After a collision of two cars, one of the drivers presents with a deformity in the middle third of the left shin. The driver feels extreme pain that exacerbates on attempts to move it. The ends of a broken bone protrude from the open wound, the bone is triangular on section, movements cause the bleeding to intensify. What bone was damaged?
Tibia
Femur
Talus
Patella
Fibula

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

A patient presents with acute onset of the disease: high fever and enlarged painful spleen. On the 10th day since the onset the patient developed a maculopapular rash on the abdomen. On the 21st day the patient died of peritonitis. Postmortem study of the body shows deep ulcers in the area of necrotic aggregate lymphoid follicles (Peyer's patches) in the ileum of the deceased. One of the ulcers is perforated and diffuse fibrinopurulent peritonitis is observed. What disease can be suspected in this case?
Typhoid fever
Dysentery
Cholera
Salmonellosis
Intestinal amebiasis

Autopsy of an 86-year-old woman, who suffered from cerebral atherosclerosis, shows atrophy of her cerebral cortex. Name this type of atrophy based on its cause:
Insufficient blood supply
Dysfunctional
Caused by physico-chemical factors
Pressure-induced
Neurogenic

An autopsy of a 42-year-old man, who suffered from chronic diffuse bronchitis and died of cardiopulmonary failure, shows large hyperinflated lungs that cover mediastinum with their edges. The lungs do not deflate, are colored pale gray, crunch on section; lung surface does not straighten out when pressed with a finger, resulting

in a permanent depression. Mucopurulent exudate is produced from the bronchial lumen. What is the most likely diagnosis?
Chronic diffuse obstructive emphysema
Primary idiopathic emphysema
Vicarious compensatory emphysema
Chronic focal emphysema
Interstitial emphysema

Autopsy of a man with tuberculosis has revealed a 3x2 cm large cavity in the superior lobe of the right lung. The cavity was communicating with a bronchus, its wall was dense and consisted of three layers: the internal layer was pyogenic, the middle layer was made of tuberculous granulation tissue, and the external one was made of connective tissue. What is the most likely diagnosis?
Fibrous cavernous tuberculosis
Tuberculoma
Acute cavernous tuberculosis
Acute focal tuberculosis
Fibrous focal tuberculosis

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

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

A 23-year-old man developed a perforation in his hard palate, a dense formation with clear margins was detected in this area. After a surgery, microscopy of the excised formation shows there a large focus of caseous necrosis surrounded with a granulation tissue with endovasculitis and a cellular infiltration consisting of

lymphocytes and epithelioid cells with predominance of plasma cells. What is the most likely disease in this case?
Syphilis
Sarcoma
Leprosy
Tuberculosis
Scleroma

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

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

Oral examination revealed dark yellow and brown spots and stripes on the labial and lingual surfaces of the patent's teeth; more than the half of the dental surface is affected; enamel and dentin are destroyed. What diagnosis is the most likely?
Fluorosis
Dystrophic calcification
Dental calculus
Metastatic calcification
Cuneiform defect

Mother of a 4-year-old child complains that the child developed elevated body temperature, tenesmus, diarrhea, and abdominal pain attacks. The child attends a preschool facility. Laboratory analysis detected mucus and blood admixtures in the child's feces. Name the changes that occur in the gastrointestinal tract during dysentery:
Colitis
Gastroenteritis

Enterocolitis
Gastritis
Enteritis

During autopsy of the patient, who died of cardiovascular failure, the patient's right foot is darkly colored. The vessels of the patient's thigh are partially obstructed by grayish-red clots. On the vessel walls there are yellowish-gray spots and fibrous plaques, some of which are of stony density. What clinicopathological type of atherosclerosis was complicated in the patient?
Atherosclerosis of lower extremities
Atherosclerosis of aorta
Cerebral atherosclerosis
Vascular intestinal atherosclerosis
Renal atherosclerosis

A 35-year-old man had been suffering from bronchial asthma for a long time. Eventually he developed a status asthmaticus that became lethal. Examination of section materials shows a bronchiolar spasm in the lungs. The bronchiolar walls show signs of cellular infiltration with predominance of eosinophilic leukocytes and lymphocytes, labrocytes with signs of degranulation are observed. What mechanism of hypersensitivity is the cause of these changes?
Reaginic reaction
Immune complex
-
Cell-mediated cytotoxicity
Antibody-dependent

Examination of a tooth shows that there is a large cavity in its crown. The floor of the cavity consists of thin layer of softened dentin that separates the cavity from the pulp. What is the most likely diagnosis?
Deep caries
Periodontitis
Superficial caries
Median caries
Pulpitis

After a tooth extraction, the patient developed acute heart failure. What drug should be prescribed in this case?
Strophanthin
Adonisid
Cordigitum
Digitoxin
Convallaria majalis tincture

To treat ischemic heart disease, a patient was prescribed a beta-adrenergic blocking agent. After a time he developed a cough and bronchospasm. What drug can cause these side effects?
Anaprilin (Propranolol)
Atenolol
Talinolol
Phenihidine (Nifedipine)
Metoprolol

A child with signs of rickets has been prescribed a certain liposoluble vitamin drug by the pediatrician and dentist. This drug affects the metabolism of phosphorus and calcium in the body and facilitates calcium accumulation in bone tissue and dentin. If its content in the body is insufficient, a person develops disorders of ossification process, dental structure, and occlusion. Name this drug:
Ergocalciferol
Thyroidin
Tocopherol acetate
Retinol acetate
Menadione (Vicasolum)

A patient with signs of anxiety, fear, uncertainty, and mental strain was prescribed diazepam. What mechanism of tranquilizing action can be observed in this case?
Interaction with benzodiazepine receptors
Interaction with cholinergic receptors
Interaction with dopamine receptors
Interaction with serotonin receptors
Interaction with adrenergic receptors

Condition of a patient with thoracic trauma deteriorates quickly: he develops increasing asphyxiation, facial pallor, tachycardia. What is the likely cause of these developments?
Pneumothorax
Thoracic contusion
Response to pain stimulus
Fright
Rib fracture

A girl who was provisionally diagnosed with Turners syndrome came to a genetic consultation. The diagnosis can be specified by means of the following genetic method:
Sex chromatin test
Dermatoglyphics
Hybridological
Genealogical
Biochemical

A patient has mental retardation, small height, brachydactyly, mongoloid slant. Analysis of his karyotype revealed trisomy 21. What chromosomal anomaly is it?
Downs disease
Trisomy X
Specific fetopathy
Klinefelters syndrome
Turners syndrome

Microscopical examination of discharges from the gums of a patient ill with paradontosis revealed some protozoan pear-shaped organisms 6-13 micrometer long. The parasite has one nucleus and undulating membrane, there are four flagella at the front of its body. What protozoan were found?
Trichomonads
Amoebae
Lamblia
Balantidia
Leishmania

Among public catering workers examined by doctors of sanitary-and-epidemiologic station often occur asymptomatic parasite carriers. This means that a healthy person carries cysts that infect other people. Such parasitizing is impossible for the following causative agent:
Dysenteric amoeba
Malarial plasmodium
Dermatotropic leishmania
Viscerotropic leishmania
Intestinal trichomonad

Two weeks after hemotransfusion a patient developed fever. What protozoal disease can be suspected?
Malaria
Leishmaniasis
Trypanosomiasis
Amebiasis
Toxoplasmosis

Helminthological examination of patients feces revealed oval brown eggs with tuberous external membrane. Name the type of helminth:
Ascarid
Whipworm
Broad tapeworm
Dwarf tapeworm
Pinworm

A blood smear of a patient who has recently recovered from flu contains 10% of roundish cells 4,5-7 micrometer large with a big round nucleus and basophilically stained cytoplasm in form of a narrow border around the nucleus. What blood status are they typical for?
Lymphocytopenia
Monocytopenia
Leukopenia
Thrombopenia
Lymphocytosis

A child has abnormal formation of tooth enamel and dentin as a result of low concentration of calcium ions in blood. Such abnormalities might be caused by deficiency of the following hormone:
Parathormone
Triiodothyronine
Thyroxin
Thyrocalcitonin
Somatotropic hormone

A patient has the sudden decrease of $Ca^{2+}$ content in blood. What hormone secretion will increase?
Parathormone
Somatotropin
Aldosterone
Thyrocalcitonin
Vasopressin

Hepatic dysfunctions accompanied by insufficient inflow of bile to the bowels result in coagulation failure. This phenomenon can be explained by:
Vitamin K deficiency
Leukopenia
Thrombocytopenia
Iron deficiency
Erythropenia

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 are the most likely to be caused by increased secretion of the following hormone:
Aldosterone
Glucagon
Testosterone
Oxytocin
Adrenaline

In an experiment a peripheral segment of the sympathetic nerve that innervates the sublingual gland is being stimulated. In this case this gland will produce:
A small amount of viscous saliva
A small amount of non-viscous saliva
No saliva
A large amount of non-viscous saliva
A large amount of viscous saliva

Examination of a child who has not got fresh fruit and vegetables during winter revealed numerous subcutaneous hemorrhages, gingivitis, carious cavities in teeth. What vitamin combination should be prescribed in this case?
Ascorbic acid and rutin
Folic acid and cobalamin
Thiamine and pyridoxine
Riboflavin and nicotinamide
Calciferol and ascorbic acid

A one-year-old child has enlarged head and belly, retarded cutting of teeth, destruction of enamel structure. What hypovitaminosis causes these changes?
Hypovitaminosis D
Hypovitaminosis B1
Hypovitaminosis B2
Hypovitaminosis C
Hypovitaminosis A

Oral mucosa of a patient was treated with hydrogen peroxide. Instead of foaming, the blood turned brown. That is possible in case of reduced concentration of the following enzyme:
Catalase
Pseudocholinesterase
Acetyltransferase
Methemoglobin reductase
Glucose-6-phosphate dehydrogenase

Electrophoretic study of blood serum of a patient with pneumonia revealed an increase in one of the protein fractions. What fraction is it?
Gamma-globulins
Beta-globulins
Alpha1-globulins
Albumins
Alpha2-globulins

A patient with diabetes mellitus had an insulin injection. It caused loss of consciousness and convulsions. What was the result of biochemical blood analysis on glucose content?

2,5 mmole/l
8,0 mmole/l
3,3 mmole/l
10 mmole/l
5,5 mmole/l

A patient with chronic hypoglycemia had adrenaline introduction. After introduction blood test hasn't changed essentially. Doctor assumed liver pathology. What liver function may have been changed?
Function of glycogen depositing
Ketogenic function
Function of cholesterin production
Glycolytic function
Excretory function

For assessment of the neutralizing function of liver a patient with chronic hepatitis went through a test with natrium benzoate load. The excretion of what acid with urine will characterize the neutrolizing function of liver?
Hippuric acid
Oxalic acid
Citric acid
Phenylacetic acid
Valeric acid

Examination of urine in a newborn revealed presence of citrulline and high ammonia concentration. This baby is most likely to have the disorder of the following substance production:
Urea
Uric acid
Creatinine
Creatine
Ammonia

A patient has disturbed digestion of proteins, fats and carbohydrates. It is most likely to be caused by reduced secretion of the following digestive juice:
Pancreatic
Saliva
Gastric
Bile
Intestinal

In the course of an experiment a nerve is being stimulated by electric impulses. As a result of it, sublingual and submaxillary glands discharge some dense viscous saliva. What nerve is being stimulated?
N. sympathicus

N. glossopharyngeus
N. facialis
N. trigeminus
N. vugus

Deglutition of a patient is disturbed as a result of a trauma. The most probable cause of this disturbance is affection of the following part of CNS:
Medulla oblongata
Spinal cord, Th II-IV
Spinal cord, C V-VI
Mesencephalon
Hypothalamus

Estimation of heat expenditures of a man's organism by means of indirect calomitery had the following results: the organism consumed 1000 ml of oxygen and emitted 800 ml of carbonic acid per minute. What is the respiratory quotient of a man under examination?
0.8
1,25
0,9
0,84
1,0

A patient ill with glomerulonephritis has a disturbed excretory function of kidneys. It will result in the deficit of the following blood corpuscles:
Erythrocytes
Leukocytes
Thrombocytes
Leukocytes and thrombocytes
Erythrocytes and leukocytes

After sprinting untrained people feel muscular pain as a result of lactate accumulation. may be connected with intensification of the following biochemical process:
Glycolysis
Glyconcogenesis
Pentose-phosphate cycle
Lipogenesis
Glycogenesis

