D. Hypokalemia
- E. Hyponatremia

39. A 39-year-old patient underwent hematologic tests. The following results were obtained: RBC-  $2,8 \cdot 10^{12}/L$ , Hb- 80 g/L, color index - 0,85, reticulocytes - 0,1%, platelets -  $160 \cdot 10^9/L$ , WBC -  $60 \cdot 10^9/L$ . Basophils - 2, eosinophils - 8, promyelocytes - 5, myelocytes - 5, immature neutrophils - 16, stab neutrophils - 20, segmented neutrophils - 34, lymphocytes - 5, monocytes - 5. What form of blood pathology are these results indicative of?

- A. Chronic myeloid leukemia
- B. Acute myeloid leukemia
- C. Hypoplastic anemia
- D. Undifferentiated leukemia
- E. Hemolytic anemia

40. 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

41. A 46-year-old patient with diabetes had been admitted to a hospital in grave precomatose condition. Study of the acid-base balance revealed metabolic acidosis. What is the primary mechanism that underlies the revealed changes of the acid-base balance?

- A. Incomplete oxidation of metabolism products
- B. Disturbance of  $O_2$  utilization by cells
- C. Disorder of blood buffer systems
- D. Urinary excretion of alkaline components
- E. Reduction of  $SO_2$  excretion

42. A 44-year-old patient with obstructive jaundice has been admitted to a hospital with the symptoms of cholemic syndrome. On the ECG arrhythmia shows up. What kind of arrhythmia is the patient most likely to have?

- A. Sinus bradycardia
- B. Sinus tachycardia
- C. Atrial premature contraction
- D. Ventricular premature contraction
- E. Atrioventricular block

43. A 28-year-old liquidator of Chernobyl disaster consulted a doctor about marked weakness, skin hemorrhages, diarrhea. Blood test results: ESR- 25 mm/h, RBC-  $2,4 \cdot 10^{12}/L$ , WBC -  $2,2 \cdot 10^9/L$ , platelets -  $70 \cdot 10^9/L$ . What stage of acute radiation

sickness are these presentations typical for?

- A. Manifest illness stage
- B. Prodromal stage
- C. Latent stage
- D. Recovery stage
- E. Outcome of the disease

44. In a 52-year-old patient with chronic glomerulonephritis, the glomerular filtration rate (GFR) was reduced by 20% compared to normal. What causes the decrease in GFR in patients with chronic renal failure?

- A. Reduced number of active nephrons
- B. Tubulopathy
- C. Obstruction of the urinary tract
- D. Renal ischemia
- E. Renal artery thrombosis

45. A 10-year-old child cut his leg with a piece of glass and was sent to a clinic for an anti-tetanus serum injection. In order to prevent the development of anaphylactic shock, the Besredka desensitization method was applied. What mechanism underlies this method?

- A. Binding to IgE fixed to mast cells
- B. Inhibited synthesis of mast cells mediators
- C. Stimulation of the immunological antigen tolerance
- D. Stimulation of antigen-specific IgG<sub>2</sub> synthesis
- E. Binding of IgE receptors on mast cells

46. Histologically, the internal wall of a maxillary cyst is lined with stratified squamous epithelium with underlying granulation tissue with infiltrating lymphocytes. The outer layer is represented by loose fibrous connective tissue surrounded by cicatricial fibrous tissue. What diagnosis can be made?

- A. Cystic granuloma
- B. Simple granuloma
- C. Epithelial granuloma
- D. Keratocyst
- E. Ameloblastoma

47. Examination of a patient revealed a hard palate tumor in form of a small dense gray node without clear

boundaries. Histological study of the tumor after its removal revealed the following peculiarities: the tumor was constituted by small cubic cells with hyperchromatic nucleus forming alveoli, trabeculae, solid and cribriform structures. The tumor growth could be characterized as invasive. Specify the tumor:

- A. Adenoid cystic carcinoma
- B. Malignant pleomorphic adenoma
- C. Mucoepidermoid carcinoma
- D. Adenolymphoma
- E. Monomorphic adenoma

48. 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 patient died 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. Gas embolism
- C. Drug-induced embolism
- D. Microbial embolism
- E. Thromboembolism

49. A patient underwent radiography that revealed numerous smooth-walled roundish defects in both jaws. Histological study revealed osteolysis and osteoporosis accompanied by the phenomena of poor bone formation. The patient's urine contained Bence-Jones protein. What is the most likely diagnosis?

- A. Multiple myeloma
- B. Chronic myelogenous leukemia
- C. Chronic erythroleukemia
- D. Acute myeloid leukemia
- E. Acute undifferentiated leukemia

50. A bacteriological laboratory studied the home-made dried fish which had caused a severe food poisoning. Microscopy of the culture grown on the Kitt-Tarozzi medium revealed microorganisms resembling a tennis racket. What is the most likely di-

agnosis?

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

**51.** 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 looking like 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*

**52.** 6 hours after the initial inoculation of water sample into 1% peptone water, the growth of a culture in form of a thin pellicle on the medium surface was registered. Such cultural properties are typical for the causative agent of the following disease:

- A. Cholera
- B. Plague
- C. Tuberculosis
- D. Dysentery
- E. Pseudotuberculosis

**53.** After the sanitary and bacteriological study of tap water the following results were obtained: the total number of bacteria in 1,0 ml was 80, coli index was 3. How would you interpret the study results?

- A. Water is safe to be consumed
- B. Water is of doubtful quality
- C. Water is of highly doubtful quality
- D. Water is contaminated
- E. Water is highly contaminated

**54.** Examination of a 27-year-old donor who had not donated blood for a long time revealed HBs antibodies detected by ELISA method. In this case, the positive ELISA results indicate that the donor:

- A. Had hepatitis B
- B. Has acute hepatitis B
- C. Has acute hepatitis C
- D. Has chronic hepatitis B
- E. Has chronic hepatitis C

**55.** 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 for the diagnosis?

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

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

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

**57.** A patient with arterial hypertension has developed a bronchial asthma attack. Which of the following bronchodilators may provoke a hypertensive crisis?

- A. Ephedrine hydrochloride
- B. Salbutamol
- C. Aminophylline
- D. Berotec
- E. Isadrine

**58.** A patient in a collaptoid state has been given an injection of mesatonum for the correction of blood pressure. What is the mechanism of this drug action?