A patient suffering from chronic renal insufficiency felt ill with osteoporosis. It is caused by disturbed synthesis of the following regulator of mineral metabolism:
1,25 $(OH)_2$ $D_3$, generation
Proline hydroxylation
Lysine hydroxylation

Glutamate carboxylation
Cortisol hydroxylation

Blood of patients ill with diabetes mellitus has high content of free fatty acids. It may be caused by:
High activity of triglyceride lipase of adipocytes
Accumulation of palmitoyl-CoA in the cytosol
Activation of ketone bodies utilization
Activation of synthesis of apolipoproteins A-1, A-2, A-4
Low activity of phosphatidylcholine- cholestein-acyltransferase of plasma

Pellagra may be caused by maize domination and low quantity of animal foodstuffs in the dietary intake. This pathology results from lack of the following amino acid:
Tryptophane
Isoleucine
Phenylalanine
Methionine
Histidine

A patient with systemic scleroderma has an intensified collagen destruction. Collagen destruction will be reflected by intensified urinary excretion of the following amino acid:
Oxyproline
Alanine
Tryptophane
Serine
Phenylalanine

What substance makes the saliva viscous and mucous and performs protective function, including protection from mechanical injury of mouth mucous membrane?
Mucin
Glucose
Kallikrein
Amylase
Lysozyme

Parodontitis is accompanied by proteolysis activation in the parodontium tissues. Proteolysis activation is signalized by increase of the following component of mouth liquid:
Amino acids
Organic acids
Glucose
Biogenic amines
Cholesterol

A neurological department admitted a 62-year-old man in grave condition on account of cerebral hemorrhage. Objectively: increase of respiration depth and frequency, then its decrease to apnoea, whereupon the cycle of respiratory movements is restored. What respiration type is it?
Chain-Stoke's
Kussmaul's
Biot's
Gasping respiration
Apneustic

3 years ago a 52-year-old man underwent an operation for stomach extraction. Results of blood analysis: erythrocytes - 2, 0-$10^{12}$/l, Hb- 85 g/l, colour index - 1,27. These changes were caused by disturbed assimilation of the following vitamin:
$B_{12}$
$B_6$
C
P
A

An employee was working with radioactive substances and as a result of an incident he was irradiated with 4 Gy. He complains about headache, nausea, dizziness. What changes of blood formula can be expected 10 hours after irradiation?
Neutrophilic leukocytosis
Lymphocytosis
Leukopenia
Agranulocytosis
Neutropenia

Introduction of a local anesthetic to a patient resulted in the development of anaphylactic shock. What is the leading mechanism of blood circulation disturbance?
Decrease of vascular tone
Hypervolemia
Pain
Activation of sympathoadrenal system
Reduction of contractile myocardium function

A patient with adenoma glomerular zone of adrenal cortex (Conn's disease) has arterial hypertension, convulsions, polyuria. What is the main factor in the pathogenesis of these disturbances?
Aldosterone hypersecretion
Aldosterone hyposecretion
Catecholamines hypersecretion
Glycocorticoids hypersecretion
Glycocorticoids hyposecretion

A 30 year-old man was irradiated with approximately 3 Gy. What blood changes will be revealed 8 hours after exposure to radiation?
Lymphopenia
Leukopenia
Granulocytopenia
Thrombocytopenia
Anemia

A patient dropped into an ice hole, froze in the wind and fell ill. Body temperature rose up to 39, 7°C and varied from 39, 0°C to 39, 8°C. Name the type of the patient's temperature profile?
Febris continua
Febris recurrens
Febris hectica
Febris intermittens
Febris remittens

Autopsy of a 34 year-old man who died from rheumatism revealed that epicardium surface was villous and covered with grey films that can be easily removed. After their removal the surface is edematic and plethoric. What is the most probable diagnosis?
Fibrinous pericarditis
Purulent pericarditis
Hemorrhagic pericarditis
Proliferative pericarditis
Catarrhal pericarditis

A. 5 year-old girl has high temperature and sore throat. Objectively: soft palate edema, tonsils are covered with grey films that can be hardly removed and leave deep bleeding tissue injuries. What disease is the most probable?
Pharyngeal diphtheria
Vincent's angina
Lacunar angina
Infectious mononucleosis
Necrotic angina

A patient has deformed jaw bones. Histological examination revealed in the place of bones the growth of cellular-fibrous tumour-like tissue with primitive osteogenesis without distinct borders. What disease are these symptoms typical for?
Fibrous dysplasia
Ameloblastoma
Osteosarcoma
Eosinophilic granuloma
Parathyroid osteodystrophy

Soft palate arches were taken for bioptic examination because of suspected tumour (macroscopical examination revealed an ulcer with dense floor). Biopsy revealed necrosis of membrane along with infiltration of submucous layer by lymphocytes, epithelioid cells, plasmatic cells, neutrophils. There is also evident endo- and perivasculitis. What disease are the described changes typical for?
Primary syphilis
Aphthous stomatitis
Ulcerative stomatitis
Ulcerative necrotic stomatitis (Vincent's stomatitis)
Pharyngeal diphtheria

During morphological examination of pulp floor three zones can be clearly differentiated: the one of softened dentin, sclerotic dentin, replacing dentin. What stage of caries are these changes typical for?
Median caries
White spot stage
Superficial caries
Deep caries
Chronic caries

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 a lung?
Pulmonary emphysema
Multiple bronchiectasis
Cavernous tuberculosis
Chronic bronchitis
Fibrosing alveolitis

A 42 year-old man who had been suffering from chronic granulomatous periodontitis and chronic purulent osteomyelitis of lower jaw for 8 years died under conditions of acute renal insufficiency. What complication of purulent osteomyelitis was developed in kidneys?
Amyloidosis
Hyalinosis
Adipose degeneration
Atrophy tubules
Necrosis of epithelium of convoluted tubules
A 5 year-old child had a temperature rise up to 40°C, acute headache, vomiting, anxiety, chill. 4 days later there appeared hemorrhagic skin eruption, oliguria and adrenal insufficiency that caused death. Bacteriological examination of smears from the child's pharynx revealed meningococcus. What disease form was revealed?
Meningococcemia

Meningococcal meningitis
Meningoencephalitis
Meningicoccal nasopharyngitis
–

48 hours after tuberculine test (Mantoux test) a child had a papule up to 10 mm in diameter on spot of tuberculine introduction. What hypersensitivity mechanism underlies the mentioned changes?
Cellular cytotoxicity
Anaphylaxis
Antibody-dependent cytotoxicity
Immunocomplex cytotoxicity
Granulomatosis

Mucous membrane of a patient's oral cavity has a greyish-white focus, the mass is dense and protrudes above the mucous membrane. Histological examination revealed hyperkeratosis, parakeratosis and acanthosis of epithelium in this area. What pathological process was revealed in the mucous membrane?
Leukoplakia
Hyalinosis
Leukoderm
Local tumourous amyloidosis
Focal ichthyosis

A 7 year-old girl was admitted to the infectious diseases hospital with fever, sore throat, common weakness. A doctor suspected diphtheria. What would be crucial for diagnosis confirmation after pure culture of causative agent had been singled out?
Toxigenity test
Detection of volutine granules
Cystinase test
Hemolytic ability of a causative agent
Phagolysability

The first grade pupils went through a medical examination aimed at selection of children needing tuberculosis revaccination. What test was applied?
Mantoux test
Schick test
Supracutaneous tularin test
Burne test
Anthracene test

Vaccination is done by means of a toxin that has been neutralized by a formaldehyde (0,4%) at a temperature 37-40°C for four weeks. Ramond was the first to apply this preparation for diphtheria prophylaxis. What preparation is it?
Anatoxin

Immunoglobulin
Antitoxic serum
Adjuvant
Inactivated vaccine

In case of many infectious diseases patient's blood may contain antigens of causative agents. What reaction should be applied provided that the level of antigenemia is low?
Enzyme-linked immunosorbent assay
Agglutination test
Indirect hemagglutination test
Latex agglutination test
Immunoelectrophoresis

A 30 y.o. patient who was diagnosed with acute glomerulonephritis has proteinuria. What disturbance is the cause of this phenomenon?
Increased permeability of renal filter
Delayed excretion of products of nitrogen metabolism
Low oncotic pressure of blood plasma
High hydrostatic pressure of blood in capillaries
Decreased quantity of functioning nephrons

For the purpose of disinfection of nonmetallic surgical instruments the formaldehyde solution was used. What group does this anticeptic preparation belong to according to its chemical structure?
Aliphatics
Aromatics
Alcohols
Halogenated compounds
Detergents

All nonsteroidal anti-inflammatory drugs can be harmful for stomach mucous membrane. In order to find substances that don't cause such complication it is necessary to know factors it is connected with. What molecular substrate should be less affected in order to reduce intensity of this complication?
Cyclooxygenase 1
Cyclooxygenase 2
Kallikrein
Lysosomal enzymes
Adenylate cyclase

A patient with accute attack of duodenal ulcer was admitted to a hospital. Analysis of his gastric juice revealed intensification of secretory and acid-forming stomach functions. Choose a drug that will reduce secretory stomach function due to blockade of $H_2$-receptors:

Ranitidine
Belladonna extract
Atropine
Methacin
Platyphyllin

After a surgical procedure a patient felt ill with enteroparesis. What medication from the group of anticholinesterase drugs should be prescribed?
Proserin
Carbacholine
Aceclydine
Pilocarpine
Acetylcholine

For treatment of skin diseases with apparent inflammation in the maxillofacial area the topical glucocorticoids are applied. What preparation has the minimal resorptive effect?
Flumethasoni pivalas
Prednisolone
Hydrocortisone
Triamcinolone
Dexamethasone

A 47-year-old man complains of an ulcer on the back of his tongue. His history states that before the ulcer, there was a tuberculous infiltrate for a long time. The infiltrate was gradually enlarging and then an ulcer formed. Objectively, there is a shallow elongated ulcer on the dorsum of the patient's tongue. The ulcer is painful, has overhanging edges and is surrounded with tubercles. Make the provisional diagnosis.
Tuberculous ulcer
Actinomycosis of the tongue
Tongue abscess
Primary syphilis
Decubitus ulcer

A 56-year-old woman undergoes a preventive examination by a dentist. She has an oval erosion on the vermilion border of her lower lip. The erosion is deep red, its surface is smooth. Bloody scabs that are difficult to remove are observed on the erosion surface. Removal of the scabs causes mild bleeding. Slight injury of the erosion in the places where there are no scabs causes no bleeding. What type of lower lip precancer is it?
Manganotti's abrasive precancerous cheilitis
Bowen's disease
Lupus erythematosus
Verrucous precancer of the vermilion border of the lip

Limited precancerous hyperkeratosis of the vermilion border of the lip

A 55-year-old woman came to a dentist with complaints of burning in her oral cavity when eating irritant foods, a sensation of roughness, and an unusual appearance of the buccal mucosa. The patient has a history of chronic cholecystitis. Objectively, she has artificial crowns made of various metals in her oral cavity. Against the background of unchanged buccal mucosa, she has patches of small whitish papules in the retromolar space. They are keratinized, slightly raised, form a ring-shaped pattern, and cannot be removed by scraping. Make the provisional diagnosis.
Lichen ruber planus
Lupus erythematosus
Secondary syphilis
Acute pseudomembranous candidiasis
Verrucous leukoplakia

A dentist performs endodontic treatment of tooth 46 for chronic fibrous pulpitis. The dentist chose the step-back technique to scout and widen the root canals. At the first stage, the root canal was scouted and its working length was determined. What is the next step according to this technique?
Formation of the apical stop
Exposing the apical opening
Smoothing the walls of the root canal
Formation of the middle third of the root canal
Formation of the upper third of the root canal

A 34-year-old man came to a dentist with complaints of a constant dull pain in his upper left tooth. The pain intensifies when cold stimuli are applied and radiates to the ear and temple. One year ago, the patient had an intense pain in this tooth, but did not consult a dentist. The pain recurred three days ago. Objectively, tooth 27 has a deep carious cavity that communicates with the pulp chamber. Probing of the exposed spot is extremely painful. X-ray of tooth 27 shows widening of the periodontal fissure in the area of its root apices. What is the most likely diagnosis in this case?
Exacerbation of chronic fibrous periodontitis
Acute diffuse pulpitis
Exacerbation of chronic fibrous pulpitis
Exacerbation of chronic gangrenous pulpitis
Exacerbation of chronic granulomatous periodontitis

A 42-year-old man came to a dentist with complaints of bleeding gums and bad breath. After examination the following provisional diagnosis was made: chronic generalized parodontitis, II degree. What examination technique would be most informative for establishing the final diagnosis in this case?
X-ray
Kotzshke test

Depth of periodontal pockets
Teeth mobility
Kulazhenko test

A 39-year-old woman complains of general malaise, headache, fever of 38°C, and pain in the oral cavity. Similar condition occurs periodically, more often in autumn and spring. Objectively, her sharply hyperemic and swollen mucosa of the cheeks, lips, and soft palate has erythematous spots, burst blisters, and erosions covered with fibrinous plaque. Nikolsky's sign is negative. Hypersalivation is observed. Submandibular lymph nodes arc enlarged, mobile, and somewhat painful to palpation. What is the most likely diagnosis in this case?
Erythema multiforme exudativum
Chronic recurrent aphthous stomatitis
Pemphigus vulgaris
Lichen ruber planus, erosive-ulcerative form
Chronic recurrent herpes

A 30-year-old woman came to a dentist with complaints of discoloration of her upper front tooth and food getting stuck between the teeth. Objectively, a carious cavity is observed on the mesial contact surface of tooth 12 within the mantle dentin. The walls and floor of the carious cavity arc dense and pigmented. The dentinoenamel border is tender to probing. Thermal stimulus provokes no response. Percussion results are negative. Make the diagnosis.
Chronic median caries
Chronic deep caries
Chronic fibrous pulpitis
Chronic superficial caries
Chronic fibrous periodontitis

An 18-year-old young man came to a dentist with complaints of teeth sensitivity on his lower left jaw, provoked by cold stimuli. Examination detects a hard tissue defect within the enamel on the vestibular surface of tooth 37 in its paracervical region. The enamel there is matte white, not glossy, and fragile when probed. What diagnosis can be made in this case?
Acute superficial caries
Local enamel hypoplasia
Acute median caries
Cuneiform defect
Acute initial caries

A 28-year-old woman came to a dentist with complaints of acute paroxysmal spontaneous pain in her upper left tooth. The pain attacks last 5-10 minutes. Objective examination detects a carious cavity in tooth 26. The carious cavity has a narrow entrance, is located within the softened non-pigmented peripulpal dentin, and does not communicate with the pulp chamber. Probing of the cavity floor is painful

in the projection of the mesiobuccal pulp horn. The response to cold is painful and prolonged. Percussion is painless. Electric pulp testing — 15 microamperes. What diagnosis can be made in this case?
Acute limited pulpitis
Acute median caries
Acute diffuse pulpitis
Exacerbation of chronic fibrous pulpitis
Acute deep caries

A 34-year-old woman came to a dentist with complaints of short-term pain caused by thermal stimuli in her teeth 34 and 35. Objectively, the visible surfaces of teeth 34 and 35 arc intact, the contact surfaces cannot be examined due to the dense arrangement of the teeth. What examination technique would be most informative in this case, if a carious cavity is suspected on the contact surfaces of the teeth?
X-ray
Percussion
Vital staining
Electric pulp testing
Probing

A patient is to undergo endodontic treatment of tooth 21 due to exacerbation of chronic pulpitis. The dentist chooses tools for the treatment. What is the function of a spreader?
Filling of root canals
Pulp removal from root canals
Widening of root canals
Root canal length measuring
Assessment of root canal patency

A 58-year-old woman complains of a red spot on her lower lip that first appeared 4 years ago. Objectively, on the vermilion border of the lower lip there is a red spot with velvety surface. The mucosal lesion is slightly concave, when compared to the surrounding tissues. It does not change its color when pressed. Make the provisional diagnosis.
Bowen’s disease
Verrucous precancer
Exfoliative cheilitis
Simple leukoplakia
Hemangioma

A 44-year-old man has been diagnosed with generalized parodontitis, II degree, chronic progression. What must be done first during the management of this patient?
Elimination of traumatic occlusion
Extraction of mobile teeth
Professional oral hygiene

Adhesive splinting of mobile teeth
Curettage of periodontal pockets

A 33-year-old woman came to a dentist complaining of an aesthetic defect in her teeth 11 and 21 and a short-term pain that occurs when she eats sour or sweet foods. Objectively, the vestibular surface of teeth 11 and 21 have defects of hard tissues within the dentinoenamel junction. The defects have gently sloping walls and a dense floor and are painful to probing. The skin of the face, the vermilion border of the lips, and oral mucosa have no visible pathological changes. The woman additionally complains of sweating, tachycardia, and increased appetite. She is thin and has exophthalmos. What has caused the development of this pathology?
Endocrine system disease
Gastrointestinal tract disease
Cariogenic microflora
Hereditary disease
Cardiovascular system disease

A 23-year-old young man complains of acute bleeding from the gums and bad breath that appeared 5 days ago. Objectively, the interdental papillae and the gingival margin are bright red, edematous, painful, and bleed intensely when palpated. Gingival pockets are 2-3 mm deep. X- ray shows marked osteoporosis of the interalveolar septa and widening of the periodontal fissure around the apices of the interalveolar septa. The lamina dura is intact. What is the most likely diagnosis in this case?
Acute catarrhal gingivitis
Acute necrotizing ulcerative gingivitis
Chronic hypertrophic gingivitis
Generalized parodontitis, II degree, exacerbated course
Acute leukemia

A 35-year-old man complains of constant pain in the area of his upper left lateral tooth. The pain is observed throughout the last 24 hours and intensifies during biting on the affected tooth. Objectively, a carious cavity is observed on the mesial surface of tooth 25. The carious cavity does not communicate with the pulp chamber. Thermal stimulus provokes no response. Percussion of tooth 25 is sharply painful. X-ray detects no pathological changes in the bone tissue of the periapical region. What diagnosis can be made in this case?
Acute purulent periodontitis
Acute serous periodontitis
Acute diffuse pulpitis
Exacerbation of chronic periodontitis
Acute purulent pulpitis

During the treatment of ulcerative gingivitis, a 38-year-old man was locally prescribed a drug that belongs to the hydrolase enzymes and is a thermostable

protein contained in tears, saliva, and breast milk as an innate resistance factor of the human body. Name this drug.
Lysozyme
Interleukin
Penicillin
Interferon
Imaninum

A 21-year-old woman complains of short-term pain attacks in her lower left tooth that are provoked by thermal stimuli and quickly stop after the stimulus is removed. On the masticatory surface of tooth 47. examination reveals a carious cavity with a narrow entrance that is filled with light softened dentin. Probing of the cavity floor and percussion of tooth 47 are painless. Probing of the cavity walls is painful. What diagnosis can be made in this case?
Acute median caries
Acute deep caries
Chronic superficial caries
Chronic median caries
Chronic deep caries

For 2 days a man has been suffering from spontaneous nocturnal pain attacks in the area of his tooth 25. The pain radiates along the branches of the trigeminal nerve and alternates with brief painless intervals. Objectively, the mesial surface of tooth 25 has a deep carious cavity within the parapulpar dentin. Probing of the cavity floor and percussion are painful. Thermal stimulation of tooth 25 provokes a pain attack. What diagnosis can be made in this case?
Acute diffuse pulpitis
Acute purulent periodontitis
Trigeminal neuralgia
Acute deep caries
Acute purulent pulpitis №

A 48-year-old woman came to a dentist with complaints of a painful ulcer on her tongue. She had a similar ulcer one year ago. Objectively, on the lateral surface of the tongue there is an oval erosion up to 5 mm in size, covered with a fibrinous plaque, surrounded by a hyperemic margin, soft and sharply painful to palpation. Oral mucosa in other areas is pale and edematous. What diagnosis can be made in this case?
Chronic recurrent aphthous stomatitis
Chronic recurrent herpes
Erythema multiforme exudativum
Primary syphilis
Trophic ulcer

During preventive examination by a dentist, a 27-year-old woman presents with a painless rash on the mucosa of her cheeks, hard palate, and lower lip. The rash manifests as isolated round copper-red papules 1-1.5 cm in diameter, with a narrow border of hyperemia. Erosions or whitish coating can be observed on the surface of individual papules. Submandibular and cervical lymph nodes arc moderately enlarged, painless, mobile. Make the provisional diagnosis.
Secondary syphilis
Sutton's stomatitis
Erythema multiforme exudativum
Lichen ruber planus
Pemphigus vulgaris

Tooth 46 is being endodontically treated for chronic fibrous periodontitis. Its root canals are narrow and sclerosed. What tool should be used to widen the root canals in this case?
Ethylcncdiaminetetraacetic acid
Chlorhexidine bigluconate
Sodium hypochlorite
Orthophosphoric acid
Aminocaproic acid

After a clinical examination of a 28-year-old patient, a dentist made the following diagnosis: acute median caries of tooth 25, Black's class I. What dental drill should be used in this case to open the carious cavity during the treatment?
Spherical, diamond
Spherical, hard-alloy
Cylindrical, hard-alloy
Wheel-shaped, diamond
Inverted cone, diamond

A 28-year-old man came to a dentist with complaints of pain in his lower left tooth. The pain is provoked by sweet foods and stops immediately after the stimulus is removed. Objectively, the distal surface of tooth 34 has a deep carious cavity filled with soft pigmented dentin. Probing the cavity floor is painful. No communication can be detected between the cavity and the pulp chamber. Thermal stimulation results are positive, short-term. What diagnosis can be made in this case?
Acute deep caries
Chronic deep caries
Chronic gangrenous pulpitis
Acute limited pulpitis
Chronic fibrous periodontitis

A dentist prepares to receive a patient. The dental unit has no modern equipment for handpiece disinfection. The design of the handpiece does not allow for its autoclaving. Specify the algorithm for the handpiece disinfection in this case.

Two treatments with 70% alcohol or Bacillol AF with an interval of 15 minutes between them
One treatment with 70% alcohol or Bacillol AF
Two treatments with 6% hydrogen peroxide and 70% alcohol with an interval of 15 minutes between them
Two treatments with 70% alcohol or Bacillol AF with an interval of 5 minutes between them
Two treatments with 6% hydrogen peroxide with an interval of 15 minutes between them

A 30-year-old woman came to a dentist with complaints of an unpleasant bursting sensation in her upper right tooth. Heat makes this sensation worse. Objectively, the masticatory surface of tooth 17 has a deep carious cavity that communicates with the pulp chamber. Deep probing is painful. Percussion of tooth 17 is mildly painful. X- ray shows slight widening of the periodontal fissure at the root apices. Electric pulp testing — 70 microamperes. What diagnosis can be made in this case?
Chronic gangrenous pulpitis
Acute purulent pulpitis
Chronic fibrous pulpitis
Chronic fibrous periodontitis
Exacerbation of chronic granulating periodontitis

A 54-year-old woman complains of a neoplasm on her lower lip that appeared 6 months ago. During the last 20 days, it started sharply increasing in size. Objectively, on the vermilion border of the lower lip there is a round gray-red node that protrudes by 0.5 cm above the underlying tissues, is demarcated, and has a funnel-shaped indent in its center, filled with keratinized masses. The node is dense, mobile, and painless to palpation. What is the most likely diagnosis in this case?
Keratoacanthoma
Verrucous leukoplakia
Manganotti’s cheilitis
Verrucous precancer
Papilloma
A 38-year-old man has been diagnosed with chronic generalized periodontitis, initial stage. Professional oral hygiene was performed. What oral care product should be recommended to this patient for removal of food debris and massage of the gums?
Irrigator
Toothpicks
Hygienic toothbrush
Interdental stimulator
Dental floss

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?