- A. It stimulates  $\alpha$ -adrenergic receptors
- B. It stimulates  $\beta$ -adrenergic receptors
- C. It blocks  $\alpha$ -adrenergic receptors
- D. It blocks  $\beta$ -adrenergic receptors
- E. It stimulates  $\alpha$ - and  $\beta$ -adrenergic receptors

**59.** A 42-year-old female patient consulted a doctor about pain in the knee joints. Objectively there is swelling, redness, hyperthermia in the region of these joints. Laboratory testing revealed positive acute phase reactants. What drugs should be used to treat this patient?

- A.** Anti-inflammatory drugs
- B.** Narcotic analgesics
- C.** Antidepressants
- D.** Antibiotics
- E.** Sulfonamides

**60.** A paroxysm of tachycardia occurred in a patient undergoing a dental procedure. Which of the following drugs should be used to relieve it?

- A.** Verapamil
- B.** Isadrinum
- C.** Atropine
- D.** Dipheninum
- E.** Nitroglycerine

**61.** To perform a scheduled surgery on the upper jaw, a surgeon decided to apply ataralgesia. What medications are used for this manipulation?

- A.** Tranquilizers
- B.** General anesthetics
- C.** Narcotic analgesics
- D.** Non-narcotic analgesics
- E.** Sedatives

**62.** A 55-year-old male patient with acute heart failure has been administered a quick-relief cardiac glycoside. Which of the following drugs has been given to the patient?

- A.** Strophanthin
- B.** Adonisidum
- C.** Digitoxin
- D.** Celanid
- E.** Milrinone

**63.** Examination of the oral cavity of a 19-year-old patient revealed a small gap between the maxillary and mandibular incisors. There was no contact between the front teeth. Specify the type of occlusion in this patient:

- A.** Open occlusion
- B.** Orthognathia
- C.** Edge-to-edge occlusion
- D.** Closed bite
- E.** Prognathism

**64.** A 53-year-old patient with a long history of nephrolithiasis underwent nephrectomy. The kidney looks as 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

**65.** To prevent the seasonal influenza epidemics in the city hospitals, sanitary epidemic station gave orders to immunize health care workers. Which of the following preparations should be used for immunization?

- A.** Subunit vaccine
- B.** Interferon
- C.** Gamma-globulin
- D.** Rimantadine
- E.** Amantadine

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

- A.** 2,5 mmol/l
- B.** 3,3 mmol/l
- C.** 8,0 mmol/l
- D.** 10 mmol/l
- E.** 5,5 mmol/l

**67.** Following thyroid surgery, a 47-year-old female patient had fibrillary twitching of muscles in the arms, legs and face. These disorders can be treated by the introduction of the following hormone:

- A.** Parathyroid hormone
- B.** Triiodothyronine
- C.** Thyrotropin
- D.** Thyroxine
- E.** Thyroid-stimulating hormone

**68.** A 43-year-old patient is to be administered an antibiotic from the peni-



cillin group which would be resistant to penicillinase. What drug can be recommended?

- A. Oxacillin
- B. Amoxicillin
- C. Carbenicillin
- D. Azlocillin
- E. Ampicillin

69. A 49-year-old patient has psychotic manifestations in form of psychomotor agitation, auditory and visual hallucinations. What drug is indicated in the described case?

- A. Haloperidol
- B. Sodium bromide
- C. Diazepam
- D. Valerian tincture
- E. Chlordiazepoxide

70. A 58-year-old patient with essential hypertension complains about general health deterioration. She has been administered methyldopa. Specify the mechanism of this drug action:

- A. Inhibition of noradrenaline synthesis
- B. Increase in acetylcholine synthesis
- C. Blockade of  $\beta$ -adrenergic receptors
- D. Blockade of  $\alpha$ -adrenergic receptors
- E. Inhibition of angiotensin-converting factor

71. An animal sensitized with tuberculin had been administered tuberculin intraperitoneally. 24 hours later, during laparotomy, the animal was found to have venous congestion and peritoneal edema. Impression smears from the peritoneum contained a large number of lymphocytes and monocytes. What pathological process was detected in the animal?

- A. Allergic inflammation
- B. Serous inflammation
- C. Purulent inflammation
- D. Fibrinous inflammation
- E. Aseptic inflammation

72. A 42-year-old patient with tetanus developed an acute respiratory failure. What type of respiratory failure occurs in this case?

- A. Disregulatory impairment of alveolar ventilation
- B. Restrictive impairment of alveolar ventilation
- C. Obstructive impairment of alveolar ventilation
- D. Perfusion impairment
- E. Diffusion impairment

73. When students pass an exam, they often complain of having "dry mouth". The mechanism underlying the development of this condition is the activation of the following processes:

- A. Conditioned sympathetic
- B. Unconditioned parasympathetic
- C. Conditioned parasympathetic
- D. Unconditioned sympathetic
- E. Unconditioned peripheral

74. An injury to the occipital region resulted in apnoea. What could be the immediate cause of apnoea?

- A. Medulla oblongata injury
- B. Cerebellum injury
- C. Rupture between the mesencephalon and medulla oblongata
- D. Spinal cord rupture below the 5th vertebra
- E. Traumatic shock

75. A female with Rh-negative blood of A (II) type has a child with AB (IV) type who has been diagnosed with hemolytic disease resulting from Rh-conflict. What blood type may the baby's father have?

- A. III (B), Rh-positive
- B. I (0), Rh-positive
- C. II (A), Rh-positive
- D. IV (AB), Rh-negative
- E. III (B), Rh-negative

76. Calcification of the intercellular substance of bone tissue is accompanied by the deposition of hydroxyapatite crystals along the collagen fibers. This process requires the presence of alkaline phosphatase in the intercellular substance. What cell produces this enzyme?

- A. Osteoblast
- B. Osteocyte
- C. Osteoclast
- D. Chondroblast
- E. Chondrocyte

77. A 30-year-old patient with pneumonia has been administered a 3-day course of an antibiotic from the group of azalides that has bactericidal effect, prolonged action, the ability to bind to phagocytic cells and accumulate in the infection foci. What drug has been administered?

- A. Azithromycin
- B. Erythromycin
- C. Benzylpenicillin sodium salt
- D. Isoniazid
- E. Ciprofloxacin

78. Human X chromosome contains a dominant gene that is responsible for normal blood clotting. An autosomal dominant gene plays a similar role. Lack of any of these genes leads to the coagulation disorder. The form of interaction between these genes is called:

- A. Complementarity
- B. Epistasis
- C. Polymerism
- D. Codominance
- E. Pleiotropy

79. A 66-year-old male patient has liver carcinoma with syndrome of portal hypertension. What kind of portal hypertension does the patient have?

- A. Intrahepatic
- B. Suprahepatic
- C. Subhepatic
- D. Combined
- E. -

80. A 25-year-old patient with a hereditary enzymopathy (Gilbert's disease) has a disorder of bilirubin conjugation in liver. What enzyme is not synthesized in this patient?

- A. UDP-glucuronyl transferase
- B. UDP-glucose pyrophosphorylase
- C. UDP-glycogen transferase
- D. Ornithine carbomoyltransferase
- E. Amidophosphoribosyltransferase

81. 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 their prevention?

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

82. A 39-year-old patient with pyelonephritis has been found to have hyposthenuria combined with polyuria. According to this data, what process is most likely to be disrupted?

- A. Tubular reabsorption
- B. Glomerular filtration
- C. Tubular secretion
- D. Tubular excretion
- E. -

83. A patient with a toxic paralysis of the respiratory center has been repeatedly administered cordiamine for the center stimulation. What side effect may occur?

- A. Clonus
- B. Tonic convulsions
- C. Arrhythmia
- D. Collapse
- E. Bronchospasm

84. A 12-year-old child is of short stature, has disproportionate body structure and mental retardation. These characteristics might be caused by the hyposecretion of the following hormone:

- A. Thyroxine
- B. Insulin
- C. Cortisol
- D. Somatotropin
- E. Glucagon

85. A 48-year-old female patient with a history of cholelithiasis has recurring steatorrhea. What vitamin deficiency may develop as a complication of the current disease?

- A. K
- B. B<sub>6</sub>
- C. C
- D. PP
- E. B<sub>12</sub>

**86.** Transfusion of Rh-incompatible blood resulted in hemolytic jaundice development in the patient. What laboratory blood value confirms this type of jaundice?

- A. Accumulation of unconjugated bilirubin
- B. Reduction of unconjugated bilirubin
- C. Accumulation of urobilinogen
- D. Reduction of stercobilin
- E. Reduction of conjugated bilirubin

**87.** 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

**88.** A 36-year-old patient consulted an ophthalmologist about eye ache. The examination revealed the erosion of the cornea, that is 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

**89.** A 57-year-old patient with coronary artery disease has been administered an anti-anginal agent that activates guanylate cyclase and accumulates myocardial cGMP. What drug is it?

- A. Isosorbide mononitrate
- B. Dipyridamole
- C. Panangin
- D. Validol
- E. Verapamil

**90.** A 43-year-old female 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

**91.** Examination of a patient revealed glycosuria and hyperglycemia. He complains of dry mouth, itchy skin, frequent urination, thirst. He has been diagnosed with diabetes mellitus. What is the cause of polyuria in this patient?

- A. Increased urine osmotic pressure
- B. Decreased plasma oncotic pressure
- C. Increased filtration pressure
- D. Decreased cardiac output
- E. Increased plasma oncotic pressure

**92.** A histological specimen represents the parenchyma composed of lymphoid tissue which forms the diffusely arranged lymph nodules with a central artery. What anatomic formation has the given morphological structure?

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

**93.** Ultrasonography of a pregnant revealed no abnormalities in the cardiovascular system of the fetus, the ductus arteriosus had a normal function. What vessels does it connect?

- A. Pulmonary trunk and aorta
- B. Pulmonary trunk and superior vena cava
- C. Pulmonary trunk and inferior vena cava
- D. Umbilical vein and aorta
- E. Umbilical vein and umbilical artery

**94.** As a result of treatment of viral RNA with nitrous acid, UCA triplet mutated to UGA triplet. What kind of mutation occurred?

- A. Transition
- B. Nucleotide deletion
- C. Missense
- D. Nucleotide insertion
- E. Inversion

95. A 46-year-old patient consulted a doctor about pustular rash on the skin of the limbs. What antiseptic should be administered to the patient?

- A. Alcohol solution of iodine
- B. Insulin
- C. Prednisolone
- D. Sibazon
- E. Heparin

96. A 1-year-old child with the symptoms of affection of limb and trunk muscles had been admitted to a hospital. Examination revealed muscle carnitine deficiency. The biochemical basis of this pathology is a disruption of the following process:

- A. Transport of fatty acids to mitochondria
- B. Regulation of  $Ca^{2+}$  level in mitochondria
- C. Substrate phosphorylation
- D. Utilization of lactic acid
- E. Oxidative phosphorylation

97. For several days a 55-year-old female patient has had pain attacks in the right upper quadrant after eating fatty foods. Visually, there is yellowness of sclera and skin. The patient has acholous 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

98. One of the means of regulating enzyme activity in a human body is the covalent modification. Glycogen phosphorylase and glycogen synthetase activity is regulated by the following type of covalent modification:

- A. Phosphorylation-dephosphorylation
- B. ADP-ribosylation
- C. Methylation
- D. Hydrolysis
- E. Sulfonation

99. A 23-year-old patient with diabetes has hyperglycemia at the rate of 19 mmol/l which is clinically manifested by glucosuria, polyuria, polydipsia. Which of the listed below mechanisms is responsible for the development of glycosuria?

- A. Exceedence of glucose renal threshold
- B. Non-enzymatic glycosylation of proteins
- C. Polyuria
- D. Polydipsia
- E. Tissue dehydration

100. A 25-year-old patient got an injury as a result of which a portion of the nail plate was removed. What structures will be responsible for its restoration?

- A. Nail matrix
- B. Nail fold
- C. Eponychium
- D. Subungual space
- E. Nail sinus

101. Experimental stimulation of the peripheral segment of the vagus nerve of a cat will result in the following changes:

- A. Decreased heart rate
- B. Increased heart rate
- C. Dilated pupils
- D. Increased respiratory rate
- E. Bronchiectasis

102. Arterial pH is 7,4; primary urine - 7,4; final urine - 5,8. Decrease in the pH of final urine is the result of the secretion of the following ions in the nephron tubules:

- A. Hydrogen ions
- B. Potassium ions
- C. Hydrogen carbonate ions
- D. Urea
- E. Creatinine

103. A 49-year-old male patient with myocardial infarction has been admitted to the 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

**104.** Alterations in protein digestion in the small intestine are induced by the impairment of trypsin and chymotrypsin activity. What enzyme deficiency may be the cause of this impairment?