Ribosomes
Smooth endoplasmic reticulum
Postlysosomes
Centrosome
Mitochondria

A 43-year-old man complains of a sharp pulsing pain in the area of his right upper jaw. The pain appeared three days ago. Objectively, an inflamed round infiltration can be palpated on the vestibular surface of the gingival mucosa in the area of tooth 16, closer to the gingival margin. The tooth is intact, with the II degree mobility. Its horizontal and vertical percussion is painful. The periodontal pocket is 4-5 mm deep. What diagnosis can be made in this case?
Periodontal abscess
Acute serous periodontitis
Exacerbation of chronic periodontitis
Maxillary periostitis
Acute suppurative periodontitis

A 52-year-old woman complains of cosmetic defects in her teeth that she noticed several years ago. Objectively, on the vestibular surfaces in the paracervical areas of her premolars and incisors, there are fissure-like defects within the mantle dentine, formed by smooth glossy surfaces. The necks of the teeth are exposed. The gums arc firm and pale pink. The defects arc painless when probed. Make the diagnosis.
Wedge-shaped defect
Chronic median caries
Pathological wear of teeth
Necrosis of dental hard tissues
Erosion of dental hard tissues

A 28-year-old woman came to a dentist with complaints of a carious cavity in her lower right tooth and food getting stuck in the affected area. The following diagnosis was made: chronic median caries of tooth 47, Black's class II. What properties of glass ionomer cements makes them an unsuitable material for filling in this case?
Fragility
Insufficient aesthetic characteristics
Chemical adhesion to dental hard tissues
Polymerization shrinkage
Release of fluorine ions

A 30-year-old patient complains of toothache caused by hot and cold stimuli. The pain irradiates to the ear and temple. Previously there was spontaneous nocturnal toothache. Objectively: on the- occlusal surface of the 37 tooth there is a deep carious cavity communicating at one point with the tooth cavity. Probing at the communi-cation point, as well as cold stimulus, causes acute pain. The pain persists

for a long time. Electi'ic pulp test result is 55 microamperes. What is the most likely diagnosis?
Exacerbation of chronic pulpitis
Acute diffuse pulpitis
Chronic concrementous pulpitis
Acute purulent pulpitis
Exacerbation of chronic periodontitis

A 25-year-old patient complains of pain when biting on the 15 tooth. The pain arose two days ago, has a constant aching nature and increased significantly over the last day. Objectively: the crown of the 15 tooth is gray, the medial contact surface exhibits a deep carious cavity communicating with the tooth cavity. Percussion causes acute pain, the gingival mucosa in the projection of the 25 tooth root apex is hyperemic. The regional lymph node is tender. Radiograph shows an ill-defined zone of periapical bone destruction. What is the most likely diagnosis?
Exacerbation of chronic periodontitis
Chronic granulating periodontitis
Acute serous periodontitis, intoxication stage
Acute serous periodontitis
Acute suppurative periodontitis

On examination of a 27-year-old patient the tip of the dental probe caught on the fissures of the 36, 37, 38 teeth. Margins of the enamel defect are dark, the surface is coarse. Teeth transillumination with photopolymer lamp revealed the defect to be limited to the enamel. What diagnosis is most likely?
Chronic superficial caries
Chronic primary caries
Acute primary caries
Chronic median caries
Acute superficial caries

An athlete before a sports contest presents with elevated blood pressure and heart rate. What part of the CNS induces these changes?
Cerebral cortex
Medulla oblongata
Diencephalon
Mesencephalon
Hypothalamus

A patient complains that even small traumas lead to persistent hemorrhages. Laboratory analysis shows disturbed blood composition, namely a low count of the following blood corpuscles:
Platelets
Erythrocytes
Lymphocytes

Monocytes
Neutrophils

An 18-year-old woman complains of gum growth, pain and bleeding during eating solid food. Objectively: hyperemis and swelling of the gums, gingival margin hypertrophy of the 12,13, 14 teeth up to 1/2 of the crown height. Formalin test is painless. What diagnosis is most likely?
Hypertrophic gingivitis
Catarrhal gingivitis
Chronic generalized periodontitis, II degree
Ulcerative gingivitis
Acute generalized periodontitis, I degree

A 34-year-old male patient complains of acute spasmodic pain in the region of his upper jaw on the left that is aggravating when affected by cold stimuli. Toothache irradiates to the ear and temple. He had acute toothache of the 37 tooth one year ago, but he did not consult a dentist. Pain recurred three days ago. Objectively: the 37 tooth has a carious cavity communicating with the dental cavity. Probing of the opened carious cavity is extremely painful. X-ray picture shows wi-dening of periodontal fissure at the root apex of the 37 tooth. What is the most likely di-agnosis?
Exacerbation of chronic pulpitis
Acute diffuse pulpitis
Exacerbation of chronic granulating periodontitis
Acute purulent pulpitis
Exacerbation of chronic fibrous periodontitis

A patient needs his tongue to be amputated due to a malignant tumor located there. Where can one easily find the lingual artery and ligate it?
Pirogov triangle
Carotid triangle
Omoclavicular triangle
Omotrapezoid triangle
Omotracheal triangle

A topical anesthetic was applied to the tongue apex of an experiment participant. The resulting gustatory loss will make this person unable to feel the following taste:
Sweet
Salty
Sour
Bitter
Sour and salty

As a result of an injury, an area of the oral cavity was damaged. This area can be divided into the maxillary, intermediate, and mandibular zones. What part of the oral cavity is damaged?
Cheek
Lip
Tongue
Soft palate
Hard palate

A patient was diagnosed with acute glomerulonephritis. What substance in the urine indicates a damage to the basement membrane of the renal glomerular capillaries in case of this pathology?
Protein
Creatine
17-ketosteroids
Fructose
Indican

A patient was diagnosed with meningitis. A puncture of the subarachnoid space is necessary. This space can be located between the following structures:
Arachnoid mater and pia mater
Periosteum and arachnoid mater
Periosteum and dura mater
No correct answer
Dura mater and arachnoid mater

A 58-year-old man presents with the clinical picture of acute pancreatitis. This diagnosis can be confirmed by high levels of a certain substance in the patient's urine. Name this substance:
Amylase
Ysidual nitrogen
Uric acid
Albumin
Urea

During examination of the patient's oral cavity, the dentist noticed the presence of a carious spot in the area of the linguodistal groove on the masticatory surface of the first upper right molar. This groove separates the following structure:
Hypocone
Mesocone
Protocone
Metacone
Paracone

A patient developed hypersalivation, during dental manipulations. What group of medicines reduces this phenomenon?
Cholinergic antagonists
Adrenergic antagonists
Adrenergic agonists
Astringents
Cholinergic agonists

A patient cannot lift the lowered mandible. What muscles fail to perform their function in this case?
Masticatory muscles
Orbicularis oris muscle
Epicranius muscle
Mimic muscles
Levator anguli oris muscle

What is the secondary mediator in the mechanism of action of adrenaline?
Cyclic adenosine monophosphate
Cyclic guanosine monophosphate
Cyclic cytidine monophosphate
Cyclic thymidine monophosphate
Cyclic uridine monophosphate

Name the specific phase of action potential, characteristic of typical cardiomyocytes:
Slow repolarization (plateau)
Systolic repolarization
Rapid systolic depolarization
Slow diastolic repolarization
Rapid diastolic depolarization

During the extraction of a carious tooth, the dental surgeon found a gray-pink soft-elastic nodule 1.3 cm in diameter in the area of the dental root. Microscopically, the nodule is represented by granulation tissue with lymphocytes, plasma and mast cells, macrophages, xanthoma cells, and fibroblasts. What pathological neoplasm can be suspected in this case?
Simple granuloma
Granulating periodontitis
Cystogranuloma
Eosinophilic granuloma
Epithelial granuloma

A glucocorticoid ointment has been prescribed to a patient for periodontitis treatment. Name this medicine:
Prednisolone
Erythromycin

Ampicillin
Tetracycline
Decamin (Dequalinium)

A patient was diagnosed with multiple myeloma. Total blood protein is 180 g/L. What proteins, present in the body, are the cause of such total protein value?
Bence-Jones protein
Albumins X
Immunoglobulins
Transferrin
Haptoglobin

A 53-year-old woman has height of 163 cm, body weight of 92 kg, uniform fat deposition, and puffy face. She is inactive and apathetic. Pressing the front surface of lower leg leaves an indentation. What gland is dysfunctional in this woman, causing her pathological condition?
Thyroid glands
Parathyroid gland
Pituitary gland
Adrenal glands
Gonads

Ribosomes are the organelles that bind amino acid residues into a polypeptide chain. The number of ribosomes in the cells of different organs varies and depends on the function of the organ. What organ has the highest ribosome count in its cells?
Secretory cells of the pancreas
Outermost layer of epidermis
Urinary bladder
Epithelium of the small intestine
Epithelium of the renal tubules

A person, who came to a hospital with complaints of diarrhea, was diagnosed with amoebic dysentery. Tetracycline was prescribed to the patient as a part of complex treatment. Name the type of action of this medicine:
Etiotropic
Irreversible
Reflex
Primary
Direct

The patient’s saliva has been tested for antibacterial activity. What saliva component has antibacterial properties?
Lysozyme
Amylase
Ceruloplasmin

Parotin
Cholesterol

In the patient's blood there is a C-reactive protein that chemically can be classified as a glycoprotein. It indicates the following pathology:
Rheumatism
Porphyria
Thrombocytopenia
Leucopenia
Anemia

Formation of a large amount of immunoglobulins with various antigen specificity from a small number of genes occurs due to:
Recombination
Transcription
Replication
Deletion
Translocation

A 6-year-old girl exhibits marked signs of hemolytic anemia. Biochemical anlysis of her erythrocytes shows deficiency of glucose 6-phosphate dehydrogenase enzyme. What metabolic process is disturbed in this patient and has leading role in the development of this pathology?
Pentose-phosphate pathway
Tissue respiration
Oxidative phosphorylation
Anaerobic glycolysis
Gluconeogenesis

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

A patient with Cushing syndrome presents with persistent hyperglycemia and glucosuria. This patient is likely to have increased production and secretion of the following hormone:
Cortisol
Glucagon
Aldosterone
Thyroxine

Adrenaline

A 25-year-old young man complains of general weakness, rapid fatigability, irritability, reduced working ability, and bleeding gums. What vitamin deficiency is the most likely cause of this condition?
Ascorbic acid
Folic acid
Thiamine
Riboflavin
Retinol

A smear specimen of human red bone marrow shows, among myeloid cells and adipocytes, certain stellate cells with oxyphilic cytoplasm that are connected with their cellular processes. Name these cells:
Reticular cells
Fibroblasts
Dendritic cells
Osteocytes
Macrophages

Microslide of a cardiac tissue shows rectangular cells with central location of the nucleus and well-developed myofibrils connected with Z-disks. These cells perform the following cardiac function:
Contraction
Regenerative
Endocrine
Impulse conduction
Protective

A connective tissue specimen stained with hematoxylin-eosin shows isogenous cell groups surrounded with basophilic intercellular substance. No fibrous structures are detected. What type of connective tissue is it?
Hyaline cartilage tissue
Dense fibrous tissue
Splenial bone tissue
Loose fibrous tissue
Elastic cartilage tissue

A sample obtained from the patient’s thyroid gland was processed with silver salts, which revealed large argyrophilic cells in the follicular walls. What hormone is being secreted by these cells?
Calcitonin
Adrenaline
Parathyrin
Thyroxine

Aldosterone

A certain embryonic organ is being studied. In this organ the first blood corpuscles that make up blood as a tissue are being formed. Name this organ:
Yolk sac
Thymus
Red bone marrow
Spleen
Liver

A histological specimen shows cells that form isogenous groups. There are glycoproteins, proteoglycans, and collagen fibers in the intercellular substance. What tissue is it?
Cartilaginous tissue
White adipose tissue
Brown adipose tissue
Bone tissue
Mucous tissue

Histologic specimen of a tooth slice shows a tissue consisting of intercellular substance permeated with tubules, in which cellular processes of odontoblasts are situated. What tissue is presented in this histologic specimen?
Dentin
Pulp
Enamel
Cement
Periodontium

A man complains of varicose veins on his left leg. Venous nodes are located on the posterior surface of the shin and on the posterior and anterior surfaces of the thigh. What superficial leg veins are damaged in this patient?
Great saphenous vein, small saphenous vein
Small saphenous vein, deep femoral vein
Femoral vein, great saphenous vein, small saphenous vein
Posterior tibial vein, great saphenous vein
Popliteal vein, superficial saphenous vein

A 10-day-old child has undergone a surgery to repair cleft upper lip (”harelip”). Cleft upper lip has resulted from the following in this case:
Nonclosure of frontal and maxillary processes of the first pharyngeal arch
Nonclosure of palatine tori of maxillary processes of the first pharyngeal arch
Nonclosure of the third pharyngeal arch
Nonclosure of maxillary and mandibular processes of the first pharyngeal arch
Nonclosure of the second pharyngeal arch

After facial trauma the patient developed a buccal hematoma. What salivatory gland has its outflow blocked by the hematoma?
Parotid
Buccal
Submandibular
Sublingual
Lingual

A patient complains of painful chewing, especially when his lower jaw moves forward and to the side. It indicates functional disorder of the following muscles:
Lateral pterygoid muscles
Temporal muscles
Masseter muscles
Medial pterygoid muscles
Mylohyoid muscles

After a cold the patient developed impaired perception of pain and thermal stimuli in the front 2/3 of the tongue. What nerve was damaged in this case?
Trigeminal
Hypoglossal
Vagus
Chorda tympani
Phrenic