- A. Enterokinase
- B. Pepsin
- C. Amylase
- D. Maltase
- E. Lipase

**105.** Monoamine oxidase inhibitors are widely used in clinics as psychopharmacological drugs. They change the level of the following neurotransmitter in the synapses:

- A. Norepinephrine
- B. Acetylcholine
- C. ATP
- D. Substance P
- E. L-glutamate

**106.** In the area being the epicenter of the registered rabies cases among wild animals a 43-year-old man presented to a clinic and claimed to have been bitten by a stray dog. He was given a course of anti-rabies vaccine. This preparation relates to the following type of vaccines:

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

**107.** During examination of a 3-month-old infant a pediatrician revealed that the baby's oral mucosa and tongue were covered with a thick white deposit. In the material taken from the affected site a bacteriologist revealed the presence of yeast fungi giving the reasons for suspecting a fungal infection which occurs most often in children

of this age, namely:

- A. Candidiasis
- B. Favus
- C. Epidermophytosis
- D. Actinomycosis
- E. Trichophytia

**108.** A boy has been diagnosed with a hydrocele (fluid collection within the scrotum). Which scrotum tunica contains this liquid?

- A. Tunica vaginalis
- B. Tunica dartos
- C. Tunica albuginea
- D. External spermatic fascia
- E. Internal spermatic fascia

**109.** Examination of a 6-year-old patient gave reasons to suspect the deterioration in airway patency. What is the most reliable research method to identify the pathology?

- A. Pneumotachometry
- B. Pneumography
- C. Spirometry
- D. Spirography
- E. Spirometabolography

**110.** A 24-year-old patient with catarrhal tonsillitis has been administered a drug from the group of sulfonamides. Specify the mechanism of sulfonamide antibacterial action:

- A. Competitive antagonism of PABA
- B. Disruption of the cell wall protein synthesis
- C. Reduction of membrane permeability
- D. Inhibition of sulfhydryl groups of thiol enzymes
- E. Protein coagulation

**111.** A 39-year-old patient with arthritis of the temporomandibular joint has been administered diclofenac sodium. It must be kept in mind that the side effect of prolonged use of this drug is:

- A. Ulcerogenicity
- B. Teratogenicity
- C. Ototoxicity
- D. Carcinogenicity
- E. Drug dependence

**112.** A 36-year-old injured has an occi-

pital bone injury causing damage to the sigmoid sinus. What part of the bone is damaged?

- A. *Pars lateralis*
- B. *Clivus*
- C. *Pars basilaris*
- D. *Squama*
- E. -

**113.** A 40-year-old patient presents with abdominal pain, frequent loose stools with mucus and blood. Stool analysis revealed vegetative forms of some protozoa sized 30-40 microns, with short pseudopodia, containing large amounts of phagocytosed erythrocytes. What protozoan disease does the patient have?

- A. Amebiasis
- B. Leishmaniasis
- C. Trichomoniasis
- D. Giardiasis
- E. Toxoplasmosis

**114.** A 49-year-old male has mitral stenosis. What is the leading mechanism of heart failure in this case?

- A. Pressure overload
- B. Volume overload
- C. Myocardial tension
- D. Myocardial injury
- E. Fluid overload

**115.** A 42-year-old patient has an inflammation of the inner ear. After the examination, the doctor revealed the affection of the first neuron bodies of the auditory analyzer. Where are they localized?

- A. *G. spirale*
- B. *G. vestibulare*
- C. *G. geniculi*
- D. *G. trigeminale*
- E. *G. ciliare*

**116.** Orthodontic treatment of a child proved to be ineffective due to the chronic mouth breathing since the nasal breathing is impaired. This is caused by the hypertrophy of the following tonsils:

- A. Pharyngeal
- B. Tubal
- C. Lingual
- D. Palatine
- E. Palatine and tubal

**117.** A 34-year-old patient has a history of periodontitis. As a result of increased collagen degradation, there is a significantly increased urinary excretion of one of the amino acids. Which one?

- A. Hydroxyproline
- B. Valine
- C. Alanine
- D. Glycine
- E. Serine

**118.** A 34-year-old injured is unable to nod his head (impaired flexion and extension of head). This is caused by the dysfunction of the following joint:

- A. Atlanto-occipital
- B. Lateral atlanto-axial
- C. Median atlanto-axial
- D. Zygapophysial
- E. -

**119.** A 35-year-old patient had a cerebral injury that caused a hemorrhage in the region of the medial surface of the frontal gyrus and cingulate gyrus. What artery supplies blood to the area of the hemorrhage localization?

- A. Anterior cerebral
- B. Median cerebral
- C. Basilar
- D. Posterior cerebral
- E. Anterior communicating

**120.** Osteolaterism is characterized by a decrease in collagen strength caused by much less intensive formation of cross-links in the collagen fibrils. This phenomenon is caused by hypoactivity of the following enzyme:

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

**121.** In some anaerobic bacteria the pyruvate produced by glycolysis

is converted to the ethyl alcohol (alcoholic fermentation). What is the biological significance of this process?

- A. NAD<sup>+</sup> replenishment
- B. Lactate production
- C. ADP production
- D. Providing the cells with NADPH
- E. ATP production

**122.** A 36-year-old female patient who has been limiting the number of foodstuffs in her diet for 3 months presents with a decrease in body weight, deterioration of physical and mental health, face edemata. These changes may be caused by the deficiency of the following nutrients:

- A. Proteins
- B. Vitamins
- C. Fats
- D. Carbohydrates
- E. Micronutrients

**123.** A 29-year-old patient with bacterial pneumonia has been administered penicillin. What is the mechanism of its antimicrobial action?

- A. Inhibition of cell walls synthesis in the microorganisms
- B. Inhibition of intracellular protein synthesis
- C. Inhibition of cholinesterase activity
- D. Inhibition of SH-groups of microorganism enzymes
- E. Antagonism of PABA

**124.** Vitamin-like substance choline is contained in phospholipids which are the main components of biological membranes. What sulphur-containing amino acid serves as the donor of methyl groups for the synthesis of choline?

- A. Methionine
- B. Serine
- C. Glycine
- D. Alanine
- E. Threonine

**125.** During anesthesia of the oral mucosa a 37-year-old patient has had anaphylactic reaction (widespread vasodilation, increased vascular permeability with liquid exiting the blood vessels and penetrating in the ti-

ssues). What type of hypersensitivity reaction occurred in the patient?

- A. Type I (anaphylactic)
- B. Type II (antibody-dependent)
- C. Type III (immune complex)
- D. Type IV (cell cytotoxicity)
- E. Type V (granulomatosis)

**126.** Patients with erythropoietic porphyria (Gunther's disease) have teeth that fluoresce red on exposure to ultraviolet light; photosensitive skin; red urine. This disease is associated with the lack of the following enzyme:

- A. Uroporphyrinogen-III cosynthase
- B. Uroporphyrinogen-I synthase
- C. Delta-aminolevulinate synthase
- D. Uroporphyrinogen decarboxylase
- E. Ferrochelatase

**127.** A 36-year-old patient with a several year history of chronic pulpitis had undergone tooth extraction. Microscopic examination of the pulp revealed some deep-purple structureless areas which can be interpreted as:

- A. Dystrophic calcification
- B. Metabolic calcification
- C. Metastatic calcification
- D. Lithiasis
- E. Dental tartar

**128.** A 34-year-old patient underwent a tooth extraction. The tooth crown was of diamond shape and had four tubercles on the masticatory surface, the tooth had three roots. What tooth was extracted?

- A. The first maxillary molar
- B. The first mandibular molar
- C. Second maxillary molar
- D. The third maxillary molar
- E. The second mandibular molar

**129.** 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

**130.** Microscopic examination of a skin tumor revealed that it invaded the underlying tissue, destroyed it and formed nests and cords of atypical epithelium which included some 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

**131.** A 38-year-old female patient 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. -

**132.** A 9-year-old child has multiple lesions of the oral mucosa in form of small painful hyperemic sores with a white deposit in the center; enlarged and painful submandibular lymph nodes. Microscopic examination of the affected region revealed a superficial defect covered by fibrin; edematous and hyperemic submucosa with inflammatory infiltration. What is the most likely diagnosis?

- A. Aphthous stomatitis
- B. Hypertrophic stomatitis
- C. Herpetic stomatitis
- D. Catarrhal gingivitis
- E. -

**133.** A 38-year-old female patient has been diagnosed with inflammation

of the third branch of the trigeminal nerve. This branch exits the skull through the following foramen:

- A. Oval
- B. Round
- C. Spinous
- D. Jugular
- E. Sphenotic

**134.** After restoration of maxillary incisors with artificial crowns a 44-year-old female was found to have a brownish overgrowth in form of a node of 15 mm in diameter. Histological study revealed that under the stratified squamous epithelium of gingiva there was a connective tissue mass with numerous sinusoidal vessels, oval-shaped mononuclear cells forming osteoid substance, and polynuclear giant cells that destroyed the alveolar ridge of the upper jaw. What is the most likely diagnosis?

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

**135.** In patients with glycogenolysis, that is von Gierke's disease, the conversion of glucose-6-phosphate into glucose is inhibited, which is accompanied by the improper breakdown of glycogen in the liver. The cause of this condition is the following enzyme deficiency:

- A. Glucose-6-phosphatase
- B. Glycogen phosphorylase
- C. Glucose-6-phosphate dehydrogenase
- D. Phosphofructokinase
- E. Phosphoglucomutase

**136.** What vitamin is a component of glutamic acid decarboxylase, participates in the production of GABA, and its deficiency is manifested by seizures?

- A. Pyridoxine
- B. Cobalamin
- C. Tocopherol
- D. Folic acid
- E. Ascorbic acid

**137.** A patient under examination is in a stage of rapid eye movement sleep. This is confirmed by the following waves



registered by EEG:

- A. Beta waves
- B. Alpha waves
- C. Delta waves
- D. Theta waves
- E. Alpha spindles

**138.** A 48-year-old patient has been found to have an increase in the concentration of thyroid hormones in blood. Microscopy of a biopsy sample from the thyroid gland is likely to reveal the following morphological changes affecting the following cells:

- A. Increase in the thyrocyte height
- B. Decrease in the thyrotrope height
- C. Decrease in the parathyrocyte size
- D. Decrease in the thyrocyte height
- E. Changes in hormone concentrations will have no effect on the morphology of the thyroid gland cells

**139.** During AB0 blood grouping by using coliclons (diagnostic monoclonal antibodies), haemagglutination did not occur with any of the coliclons. What is the blood group of the patient under examination?

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

**140.** During reproduction of some RNA-containing viruses that cause tumors in animals, genetic information can be transmitted in the opposite direction from the RNA to the DNA via a specific enzyme. The enzyme of reverse transcription is called:

- A. Reverse transcriptase
- B. DNA polymerase
- C. Ligase
- D. Primase
- E. Topoisomerase

**141.** In a hot weather, the microclimate in hot rooms is often normalized by fans. At the same time heat radiation from the human body increases through:

- A. Convection
- B. Heat conduction
- C. Conduction
- D. Radiation
- E. Evaporation

**142.** After arriving in the polar region, researchers from Australia have complained of nervous disorders, loss of appetite, aggravation of chronic diseases for 6 months. What process has been disrupted in extreme conditions?

- A. Adaptation
- B. Tolerance
- C. Tachyphylaxis
- D. Stress
- E. Reparation

**143.** A female who had been continuously taking antibiotics for an intestinal infection developed a complication manifested by inflammation of the oral mucosa and white deposit. Bacteriological study of the deposit samples revealed yeast fungi *Candida albicans*. Which of the following medications is indicated for the treatment of this complication?

- A. Fluconazole
- B. Biseptol
- C. Tetracycline
- D. Furazolidone
- E. Polymyxin

**144.** A histological specimen of submandibular salivary gland represents basket cells from which some processes radiate and embrace the secretory unit. Contraction of the processes of these cells helps in expelling secretions from the lumen of secretory units and moving them to the system of excretory ducts. Name these cells:

- A. Myoepithelial cells
- B. Serous cells
- C. Mucocytes
- D. Adipocytes
- E. Epithelial cells

**145.** After an infectious disease a 21-year-old patient exhibits the inability to rotate his head in the direction opposite to the affected region. What nerve has been damaged?