During surgery on the stomach, the surgeon has cut the left gastric artery and ligated it. However the opposite end of the cut artery continued to bleed. What artery anastomoses with the left gastric artery?
Right gastric artery
Right gastroepiploic artery
Superior pancreaticoduodenal artery
Left gastroepiploic artery
Splenic artery

A patient was diagnosed with a damaged intervertebral disk in the lumbar spine. What type of joint is it?
Synchondrosis
Syndesmosis
Synostosis
Diarthrosis
Symphisis

A student uses percussion to determine the cardiac border that projects on the anterior thoracic wall at the level of the third costal cartilage. What cardiac border is being determined?
Upper

Lower
Right
Apex
Left

A tooth has been extracted. Its crown is chisel-shaped, wide, with narrow edge. The root is cone-shaped and flattened from the sides. What tooth was extracted?
Upper incisor
Lower incisor
Upper premolar
Lower canine
Lower premolar

An experimental animal, a dog, received a weak solution of hydrochloric acid through a tube inserted into the duodenum. Primarily it will result in increased secretion of the following hormone:
Secretin
Histamine
Gastrin
Cholecystokinin
Neurotensin

An athlete before a sports contest presents with elevated blood pressure and heart rate. What part of the CNS induces these changes?
Cerebral cortex
Diencephalon
Mesencephalon
Hypothalamus
Medulla oblongata

A patient complains that even small traumas lead to persistent hemorrhages. Laboratory analysis shows disturbed blood composition, namely a low count of the following blood corpuscles:
Platelets
Erythrocytes
Lymphocytes
Monocytes
Neutrophils

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 are the most likely to be caused by increased secretion of the following hormone:
Aldosterone
Adrenaline
Oxytocin

Glucagon
Testosterone

In an experiment a peripheral segment of the sympathetic nerve that innervates the sublingual gland is being stimulated. In this case this gland will produce:
A small amount of viscous saliva
A small amount of non-viscous saliva
A large amount of viscous saliva
A large amount of non-viscous saliva
No saliva

An athlete overexerted himself during a training and developed a muscle contracture. In such cases the muscle loses its flexibility and gradually becomes rigid due to its inability to relax. What is the likely cause of the contracture in this case?
ATP deficiency
Increased blood levels of lactic acid
Decreased blood levels of Ca++
Tropomyosin structural changes
Increased blood levels of K+

Condition of a patient with thoracic trauma deteriorates quickly: he develops increasing asphyxiation, facial pallor, tachycardia. What is the likely cause of these developments?
Pneumothorax
Fright
Rib fracture
Thoracic contusion
Response to pain stimulus

In hot weather the bus passengers asked to open the roof hatches. What way of heat transfer is activated in this situation?
Convection
Conduction
Conduction and radiation
Sweat evaporation
Radiation

People with diseases of internal organs often assume forced positions (e.g. with lower limbs flexed and pressed to the abdomen) due to the following reflex response:
Visceromotor
Dermatovisceral
Motor-visceral
Viscerodermal
Viscero-visceral

A dentist has to spend much of his time on his feet when working, which can result in a venous congestion in the legs and varicose veins. Leading mechanism of congestion in this case is the decrease of:
Skeletal muscle contraction in the lower limbs
Blood pressure gradient in the veins
Cardiac residual pumping force
Diaphragmatic piston effect on the abdominal organs
Thoracic pump effect

In an experiment the vagus is being stimulated, which results in increased acetylcholine entry to the synaptic cleft, and that in turn results in the decresed heart rate due to the following mechanism:
Hyperpolarization of cardiomyocyte membrane
Increase in AV nodal conduction velocity
Decrease of action potential duration
Increase of action potential duration
Depolarization of cardiomyocyte membrane

A person in a hot weather for a long time had no water, which resulted in a severe thirst. What indicator of blood homeostasis was affected, leading to the development of this sensation?
Plasma osmotic pressure
Hematocrit
pH
Glucose level
Plasma oncotic pressure

During a brain surgery stimulation of the cerebral cortex resulted in tactile and thermal sensations in the patient. What gyrus was stimulated?
Postcentral gyrus
Cingulate convolution
Superior temporal gyrus
Precentral gyrus
Parahippocampal gyrus

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

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

After a total gastric resection the patient developed severe B12-deficient anemia with disturbed hematopoiesis. Changed erythrocytes appeared in the patient's blood. One of the signs of this anemia is the presence of the following in blood:
Megalocytes
Elliptocytes
Anulocytes
Normocytes
Microcytes

A patient with essential hypertension presents with circadian fluctuations in total peripheral vascular resistance to blood flow. What vessels will be the most affected in this case?
Arterioles
Arteriolovenular anastomoses
Veins
Aorta
Capillaries

On clinical examination a woman presents with excessive sweating, tachycardia, loss of weight, and tremor. What endocrine pathology can cause these signs?
Hyperthyroidism
Hypergonadism
Hypothyroidism
Hypogonadism
Hypoaldosteronism

A 49-year-old man presents with facial edema, significant proteinuria, hypoproteinemia, dysproteinemia, and hyperlipidemia. What provisional diagnosis can be made?
Nephrotic syndrome
Prostatitis
Cystitis
Pyelonephritis
Urolithiasis

Histological microslide shows cells that form isogenic groups. The intercellular substance contains glycoproteins, proteoglycans, and collagen fibers. What tissue is it?
Cartilaginous tissue
Mucous tissue
White adipose tissue
Bone tissue
Brown adipose tissue

After an injury, the patient developed a focus, of purulent inflammation in the alveolar process of the jaw in its outward area, with the development of subperiosteal abscess and edema of the adjacent soft tissues. What is the most likely diagnosis in this case?
Purulent periostitis
Serous periostitis
Chronic hyperplastic periostitis
Chronic fibrous periostitis
Ossifying periostitis

A patient was diagnosed with a malignant neoplasm of the tongue. What characteristics of this tumor make it possible to classify it as a malignant one?
Infiltrative growth
Increased number of mitotic cells
Positive Pasteur effect
Anaplasia
Expansive growth

An enzyme that binds with the substrate uses only a part of its molecule to interact with it. Name this part of the enzyme molecule:
Segment of a polypeptide chain
Active site
Coenzyme
Cofactor
Allosteric site

The prisoner, who went on a hunger strike, developed edemas. What is the mechanism of edema development in this case?
Decreased oncotic blood pressure
Reduction in circulating blood volume
Decreased hydrostatic tissue pressure
Increased oncotic tissue pressure
Increased hydrostatic venous pressure

When a newborn baby feeds, milk gets into the baby's nasal cavity. What is the most likely cause of this pathological condition?

Cleft palate
Cleft lip
Basilar skull fracture
Right-sided nasal septum deviation
Left-sided nasal septum deviation

During examination, a 7-year- old child was diagnosed with multiple caries by the dentist. What medicine should be recommended for caries prevention in this case?
Calcium glycerophosphate
Calcium gluconate
Calcium hydroxide
Calcium hydroxide
Calmecin

A section of a multi-rooted tooth shows a tissue located at the apices of the dental roots and in the place of their branching. This tissue contains cells with processes located in the lacunae, and numerous collagen fibers arranged radially or longitudinally. Name this tissue:
Cellular cement
Dentin
Reticulofibrous bone
Enamel
Dense connective tissue

During laboratory testing of the blood of a deceased person, the forensic pathologist diagnosed cyanide poisoning. What was the cause of death in this case?
A change in blood pH
Carbhemoglobin production
Carboxyhemoglobin production
Methemoglobin production
Production of reduced hemoglobin

Replication is one of the reactions of matrix synthesis. What new molecule is formed from a DNA molecule in the process of replication?
DNA
rRNA
mRNA
tRNA
Pro-mRNA

Examination of a 40-year-old woman detected increased basal metabolism. What hormone levels are excessive in this woman, causing her pathological condition?
Triiodothyronine
Glucagon
Thyrocalcitonin

Aldosterone
Somatostatin

An ophthalmologist has detected increased time of darkness adaptation in the patient's eye. What vitamin deficiency can cause this sign?
A
D
C
E
K

The patient exhausted by starvation presents with intensification of the following process in the liver and kidneys:
Gluconeogenesis
Bilirubin synthesis
Uric acid synthesis
Hippuric acid synthesis
Urea synthesis

Various substances can be used as anticoagulants. Among them there is a certain naturally derived polysaccharide. Name this polysaccharide:
Heparin
Dermatan sulfate
Hyaluronic acid
Chondroitin sulfate
Dextran

A patient presents with osteoporosis. Hypercalcemia and hypophosphatemia are observed in the patient's blood. What is the cause of this condition?
Increased parathormone secretion
Inhibited parathormone secretion
Increased thyroxin secretion
Increased corticosteroid secretion
Inhibited corticosteroid secretion

A patient with pulmonary tuberculosis is prescribed rifampicin that inhibits RNApolymerase enzyme at the stage of initiation of the following process:
Transcription
Replication
Translation
Termination
Elongation

The patient's saliva has been tested for antibacterial activity. What saliva component has antibacterial properties?

Lysozyme
Ceruloplasmin
Amylase
Parotin
Cholesterol

A 35-year-old man has come to a dentist with complaints of decreased density of dental tissue and increased brittleness of his teeth during consumption of solid food. Laboratory analysis measured Ca/P correlation in the enamel sample. What value of Ca/P indicates increased demineralization?
0.9
1.67
2.5
1.5
1.85

Lab rats were used to study the effect of a certain vitamin on the body. Deficiency of this vitamin has resulted in a disturbed reproductive function and skeletal muscle dystrophy. What vitamin is it?
E
K
D
B2
A

In the patient's blood there is a C-reactive protein that chemically can be classified as a glycoprotein. It indicates the following pathology:
Rheumatism
Anemia
Porphyria
Leucopenia
Thrombocytopenia

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

A child presents with hepatomegaly, hypoglycemia, and convulsions that occur predominantly during fasting or in stressinducing situations. The child is diagnosed

with von Gierke disease (glycogen storage disease type I). What enzyme is affected by the genetic defect that is the cause of this disease?
Glucose 6-phosphatase
Glycogen phosphorylase
Glucokinase
Amylo-1,6-glycosidase
Phosphoglucomutase

Formation of a large amount of immunoglobulins with various antigen specificity from a small number of genes occurs due to:
Recombination
Transcription
Replication
Deletion
Translocation

A 6-year-old girl exhibits marked signs of hemolytic anemia. Biochemical anlysis of her erythrocytes shows deficiency of glucose 6-phosphate dehydrogenase enzyme. What metabolic process is disturbed in this patient and has leading role in the development of this pathology?
Pentose-phosphate pathway
Anaerobic glycolysis
Gluconeogenesis
Oxidative phosphorylation
Tissue respiration

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

A patient with Cushing syndrome presents with persistent hyperglycemia and glucosuria. This patient is likely to have increased production and secretion of the following hormone:
Cortisol
Adrenaline
Thyroxine
Aldosterone
Glucagon

The parents with normal hearing have two daughters and a son, who are congenitally deaf. Their other 5 children are healthy. What is the pattern of deafness inheritance in this case?
Autosomal recessive
X-linked dominant
X-linked recessive
Y-linked
Autosomal dominant

Two days after consumption of smoked pork a patient got face and eye-lid edemata, gastrointestinal disturbances, abrupt temperature rise, muscle pain. Blood analysis showed full-blown eosinophilia. What helminth could the patient be infected with?
Trichina
Pinworm
Ascarid
Whipworm
Hookworm

A child complains of general weakness, loss of appetite, a troubled sleep, itching in theperianal area. The provisional diagnosis is enterobiasis. In order to specify this diagnosis it is necessary to perform:
Scraping from perianal folds
Roentgenoscopy
Biopsy of muscle tissue
Immune diagnostics
Duodenal contents analysis

During regular examination of schoolchildren it was revealed that a 10 year old girl had asymmetric oval eggs with a larva in the scrape from her perianal folds. What diagnosis should be made?
Enterobiasis
Ascariasis
Amebiasis
Trichocephalosis
Ancylostomiasis

In the perianal folds of a 5-year-old girl her mother has found some white "worms" that caused itch and anxiety in the child. The "worms" were sent to the laboratory. During examination the physician saw white filiform helminths 0.5-1 cm long, with pointed ends, some helminths had twisted ends. What is the most likely diagnosis?
Enterobiasis
Diphyllobothriasis
Teniasis
Ascaridiasis