- A. Accessory
- B. Vagus
- C. Infrascapular
- D. Transverse cervical nerve
- E. Thoracodorsal

**146.** The surgically excised connective tissue of the deformed mitral valve gives a basophilic reaction when stained with hematoxylin and eosin. When stained with toluidine blue, it turns purple (metachromasia). What changes of the connective tissue can be detected by these reactions?

- A. Muroid edema
- B. Fibrinoid necrosis of connective tissue
- C. Connective tissue edema
- D. Petrification
- E. Hyalinosis

**147.** An animal had been intensively fed with carbohydrates. Histological examination of its liver revealed a significant number of glycogen granules. Glycogen relates to the following group of cell structures:

- A. Trophic granules
- B. Secretory granules
- C. Excretory granules
- D. Pigment granules
- E. Special-purpose organelles

**148.** If a trait is determined mostly by genetic factors, the percentage of concordance between the twins is much higher in monozygotic twins than in dizygotic ones. What is the percentage of blood group concordance in monozygotic twins?

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

**149.** 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

**150.** A 49-year-old patient has a tumor of the ventral surface of the pons. An impaired blood flow will be observed in the following artery:

- A. *A. basilaris*
- B. *A. carotis interna*
- C. *A. cerebri media*
- D. *A. cerebri anterior*
- E. *A. communicans posterior*

**151.** Pyruvic acid as an intermediate metabolite of carbohydrate, lipid and amino acid metabolism can undergo oxidative decarboxylation. The cause of this process is the lack of the following nutrient in the diet:

- A. Thiamin
- B. Pyridoxine
- C. Ascorbic acid
- D. Citrine
- E. Pangamic acid

**152.** In case of some helminthiases, an affected person can detect helminth himself because mature segments of the causative agent are able to crawl out of the anus. This is typical for the following disease:

- A. Beef tapeworm infection
- B. Pork tapeworm infection
- C. Hymenolepiasis
- D. Bothriocephaliasis
- E. Echinococcosis

**153.** A patient has an inflammation in the pterygopalatine fossa. The infection has spread to the nasal cavity. What anatomic structure has the infection penetrated through?

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

**154.** Histological examination of a tissue sample revealed that the tissue had no blood vessels, and the cells were packed tightly together making layers.

Specify this tissue:

- A. Epithelial
- B. Cartilaginous
- C. Osseous
- D. Nervous
- E. Muscular

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

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

**156.** A 24-year-old injured has a fracture in the middle third of the II rib. The fracture is accompanied by the dysfunction of the following muscle:

- A. *M. scalenus posterior*
- B. *M. sternocleidomastoideus*
- C. *M. sternohyoideus*
- D. *M. scalenus medius*
- E. *M. subclavius*

**157.** Diphtheria exotoxin had been treated with 0,3-0,4% formalin and kept in a thermostat for 30 days at a temperature of  $40^{\circ}C$ . What preparation was obtained as a result of these manipulations?

- A. Anatoxin
- B. Antitoxin
- C. Diagnosticum
- D. Therapeutic serum
- E. Diagnostic serum

**158.** Examination of a 28-year-old patient with hepatocerebral degeneration revealed an impairment of ceruloplasmin synthesis. This defect is associated with the following organelles:

- A. Granular endoplasmic reticulum
- B. Smooth endoplasmic reticulum
- C. Mitochondria
- D. Lysosomes
- E. Golgi complex

**159.** In the uterine cavity an embryo was found that was not attached to the endometrium. What stage of

embryonal development is it?

- A. Blastocyst
- B. Zygote
- C. Mulberry body
- D. Neurula
- E. Gastrula

**160.** A 31-year-old patient has deep caries of the fifth maxillary tooth on the right. Acute purulent inflammation in the region of the tooth apex has developed. There is marked edema with isolated neutrophils in the perifocal tissues and soft tissues of cheek and palate. Diagnose the pathologic process in the soft tissues of cheek and palate:

- A. Acute serous inflammation
- B. Acute suppurative periodontitis
- C. Acute suppurative periostitis
- D. Phlegmon
- E. -

**161.** Microscopy of a dental plaque revealed a large number of cocci arranged in pairs and strings, as well as Gram-positive bacilli which were likely to be the cause of cariogenesis. What microorganism associations are involved in the development of dental caries?

- A. *S.mutans* streptococci and lactobacilli
- B. *S.salyvarius* streptococci and lactobacilli
- C. *S.mutans* streptococci and corynebacteria
- D. *S.aureus* and lactobacilli
- E. *S.salyvarius* streptococci and enterococci

**162.** Autopsy of a dead man with no fixed abode revealed the aneurysm of the ascending aorta. Microscopy of the middle tunica of aorta revealed lymphocytic inflammatory infiltrates, plasma cells, fibroblast cells with some Pirogov-Langhans cells, endovasculitis. What disease should be suspected?

- A. Syphilis
- B. Atherosclerosis
- C. Rheumatism
- D. Essential hypertension
- E. Tuberculosis

**163.** A man visited Lebanon. Soon after

return he felt pain and heaviness in the perineum and suprapubic region. On examination he was diagnosed with urogenital schistosomiasis. In what way could he become infected?

- A. By swimming in contaminated waters
- B. By eating unwashed fruit and vegetables
- C. By eating insufficiently salted fish
- D. By eating undercooked meat of cattle
- E. By eating undercooked meat of crayfish and crabs

**164.** Loose fibrous connective tissue of salivary glands contains oval average-sized cells which synthesize antibodies. The cells have round eccentric nucleus and "spoke-wheel" chromatin pattern made by small clumps of chromatin. What are these cells called?

- A. Plasma cells
- B. Adipocytes
- C. Neutrophils
- D. Fibroblasts
- E. Macrophages

**165.** A physician performs the anterior transverse cervical skin incision for urgent tracheotomy. He should keep in mind the probability of damaging the following vessel:

- A. *Arcus venosus juguli*
- B. *V.jugularis externa*
- C. *V.jugularis interna*
- D. *V.facialis*
- E. *V.thyroidea media*

**166.** A 12-year-old girl has a bleeding ulcer 5 mm in diameter which is localized on the mouth floor. The ulcer is surrounded by bright-red tissue that turns white when pressed. Microscopic examination of a biopsy sample reveals a tumor constituted by a number of large cavities filled with blood. The cavities are lined with endothelial cells. Between the cavities there is stroma represented by the loose connective tissue. What is the most likely diagnosis?