Opisthorchiasis

A 10-year-old child complains of weakness, nausea, irritability. Helminthes of white color and 5-10 mm long were found on the underwear. On microscopy of the scrape from the perianal folds achromic ova of the unsymmetrical form were revealed. Indicate what helminth is parasiting on the child?
Enterobins vermicularis
Ascaris lumbricoides
Ancylostoma duodenalis
Trichina
Trichuris

In one of Polessia regions there was an outbreak of helminthiasis manifested by cramps and facial edemas. The developed preventive measures in particular included ban for eating infested pork even after heat processing. What helminthiasis was the case?
Trichinosis
Taeniarhynchosis
Teniasis
Echinococcosis
Alveococcosis

A doctor revealed tissues injury on patient's scalp with localized suppurations and diagnosed his disease as myiasis. This infestation is caused by larvae of the following insect:
Wohlfahrtia fly
Kissing bug
Stable fly (Stomoxys calcitrans)
Malarial mosquito
Mosquito

According to the data collected by WHO researchers, every year approximately 250 millon malaria cases occur in the world. This disease can be encountered predominantly in tropical and subtropical areas. The spread of this disease matches the natural habitat of the following genus of mosquitoes:
Anopheles
Culiseta
Aedes
Culex
Mansonia

According to the data of WHO, for about 250 mln of Earth population fall ill with malaria. This disease is mostly spread in tropical and subtropical regions. Range of its spread falls into the areal of the following mosquitoes:
Anopheles

Culex
Aedes
Mansonia
Culiseta

In the South and Central America there can be found a species of trypanosomes that is the causative agent of Chagas disease. What animal is the infection carrier specific to this disease?
Triatomine bug
Cockroach
Tsetse fly
Mosquito
Gnat

Ingestion of plants and mushrooms that grow along highways is dangerous due to risk of lead poisoning. What is the main source of environmental pollution with this chemical element?
Exhaust fumes
Sewage
Acid rains
Herbicides
Chemical fertilizers

Representatives of a certain human population can be characterized by elongated body, height ariability, decreased volume of muscle mass, increased length of limbs, decreased size and volume of rib cage, increased perspiration, decreased indices of base metabolism and fat synthesis. What type of adaptive evolution is it?
Tropical
Arctic
Moderate
Intermediate
Mountain

People of various nationalities, who live in the Arctic climate, develop a number of features to adapt to their environment. Representatives of the Arctic adaptive type compared to the natives of the Central Africa have the following characteristic feature:
Increased layer of subcutaneous fat
Hyperhidrosis
Lower need for fat intake
Lean stature
Elongated legs and shorter arms

A baby has microcephaly. Doctors believe that this condition is caused by the baby's mother taking actinomycin D during her pregnancy. What germ layers have been affected by this teratogen?
Ectoderm
Mesoderm
Endoderm
All the germ layers
Endoderm and mesoderm

Name the change in the nucleotide sequence of a gene that is associated with the rotation of a certain DNA segment by 180°.
Inversion
Deletion
Translocation
Repair
Duplication

The parents of a newborn came for medical and genetic counseling. Their baby is suspected to have Edwards syndrome that manifests as micrognathia, microstomia, and a short upper lip. What testing methods are necessary to clarify the diagnosis?
Cytogenetics
Biochemistry
Immunogenetics
Clinical genealogy
Dermatoglyphics

Name the sequence of special functional DNA segments and structural genes that encode synthesis of a certain group of proteins that belong to one metabolic series.
Operon
Terminator
Operator
Promoter
Regulator gene

Biochemical analysis of amino acid composition of freshly synthesized polypeptides shows that in the process of translation, in each of these proteins the first amino acid is always the same one. Name this amino acid.
Methionine
Histidine
Isoleucine
Phenylalanine
Serine

A 36-year-old male comes to the dental office for extraction of the tooth. Two weeks after the procedure is performed, the stratified squamous epithelium regenerates at

the site of extraction. Which of the following organelles is most likely involved in the mucosa regeneration?
Ribosomes
Smooth endoplasmic reticulum
Centrosomes
Lysosomes
Mitochondria

A 36-year-old woman goes into labor at 38 weeks. After several hours of labor a male infant is born with fever, hydrocephalus, hepatosplenomegaly, jaundice, bilateral chorioretinitis and cerebral calcifications. Which of the following protozoan infections is the most likely cause of the infant`s condition?
Toxoplasmosis
Balantidiasis
Amebiasis
Trichomoniasis
Giardiasis

At the molecular level, the process of spontaneous passive transport of water-soluble molecules across the cell membrane takes place in living organism. The molecules move across the cell membrane from the area of a higher concentration towards the area of a lower concentration using specific transmembrane integral proteins. This type of transport does not directly require the chemical energy obtained in the process of ATP hydrolysis. Name this process.
Facilitated diffusion
Osmosis
Pinocytosis
Endocytosis
Active transport

No nitrogenous base that is a component of one DNA codon can be at the same time a component of another codon. What characteristic of the genetic code is it?
Non-overlapping
Specificity
Triplet structure
Universality
Collinearity

What hereditary disorders cause sickle cell anemia?
Gene mutation
Crossing-over
Disturbances of the mechanisms of genetic information transmission
Genomic mutation
Transduction

During meiosis, various combinations of genes form in the gametes, which ensures the appearance of new traits in the offspring. What type of variability is it?
Combinative variation
Mutational variability
Modificational variability
Chromosomal variability
Phenotypic (modificational) variability

After organ heterotransplantation transplant rejection was detected. What cells cause this process?
Killer T cells
Helper T cells
Macrophages
Suppressor T cells
B lymphocytes

In alkaptonuria, concentration of a certain acid increases in urine. Name this acid.
Homogentisic acid
Uric acid
Pyruvic acid
Phenylpyruvic acid
Acetoacetic acid

During amniocentesis, fetal cells contained two sex chromatin bodies (Barr bodies). What disease can be characterized by this finding?
Trisomy X
Patau syndrome
Turner syndrome
Klinfelter syndrome
Down syndrome

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 disease:
(47, XXX)
(47, XYY)
(47, XXY)
(45, X0)
(47, YYY)

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?

Gene mutation
Transduction
Genomic mutation
Crossing-over
Disturbances of the mechanisms of genetic information transmission

Patients from the same family were admitted to a hospital with edema of the eyelids and face, fever, eosinophilia, headache, and muscle pain. The disease onset occurred 7-10 days after eating pork sausage. Make the diagnosis.
Trichinellosis
Cysticercosis
Echinococcosis
Taeniasis
Taeniarhvnchosis

A woman came to a genetic consultancy, concerned about the risk of giving birth to a son with hemophilia. Her husband has been suffering from this disorder since birth. The woman is healthy and there were no people with hemophilia among her ancestors. Determine the likelihood of a boy with hemophilia being born in this family:
Equals 0%
Equals 25%
Equals 1009
Equals 75%
Equals 50%

A young man provisionally diagnosed with Klinefelter syndrome came to a genetic consultancy. What genetic method can be used to confirm the diagnosis?
Cytogenetics
Genealogy
Twin study
Biochemistry
Population statistics

An infant presents with colored sclerae and mucous membranes. The infant's urine becomes dark when exposed to air. Homogentisic acid was detected in blood and urine. What disease is likely to be the cause of the infant's condition?
Alcaptonuria
Galactosemia
Albinism
Tlistidincmia
Cystinuria

A couple gave birth to a son with hemophilia. The parents themselves are healthy; but the maternal grandfather has hemophilia. Determine the type of inheritance of this trait:
Sex-linked recessive
Autosomal recessive
Sex-linked dominant
Autosomal dominant
Y-linked

A man suffers from acne and inflammatory changes in the skin of his face. Microscopy of a material obtained from the lesion foci reveals living elongated creatures of the phylum Arthropoda type with 4 pairs of reduced limbs. What is the preliminary diagnosis?
Demodecosis
Sarcoptes scabiei lesions
Pediculosis
Flea lesions
Allergy

When examining a child, the pediatrician noted that the child presents with delayed physical and mental development. Urinalysis showed an acute increase in the levels of a keto acid that produces a qualitative color reaction with ferric chloride. What metabolic disturbance was detected in this case?
Phenylketonuria
Tyrosinemia
Alkaptonuria
Albinism
Cystinuria

The process of tissue respiration is accompanied by oxidation of organic compounds and synthesis of macroergic molecules. In what organelles does this process occur?
Mitochondria
Peroxisomes
Ribosomes
Golgi apparatus
Lysosomes

A man, who recently returned from an African country, came to theurologist complaining of painful urination. A urine sample, obtained for analysis during the daytime, contains eggs with a characteristic spike. Make the diagnosis.
Opisthorchiasis
Urogenital schitosomiasis
Dicroceliasis
Japanese schistosomiasis
Intestinal schistosomiasis

Karyotyping detected 47 chromosomes (3 copies of chromosome 13) in a newborn child with multiple defects of the skull, limbs, and internal organs. What diagnosis can be made in this case?
Patau syndrome
Down syndrome
Turner syndrome
Edwards syndrome
Klinefelter syndrome

A woman came to a medical and genetic consultancy requesting to assess the risk of hemophilia in her children. Her husband has hemophilia. History-taking revealed that the woman's family had no cases of hemophilia. What is the risk of this couple giving birth to a child with this disease?
Absent
75%
25%
100%
50%

In a maternity hospital, due to a mistake made by a nurse, it became necessary to determine the biological parents of the newborn babies. What must be analyzed to determine the child's parentage?
Nuclear DNA
Ribosomal RNA
Mitochondrial DNA
Small nuclear RNA
Messenger RNA

A patient with probable liver abscess was delivered to a surgical department. The patient for a long time had been on an assignment in an African country' and had recurrent cases of acute gastrointestinal disturbance. What protozoan disease can it be?
Amebiasis
Leishmaniasis
Trypanosomiasis
Toxoplasmosis
Malaria

In Tay-Sachs amaurotic idiocy that has an autosomal recessive pattern of inheritance, irreversible severe disorders of the central nervous system develop, leading to death in early childhood. In this disease, disturbed metabolism of certain substances is observed. Name these substances.
Lipids
Nucleic acids

Minerals
Carbohydrates
Amino acids

The father and mother are healthy. Amniocentesis detects that the karyotype of the fetus is 45 XO. Make the diagnosis.
Turner syndrome
Cri-du-chat syndrome
Edwards syndrome
Trisomy X
Patau syndrome

The molecule of immature mRNA (pro-mRNA) contains more triplets than there are amino acids in the synthesized protein, because translation is normally preceded by:
Processing
Mutation
Initiation
Replication
Repair

A molecular-level-process of spontaneous passive transport of water-soluble molecules across a cell membrane is modeled. The molecules move across cell membranes from an area of higher concentration toward an area of lower concentration via specific transmembrane integral proteins. This transport does not directly require chemical energy from ATP hydrolysis. Which of the following transport mechanisms is most likely mentioned?
Facilitated diffusion
Pinocytosis
–
Osmosis
Active transport

During histologic examination of the skeletal muscle specimen, the investigator discovers an organelle that has 2 membranes: smooth outer membrane and internal, that forms multiple ridges of visible folds (crysts). Which of the following is the most likely function of this structure?
Formation of mitotic spindle
Synthesis of carbohydrates
Synthesis and energy accumulation in the form of ATP
–
Intracellular digestion of macromolecules

A patient with chronic hepatitis undergoes blood test for serum protein fractions. Total protein levels are low, which indicates that in the hepatic cells the following organelles are functionally disturbed:

Granular endoplasmic reticulum
Mitochondria
Cytoskeleton
Golgi apparatus
Lysosomes

A patient with pulmonary tuberculosis is prescribed rifampicin that inhibits RNA-polymerase enzyme at the stage of initiation of the following process:
Termination
Transcription
Translation
Replication
Elongation

According to the law of constancy of chromosome numbers, most animal species have definite and constant chromosome number. The mechanism that maintains this constancy during sexual reproduction of organisms is called:
Schizogony
–
Regeneration
Amitosis
Meiosis

According to the law of constancy of chromosome numbers, most animal species have definite and constant chromosome number. The mechanism that maintains this constancy during sexual reproduction of organisms is called:
Meiosis
Schizogony
Amitosis
Regeneration
–

Students study the stages of gametogenesis. They analyze a cell with haploid number of chromosomes, with each chromosome consisting of two chromatids. The chromosomes are located in the equatorial plane of the cell. Such situation is typical of the following stage of meiosis:
Metaphase of the second division
Metaphase of the first division
Anaphase of the first division
Anaphase of the second division
Prophase of the first division

Hypertrichosis is the Y-linked character. The father has hypertrichosis, and the mother is healthy. In this family, the probability of having a child with hypertrichosis is:

0.5
0.25
0.125
0.625
1

As a result of prophylactic medical examination a 7 year old boy was diagnosed with Lesch-Nyhan syndrome (only boys fall ill with it). The boy's parents are healthy but his grandfather by his mother's side suffers from the same disease. What type of disease inheritance is it?
Recessive, sex-linked
Dominant, sex-linked
Autosomal recessive
Autosomal dominant
Semidominance

Study of genealogy of some family is revealed that hypertrichosis is observed in each generation only for men and inherited from a father to the son. Define the type of inheritance:
Y-linked
Autosomal-recessive
Autosomal-dominant
X-linked recessive
X-linked dominant

Genealogical analysis of the family showed the traits of anomaly of teeth (dark enamel), this trait was passed from a mother equally to the daughters and sons, but from a father only to daughters. Define type of inheritance:
X-linked dominant
Y-linked
Autosomal-recessive
X-linked recessive
Autosomal-dominant

Enamel hypoplasia is inherited as X-linked dominant trait. In some family a mother has suffered from anomaly but father is healthy (in the family of the wife father was ill). What is the probability of a son being born with normal teeth:
50%.
75%.
25%.
0%.
100%.

A man suffering from a hereditary disease married a healthy woman. They got 5 children, three girls and two boys. All the girls inherited their father's disease. What is the type of the disease inheritance?
Dominant, X-linked
Autosomal-recessive
Autosomal-dominant
Y-linked
Recessive, X-linked

Exposure to colchicine resulted in metaphase plate of a human containing 23 chromosomes more than it is normal. Name this mutation:
Polyploidy
Aneuploidy
Polyteny
Inversion
Translocation

Parents of a sick 5-year-old girl visited a genetic consultation. Karyotype investigation revealed 46 chromosomes. One chromosome of the 15th pair was abnormally long, having a part of the chromosome belonging to the 21st pair attached to it. What mutation occurred in this girl?
Translocation
Deletion
Inversion
Deficiency
Duplication

Fetal malformations can be caused by such maternal diseases as rubella, syphilis, toxoplasmosis, cytomegaly, herpes, and chlamydiosis. These malformations belong to the following type of variability:
Modification
Mutational
Combinative
Genomic imprinting
Epimutational

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:
Phenocopy
Mutation
Recombination
Heterosis
Replication

As a result of treatment of viral RNA with nitrous acid, UCA triplet mutated to UGA triplet. What kind of mutation occurred?
Transition
Nucleotide deletion
Missense
Nucleotide insertion
Inversion

In some regions of South Africa there is a spread sickle-shaped cell anemia, in which erythrocytes have shape of a sickle as a result of substitution of glutamin by valine in the hemoglobin molecule. What is the cause of this disease?
Gene mutation
Disturbance of mechanisms of genetic information realization
Crossingover
Genomic mutations
Transduction

Part of the DNA chain turned about 180 degree due to gamma radiation. What type of mutation took place in the DNA chain?
Inversion
Deletion
Doubling
Translocation
Replication

46 chromosomes were revealed on karyotype examination of the 5-year-old girl. One of the 15th pair of chromosomes is longer than usual due to connected chromosome from the 21 pair. What type of mutation does this girl have?
Translocation
Deletion
Inversion
Insufficiency
Duplication

A mother had taken synthetic hormones during pregnancy. Her daughter was born with hirsutism formally resembling of adrenal syndrome. Such manifestation of variability is called:
Phenocopy
Mutation
Recombination
Heterosis
Replication

A child with a normal karyotype is diagnosed with cleft lip and hard palate, defects of the cardiovascular system, microcephaly. The child's mother suffered rubella during pregnancy. This pathology in the child may be an example of:
Genocopy
Trisomy
Phenocopy
Monosomy
–

An athlete before a sports contest presents with elevated blood pressure and heart rate. What part of the CNS induces these changes?
Cerebral cortex
Medulla oblongata
Diencephalon
Mesencephalon
Hypothalamus

A patient complains that even small traumas lead to persistent hemorrhages. Laboratory analysis shows disturbed blood composition, namely a low count of the following blood corpuscles:
Platelets
Erythrocytes
Lymphocytes
Monocytes
Neutrophils

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 are the most likely to be caused by increased secretion of the following hormone:
Aldosterone
Glucagon
Testosterone
Oxytocin
Adrenaline

In an experiment a peripheral segment of the sympathetic nerve that innervates the sublingual gland is being stimulated. In this case this gland will produce:
A small amount of viscous saliva
A small amount of non-viscous saliva
No saliva
A large amount of non-viscous saliva
A large amount of viscous saliva

An athlete overexerted himself during a training and developed a muscle contracture. In such cases the muscle loses its flexibility and gradually becomes rigid due to its inability to relax. What is the likely cause of the contracture in this case?
ATP deficiency
Decreased blood levels of Ca++
Tropomyosin structural changes
Increased blood levels of K+
Increased blood levels of lactic acid

Condition of a patient with thoracic trauma deteriorates quickly: he develops increasing asphyxiation, facial pallor, tachycardia. What is the likely cause of these developments?
Pneumothorax
Thoracic contusion
Response to pain stimulus
Fright
Rib fracture

A man was submerged into the ice-cold water and soon died of abrupt exposure to cold. In such cases an organism loses heat most intensively by the way of:
Heat conduction
Radiation
Heat conduction and radiation
–
Convection

In hot weather the bus passengers asked to open the roof hatches. What way of heat transfer is activated in this situation?
Convection
Radiation
Conduction
Conduction and radiation
Sweat evaporation

People with diseases of internal organs often assume forced positions (e.g. with lower limbs flexed and pressed to the abdomen) due to the following reflex response:
Visceromotor
Dermatovisceral
Viscero-visceral
Viscerodermal
Motor-visceral

A 30-year-old woman has developed signs of virilism (body hair growth, balding temples, disturbed menstrual cycle). This condition can be caused by hyperproduction of the following hormone:

Testosterone
Relaxin
Prolactin
Oxytocin
Estriol

A dentist has to spend much of his time on his feet when working, which can result in a venous congestion in the legs and varicose veins. Leading mechanism of congestion in this case is the decrease of:
Skeletal muscle contraction in the lower limbs
Cardiac residual pumping force
Diaphragmatic piston effect on the abdominal organs
Blood pressure gradient in the veins
Thoracic pump effect

A car accident victim presents with a spinal hematoma accompanied by retrosternal pain, tachycardia, and elevated blood pressure. The patient's condition results from the damage to the following segments of the spinal cord:
Th1-Th5
L1- L3
–
S1-S3
C6-C8

In an experiment the vagus is being stimulated, which results in increased acetylcholine entry to the synaptic cleft, and that in turn results in the decreased heart rate due to the following mechanism:
Hyperpolarization of cardiomyocyte membrane
Increase in AV nodal conduction velocity
Decrease of action potential duration
Increase of action potential duration
Depolarization of cardiomyocyte membrane

During a brain surgery stimulation of the cerebral cortex resulted in tactile and thermal sensations in the patient. What gyrus was stimulated?
Postcentral gyrus
Cingulate convolution
Superior temporal gyrus
Precentral gyrus
Parahippocampal gyrus

Curariform drugs are used to immobilize the patient during a surgery. Their mechanism of action is based on the blockade of:
Nicotinic acetylcholine receptors of skeletal muscles
Noradrenaline release into the synaptic cleft

Acetylcholine release into the synaptic cleft
Conduction of excitation in the nerve fibers
Muscarinic acetylcholine receptors of smooth muscles

A man complains of varicose veins on his left leg. Venous nodes are located on the posterior surface of the shin and on the posterior and anterior surfaces of the thigh. What superficial leg veins are damaged in this patient?
Great saphenous vein, small saphenous vein
Popliteal vein, superficial saphenous vein
Small saphenous vein, deep femoral vein
Femoral vein, great saphenous vein, small saphenous vein
Posterior tibial vein, great saphenous vein

A patient presents with aspermia. What organ is functionally disturbed?
Testicle
Epididymis
Seminal vesicles
Prostate
–

A 10-day-old child has undergone a surgery to repair cleft upper lip (”harelip”). Cleft upper lip has resulted from the following in this case:
Nonclosure of frontal and maxillary processes of the first pharyngeal arch
Nonclosure of maxillary and mandibular processes of the first pharyngeal arch
Nonclosure of the second pharyngeal arch
Nonclosure of palatine tori of maxillary processes of the first pharyngeal arch
Nonclosure of the third pharyngeal arch

After facial trauma the patient developed a buccal hematoma. What salivary gland has its outflow blocked by the hematoma?
Parotid
Sublingual
Lingual
Buccal
Submandibular

A patient complains of painful chewing, especially when his lower jaw moves forward and to the side. It indicates functional disorder of the following muscles:
Lateral pterygoid muscles
Temporal muscles
Masseter muscles
Medial pterygoid muscles
Mylohyoid muscles

After a cold the patient developed impaired perception of pain and thermal stimuli in the front 2/3 of the tongue. What nerve was damaged in this case?
Trigeminal
Phrenic
Chorda tympani
Vagus
Hypoglossal

A 42-year-old man with an incised wound on the lower anterior surface of his shoulder came to the medical station. Objectively he presents with impaired forearm flexion. What muscles are likely to be damaged in this patient?
M. brachialis, m. biceps brachii
M. biceps brachii, m. anconeus
M. deltoideus, m. infraspinatus
M. deltoideus, m. biceps brachii
M. coracobrachialis, m. supraspinatus

During surgery on the stomach, the surgeon has cut the left gastric artery and ligated it. However the opposite end of the cut artery continued to bleed. What artery anastomoses with the left gastric artery?
Right gastric artery
Superior pancreaticoduodenal artery
Right gastroepiploic artery
Splenic artery
Left gastroepiploic artery

A woman has undergone a surgery for femoral hernia. In this case the hernial protrusion is projected into the:
Femoral triangle
Pubic region
Inguinal region
Gluteal region
–

A patient of tall stature with drooping lower lip, big nose, and large extremities has made an appointment with the doctor. What gland is likely to present with excessive secretion in this patient?
Anterior lobe of the pituitary gland
Thyroid gland
–
Parathyroid glands
Pineal gland

During a surgery on the right side of the neck, excursion of the right diaphragmatic dome was disturbed. This disturbance occurred because of the damage to the following nerve:
Right phrenic nerve
Left transverse cervical nerve
Supraclavicular nerve
Left phrenic nerve
Right transverse cervical nerve

A trauma patient has a wound in the temporal region, with trickle of bright red blood streaming from it. What blood vessel is damaged?
A. temporalis superficialis
A. occipitalis
A. maxillaris
A. auricularis posterior
A. facialis

On examination a woman was diagnosed with a retropharyngeal abscess. What cervical space should be accessed by the surgeon lancing this abscess?
Retrovisceral space
Suprasternal space
Previsceral space
Interscalene space
Prescalene space

Brain investigation by means of nuclear magnetic resonance revealed the patient to have a hematoma in the genu of the internal capsule. What pathway is damaged in this case?
Tr. cortico-nuclearis
Tr. cortico-thalamicus
Tr. thalamo-corticalis
Tr. cortico-spinalis
Tr. cortico-fronto-pontinus

A patient was diagnosed with a damaged intervertebral disk in the lumbar spine. What type of joint is it?
Synchondrosis
Symphisis
Syndesmosis
Synostosis
Diarthrosis

A patient complains of severe rhinitis and total loss of olfactory perception. Receptors of the olfactory analyzer are damaged in this patient. Where in the nasal cavity are these receptors located?