- A. Ulcerated cavernous hemangioma
- B. Secondary rhabdomyosarcoma
- C. Squamous cell non-keratinizing carcinoma
- D. Osteoblastoclastoma
- E. Ulcerated melanoma

**167.** For the treatment of periostitis a 35-year-old patient should be administered an antibiotic with a high ability to penetrate into the bone tissue. Specify this drug:

- A. Doxycycline hydrochloride
- B. Streptomycin
- C. Erythromycin
- D. Chloramphenicol
- E. Kanamycin

**168.** A patient with a severe maxillofacial trauma has been delivered to the emergency department. What drug should be given this patient to relieve pain shock?

- A. Promedol
- B. Sydnocarb
- C. Ibuprofen
- D. Pantogam
- E. Mydocalm

**169.** After using a toothpaste a 27-year-old patient has developed Quincke's edema. Administer a drug from the group of histamine H1-receptor antagonists for the treatment of this condition:

- A. Dimedrol
- B. Paracetamol
- C. Digoxin
- D. Chlorpromazine
- E. Analgin

**170.** A 47-year-old patient with symptoms of severe intoxication and respiratory failure died. A section of lung tissue had a mottled pattern with multiple small focal hemorrhages and foci of emphysema. Histological examination revealed hemorrhagic bronchopneumonia accompanied by abscess; the cytoplasm of bronchial epithelial cells had eosinophil and basophil inclusions. According to the section analysis, make your diagnosis:

- A. Influenza
- B. Adenovirus infection
- C. Parainfluenza
- D. Respiratory syncytial
- E. Staphylococcal bronchopneumonia

**171.** A 64-year-old male patient died with symptoms of acute cardiovascular failure. Autopsy results: the section of the anterior wall of the left ventricle showed a yellowish flaccid 1,5-2 cm focus surrounded by a reddish rim. The convoluted coronary arteries had lumen irregularly narrowed by 75%. The vessel intima was thickened, dense, covered with whitish plaques, crunched when cut. What disease can you think of?

- A. Acute myocardial infarction
- B. Continuously recurrent myocardial infarction
- C. Postinfarction cardiosclerosis
- D. Microfocal cardiosclerosis
- E. Recurrent myocardial infarction

**172.** During an abdominal surgery a 46-year-old patient working at a meat processing plant was found to have a very dense roundish formation 11 cm in diameter which was localized in the right lobe of the liver. The cross-section of the formation has a porous appearance due to a large number of small vesicles with layers of dense connective tissue. The surrounding tissues have visible necrotic areas and proliferation of granulation tissue including many eosinophils and foreign body giant cells. What disease can be thought of in this case?

- A. Echinococcus multilocularis
- B. Malaria
- C. Hepatitis
- D. Hepatic rhabdomyosarcoma
- E. Calculous cholecystitis

**173.** During a hypertensive crisis a patient has had a hemorrhagic stroke resulting in a lack of voluntary movements, increased tendon reflexes and muscle tone of the left arm and leg. What is this motor dysfunction called?

- A. Hemiplegia
- B. Paraplegia
- C. Tetraplegia
- D. Monoplegia
- E. Flaccid paralysis

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

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

**175.** A 23-year-old patient consulted an oculist about vision impairment. Visual activity was corrected by means of lenticular lenses. Specify the type of dysfunction of the visual analyzer in this patient:

- A. Hyperopia
- B. Myopia
- C. Daltonism
- D. Night-blindness
- E. Astigmatism

**176.** A 36-year-old patient had had a traumatic brain injury which caused a swallowing impairment. Which part of brain was affected?

- A. Medulla oblongata
- B. Mesencephalon
- C. Diencephalon
- D. Reticular formation
- E. Thalamus

**177.** A 42-year-old patient with gastric ulcer has a disbalance between the aggressive and defensive factors. Which of the following factors contributes to the development of gastric ulcer?

- A. Helicobacter pylori
- B. Mucin
- C. Hydrocarbonate
- D. Prostaglandin
- E. Prostacyclin

**178.** A 45-year-old patient with an 8-year history of tuberculosis died in a hospital of chronic renal failure. At autopsy, the kidneys were enlarged,

the cross-section surface looked greasy, histological study revealed profuse deposits of structureless homogeneous eosinophilic masses exhibiting marked metachromasia when stained with Congo red. What pathological process developed in the kidneys?

- A. Secondary amyloidosis
- B. Hematogenous renal tuberculosis
- C. Acute glomerulonephritis
- D. Toxic nephritis against the background of antibiotic therapy
- E. Nephrosclerosis

**179.** Autopsy of a dead 6-year-old child revealed a marked edema of the soft tissues of neck and enlarged tonsils. Pharyngeal mucosa was covered with numerous dense whitish-yellow pellicles exposing deep ulcers after their removal. Histological examination of the pharyngeal mucosa revealed necrosis of the upper epithelial layers, impregnation of the mucous membrane with the fibrinous exudate and moderate leukocyte infiltration. What infectious disease caused the death of the child?

- A. Diphtheria
- B. Parainfluenza
- C. Scarlet fever
- D. Whooping cough
- E. Measles

**180.** A severe injury in a 36-year-old patient resulted in a significant blood loss which was accompanied by a blood pressure drop. What hormones provide rapid recovery of blood pressure after the blood loss?

- A. Adrenalin, vasopressin
- B. Cortisol
- C. Sex hormones
- D. Oxytocin
- E. Aldosterone

**181.** Calcification of dental tissues is significantly influenced by osteocalcin protein which has an ability to bind calcium ions due to the presence of the following modified amino acid residues in the polypeptide chain:

- A. Gamma-carbon glutamine
- B. Alanine
- C. Gamma-aminobutyric
- D. Carboxy asparagine
- E. Delta-aminopropionic

**182.** A 47-year-old male patient consulted a dentist about difficult mouth opening (lockjaw). The patient has a history of a stab wound of the lower extremity. What infection can be manifested by these symptoms?

- A. Tetanus
- B. Brucellosis
- C. Whooping cough
- D. Anaerobic wound infection
- E. Tularemia

**183.** In the solution being used for perfusing the isolated heart of rat, the  $K^+$  concentration has been increased to 8 mmol/L. What changes in the heart are to be expected?

- A. Diastolic arrest
- B. Systolic arrest
- C. Heart force increase
- D. Heart rate increase
- E. There will be no changes

**184.** After a patient had taken a blocking agent, his heart rate (HR) increased. Pressing on the eyeballs didn't result in the expected reflectory decrease in heart rate. What exactly was blocked by the drug in the pacemaker cells?

- A. M-cholinergic receptors
- B.  $\alpha_1$ -adrenergic receptors
- C.  $\beta$ -adrenergic receptors
- D.  $Ca^{2+}$ -L-type channels
- E. Fast  $Na^+$  channels

**185.** A 36-year-old male patient frequently has herpes sores on the lips and oral mucosa. Infection recurrences are associated with the persistence of the virus in the body. The herpes simplex virus is most likely to reside in:

- A. Nerve ganglia
- B. Salivary glands
- C. Lymph nodes
- D. Airway epithelium
- E. Gonads

**186.** A 32-year-old patient undergoing dental examination was found to

have some rash-like lesions resembling secondary syphilis in the oral cavity. The patient was referred for the serological study with the purpose of diagnosis confirmation. In order to detect antibodies in the serum, living *Treponema* were used as diagnosticum. What serological test was performed?

- A. Immobilization
- B. Neutralization
- C. Complement binding
- D. Precipitation
- E. Passive hemagglutination

**187.** A 69-year-old male patient got a small plaque with subsequent ulceration on the skin of the lower eyelid. The formation was removed. Microscopic examination of dermis revealed complexes of atypical epithelial cells arranged perpendicularly to the basal membrane on the periphery. The cells were dark, of polygonal prismatic shape with hyperchromic nuclei with a high mitotic rate. What is the histological form of carcinoma in this patient?

- A. Basal cell carcinoma
- B. Keratinizing squamous cell carcinoma
- C. Nonkeratinizing squamous cell carcinoma
- D. Adenocarcinoma
- E. Undifferentiated

**188.** A 35-year-old female patient has HIV at the AIDS stage. On the skin of the lower extremities and palatine mucosa there appeared rusty red spots, bright red nodules of various sizes. One of the nodules was taken for histological study. It revealed a lot of randomly distributed thin-walled vessels lined with endothelium, the bundles of spindle cells containing hemosiderin. What kind of tumor developed in the patient?

- A. Kaposi's sarcoma
- B. Hemangioma
- C. Burkitt's lymphoma
- D. Lymphangioma
- E. Fibrosarcoma

**189.** A dentist examined a 5-year-old boy and found him to have a saddle nose, high-arched palate, natiform skull. Both front maxillary incisors are peg-shaped and have a crescent-shaped

notch in the cutting edge. Lymph nodes are not changed. What is the provisional diagnosis?

- A. Late congenital syphilis
- B. Early congenital syphilis
- C. Tertiary syphilis
- D. Fluorosis
- E. Rickets

**190.** A 36-year-old injured with a knife wound of neck has bleeding. The blood is dark. During the wound management it was revealed that a vessel in the anterior part of the neck below the hyoid bone was damaged. Identify this vessel:

- A. *V. jugularis anterior*
- B. *V. jugularis interna*
- C. *A. carotis externa*
- D. *A. carotis communis*
- E. *V. jugularis externa*

**191.** ECG of a 46-year-old patient shows an increase in the QRS duration. This might be caused by:

- A. Increased ventricular activation time
- B. Conduction disturbances in the AV node
- C. Increased atrial excitability
- D. Increased atrial and ventricular excitability
- E. Increased atrial activation time

**192.** A 36-year-old patient has gastric ulcer (with increased acidity). Which of the listed below drugs will reduce the secretion of hydrochloric acid with a minimum of side effects?

- A. Famotidine
- B. Atropine
- C. Pirenzepine
- D. Almagel
- E. -

**193.** A histological specimen represents an organ whose wall consists of the mucosa, submucosa, fibrocartilage and adventitious cartilage. The organ is lined by pseudostratified ciliary epithelium, the muscular layer of the mucosa is absent, the submucosa contains seromucous glands. Hyaline cartilage C-rings are present. What organ has the described morphological characteristics?

- A. Trachea
- B. Bronchiole
- C. Secondary bronchus
- D. Terminal bronchiole
- E. Larynx

**194.** A 28-year-old patient complains of frequent gingival haemorrhages. 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. Fibrinolysis
- D. Clot retraction
- E. -

**195.** A patient with alcohol-induced liver injury has an impairment of biotransformation of xenobiotics and endogenous toxic compounds. These changes are likely to be caused by hypoactivity of the following chromoprotein:

- A. Cytochrome P-450
- B. Hemoglobin
- C. Cytochrome oxidase
- D. Cytochrome b
- E. Cytochrome c1

**196.** A 4-year-old child has purulent inflammation of the middle ear. The pathological process has spread to the artery that borders the anterior wall of the tympanic cavity. What vessel is involved in the pathological process?

- A. *A. carotis interna*
- B. *A. carotis externa*
- C. *A. meningea media*
- D. *A. auricularis posterior*
- E. *A. temporalis superficialis*

**197.** Activation of free radical processes is a universal mechanism that triggers cell death. What inhibitors of

this process should be administered as a part of therapeutic interventions intended for the treatment of generalized periodontitis?

- A. Tocopherol, ascorbate
- B. Riboflavin, pyridoxine
- C. Calciferol, naphthoquinone
- D. Thiamin, folate
- E. Cobalamin, pantothenic acid

**198.** Microscopic examination of the biopsy sample taken from a deformed upper jaw bone revealed areas of bone resorption and replacement of bone tissue by randomly arranged bundles of mature collagen fibers with spindle and stellate cells; primitive structure of trabeculae; myxomatous foci. What is the most likely diagnosis?

- A. Fibrous osteodysplasia
- B. Osteoma
- C. Osteoblastosarcoma
- D. Osteoporosis
- E. Osteosarcoma

**199.** A 35-year-old patient complains of pain in the upper jaw, bleeding, a slight loosening of teeth. He has been diagnosed with periodontitis. What is a typical pathological process in this case?

- A. Inflammation
- B. Bleeding
- C. Caries
- D. Pain
- E. Redness

**200.** With the purpose of analgesia, a narcotic analgesic has been used with a benzodiazepine drug. What drug has been used to potentiate analgesia?

- A. Diazepam
- B. Chlorprothixene
- C. Triftazin
- D. Carbamazepine
- E. Imizinum