Superior nasal meatus
Inferior nasal meatus
Middle nasal meatus
Common nasal meatus
Choanae

A student uses percussion to determine the cardiac border that projects on the anterior thoracic wall at the level of the third costal cartilage. What cardiac border is being determined?
Upper
Left
Lower
Right
Apex

A trauma patient has a fracture in the petrous part of the temporal bone. The fracture line passes behind the internal auditory foramen. What canal of the temporal bone was damaged?
Facial canal
Carotid canal
Tympanic canal
Musculotubal canal
Canaliculus of the chorda tympani

A patient suffers from disturbed blood supply of the superior lateral surface of the cerebral hemispheres. What blood vessel is damaged?
Medial cerebral artery
Anterior communicating artery
Posterior communicating artery
Anterior cerebral artery
Posterior cerebral artery

Examination of a patient with disturbed process of saliva production in the parotid gland shows that the otic ganglion is likely to be damaged. This ganglion is formed by the following nerve:
N. petrosus minor
N. hypoglossus
N. auricularis magnus
N. petrosus major
N. vagus

During oral cavity examination a dentist noticed eruption of the permanent canines in a child. The child grows and develops normally. Determine the child's age:
11-13 years
8-9 years

9-10 years
13-16 years
6-7 years

A tooth has been extracted. Its crown is chisel-shaped, wide, with narrow edge. The root is cone-shaped and flattened from the sides. What tooth was extracted?
Upper incisor
Upper premolar
Lower canine
Lower premolar
Lower incisor

A man cannot lift his drooping lower jaw. What muscles of the head DO NOT function properly in this case?
Masseters
Buccinators
Superior auricular
Zygomaticus major
Zygomaticus minor

According to the data collected by WHO researchers, every year approximately 250 million malaria cases occur in the world. This disease can be encountered predominantly in tropical and subtropical areas. The spread of this disease matches the natural habitat of the following genus of mosquitoes:
Anopheles
Culex
Mansonia
Culiseta
Aedes

A child was hospitalized with diagnosis of diphtheria. What should be given to this child for specific therapy?
Diphtheria antitoxin serum, antibiotics
Diphtheria anatoxin, antibiotics
Diphtheria vaccines: DPT, DT, diphtheria vaccine
Diphtheria bacteriophage
Codivac vaccine, sulfanilamides

A man complaining of nausea, liquid stool with mucus and blood streaks, high temperature, and weakness was hospitalized into the infectious diseases department. The doctor suspects dysentery. What method of laboratory diagnostics would be the most effective for confirmation of this diagnosis?
Bacteriological analysis
Protozoan analysis
Mycological analysis

Serological analysis
Microscopy

A person bitten by a stray dog came to the surgeon's office. Wide lacerated wounds are localized on the patient's face. What rabies prevention aid should be provided to this person?
Begin immunization with antirabic vaccine
Prescribe combined vitamin therapy
Hospitalize the patient and continue to monitor his condition
Immediately administer normal gamma globulin
Immediately administer DPT vaccine

A bacteriological laboratory conducts the analysis of potable water quality. Microbial number of the water sample is approximately 100. What microorganisms were accounted for in this case?
All bacteria that have grown on a nutrient medium
Enteropathogenic bacteria and viruses
Human and animal pathogenic bacteria
Colibacilli
Opportunistic pathogenic bacteria

Often the cause of secondary immunodeficiency is organism exposure to an infection, agents of which reproduce directly in the cells of immune system and destroy them. Specify the diseases, during which the described above occurs:
Infectious mononucleosis, AIDS
Q fever, typhus
Poliomyelitis, viral hepatitis type A
Tuberculosis, mycobacteriosis
Dysentery, cholera

A sick child is suspected to have tuberculosis and is referred for Mantoux test. 24 hours later the place of allergen injection became swollen, hyperemic, and tender. What main components determine the development of this reaction?
Mononuclear cells, T-lymphocytes, and lymphokines
B-lymphocytes and IgM
Macrophages, B lymphocytes, and monocytes
Granulocytes, T-lymphocytes, and IgG
Plasma cells, T-lymphocytes, and lymphokines

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

Artificial passive
Natural passive

During identification of pure culture of microorganisms the most important part is a serological identification that is conducted by means of agglutination reaction. What components are necessary to conduct this reaction?
Unknown bacterial culture, specific antibodies
Unknown antibodies, nonspecific antigen
Thermoextract, specific serum
Specific antigen, known antibody, bacteria
Specific antigen, serum sample obtained from the patient

During laboratory diagnostics of hepatitis C, it is necessary to detect the presence of antibodies to hepatitis C virus in the patient's blood serum. What test should be conducted in this case?
Enzyme-linked immune-sorbent assay (ELISA)
Nucleic acid hybridization with signal amplification
Nucleic acid hybridization
Ligase chain reaction
DNA probe method

In the skin biopsy material in the epidermis there are cells with processes and dark brown granules in their cytoplasm. Name these cells:
Melanocytes
Intraepidermal macrophages
Merkel cells
Lymphocytes
Keratinocytes

A smear specimen of human red bone marrow shows, among myeloid cells and adipocytes, certain stellate cells with oxyphilic cytoplasm that are connected with their cellular processes. Name these cells:
Reticular cells
Dendritic cells
Osteocytes
Fibroblasts
Macrophages

A microslide shows a section of a beanshaped organ with cortical and medullary substances. Its cortical substance contains separate spheric nodules 0.5-1 mm in diameter; its medullary substance consists of medullary cords. This histological section demonstrates the following organ:
Lymph node
Spleen
Thymus

Kidney
Adrenal gland

A woman presents with edemas. In her urine there is a large amount of protein excreted. What nephron segment is functionally disturbed in this case?
Renal corpuscle
Distal convoluted tubule
Proximal convoluted tubule
Descending limb of loop of Henle
Ascending limb of loop of Henle

The urine sample was taken via a catheter from the urinary bladder of a 17-year-old young man. Microscopy of the urine precipitate in this case can detect cells of the epithelium that lines the urinary bladder. What epithelium is it?
Transitional epithelium
Non-keratinized stratified epithelium
Non-stratified cuboidal epithelium
Keratinized stratified epithelium
Non-stratified columnar epithelium

A connective tissue specimen stained with hematoxylineosin shows isogenous cell groups surrounded with basophilic intercellular substance. No fibrous structures are detected. What type of connective tissue is it?
Hyaline cartilage tissue
Splenial bone tissue
Dense fibrous tissue
Elastic cartilage tissue
Loose fibrous tissue

A sample obtained from the patient's thyroid gland was processed with silver salts, which revealed large argyrophilic cells in the follicular walls. What hormone is being secreted by these cells?
Calcitonin
Parathyrin
Adrenaline
Aldosterone
Thyroxine

A 50-year-old patient was diagnosed with myxedema. The development of this pathology is caused by disturbed production of certain hormones. Name these hormones.
Thyroxine and triiodothyronine
Insulin and glucagon
Cortisol and aldosterone
ACTH and growth hormone

Oxytocin and vasopressin

The physiological properties of human cardiac muscle include all of the listed below except:
Elasticity
Conductivity
Automaticity
Excitability
Contractility

Indirect calorimetry shows that the basal metabolic rate of a person is 40% lower than the norm. What endocrine gland does not function properly in this person, causing this condition?
Thyroid gland
Pineal gland
Pancreas
Adrenal gland
Thymus

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

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

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

Precentral gyrus

A newborn failed to take his first breath. Autopsy revealed that despite unobstructed airways the lungs of the newborn were unable to stretch. What is the most likely cause of this condition?
Absence of surfactant
Pleural thickening
Bronchial rupture
Alveolar enlargement
Bronchial narrowing

Premature excitation that occurs in the ventricular myocardium
Reduces the speed of excitation conduction through working cardiomyocytes
Increases the speed of excitation
Has no effect on the automaticity of the sinoatrial node
Reduces the automaticity of the sinoatrial node
Increases the automaticity of the sinoatrial node

What receptors respond to changes in gas composition of the blood that enters the brain?
All of the listed
Carotid sinus receptors
Aortic receptors
Bulbar receptors
–

A patient has high body temperature, increased basal metabolic rate, and tachycardia at rest, which can be caused by hyperfunction of the:
Thyroid gland
Pancreas
Neurohypophysis
Adrenal cortex
Gonads

A woman has edemas and high levels of urine protein. What nephron segment is dysfunctional in this case, as indicated by these signs?
Renal corpuscle
Distal convoluted tubule
Ascending limb of the loop of Henle
Proximal convoluted tubule
Descending limb of the loop of Henle

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

Hypothalamus
Medulla oblongata
Mesencephalon
Pineal gland
Pituitary

In an experiment, the processes of food and water hydrolysis products absorption were studied. It was determined that these processes mainly occur in the following gastrointestinal segment:
Small intestine
Oral cavity
Rectum
Large intestine
Stomach

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

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

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

During tooth development, dentin is the first tissue to be laid down. What is the source of its development?
Dental papilla
Outer enamel epithelium
Dental follicle

Dental lamina
Inner enamel epithelium

Prolonged exposure of a human body to toxic substances has resulted in destruction of the organelles that perform protein synthesis in the hepatocytes. Name these organelles
Ribosomes
Peroxisomes
Lysosomes
Mitochondria
-

Examination of a patient detects an anomaly of enamel development. What structural components of the tooth bud were damaged, causing this condition?
Inner enamel epithelium
Stratum intermedium
Outer enamel epithelium
Stellate reticulum
Cervical loop

In an experiment, ribosomes were destroyed in polychromatophilic erythroblasts of human red bone marrow. In this case, the synthesis of a certain specilic protein will be disturbed. Name this protein.
Globin
Fibrinogen
Laminin
Elastin
Collagen

A newborn failed to take his first breath. Autopsy revealed that despite unobstructed airways the lungs of the newborn were unable to stretch. What is the most likely cause of this condition?
Absence of surfactant
Pleural thickening
Bronchial rupture
Alveolar enlargement
Bronchial narrowing

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

Periodontium

Cancer cells form in the human body due to the effect of environmental factors. What cells provide antitumor protection?
Lymphocytes
Epitheliocytes
Erythrocytes
Platelets
Neurocytes

Examination of a hematopoietic organ reveals lobules formed by a lymphoid tissue with stroma that consists of epithelioreticular cells. What organ is being studied?
Thymus
Palatine tonsil
Spleen
Red bone marrow
Lymph node

A specimen shows a tissue with cells that are located separately and in isogroups. No fibrous structures can be detected within its intercellular substance. What tissue is demonstrated in this specimen?
Hyaline cartilaginous tissue
Epithelial tissue
Bone tissue
Smooth muscular tissue
Fibrous cartilaginous tissue

A woman has edemas and high levels of urine protein. What nephron segment is dysfunctional in this case, as indicated by these signs?
Renal corpuscle
Distal convoluted tubule
Ascending limb of the loop of Henle
Proximal convoluted tubule
Descending limb of the loop of Henle

An organ of the cardiovascular system is composed of cells that connect to each other with intercalated discs. What organ is it?
Heart
Mixed type artery
Muscular artery
Muscular vein
Aorta

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

Neurons
Epidermal cells
Endothelial cells
Smooth muscle cell
Hematopoietic cells

In an experiment, a myotome was destroyed in a rabbit fetus. This manipulation will result in malformation of the following structure:
Skeletal muscles
Serous membranes
Dermal connective tissue
Axial skeleton
Smooth muscles

In some hereditary diseases (e.g.Kearns-Sayre syndrome), mitochondrial destruction can be observed. What cellular processes can be disturbed in the result?
ATP synthesis
Lipid synthesis
Crossingover
Nuclear division
Protein synthesis

A teenager with impaired visual acuity came to an ophthalmologist. The doctor explained that this condition was caused by a spasm of accjmjdation. What component of an eyeball is a part of accommodation apparatus?
Ciliary muscle
Cornea
Retina
Sclera
Vitreus body

Mucus is known to always cover the epithelium of the nasal cavity proper. What cells of the mucosal epithelium in the nasal cavity synthesize mucus?
Goblet
Ciliated
–
Microvillous
Basal

A histological specimen shows three neurons- pseudounipolar, bipolar and multipolar. How many axons will each of these cell have?
One
Two
Many
None

Three

A woman is diagnosed with a hemorrhage into the posterior horns of the spinal cord. What is their function?
Sensory
Motor
Parasympathetic
–
Sympathetic

On an electronic microphotograph of epithelial tissue a cetrtain structure can be identified. The structure is located under the epithelial cells and shaped like a three-dimensional reticulum. Name this structure
Hemidesmosome
Cytolemma
Lamina propria
Basement membrane
Desmosome

An excessive bone tissue loss is often observed in older people, which indicates osteoporosis development. What bone tissue cells are activated, resulting in the development of this disease?
Osteoclasts
Macrophages
Osteocytes
Osteoblasts
Tissue basophils

Disturbed endoderm differentiation was detected in an embryo material. This process can lead to development changes in the following organs
Stomach
Heart
Aorta
Salivary gland
Kidneys

A urine sample was taken via a catheter from the urinsry bladder of a 17-year old young man. Microscjpy of the urine precipitate in this case can detect cells of the epithelium that lines the urinary bladder. What epithelium is it?
Transitional epithelium
Keratinized stratified epithelium
Non- stratified columnar epithelium
Non- stratified cuboidal epithelium
Non- Keratinized stratified epithelium

In the microslide of a human embryo obtained from a spontaneous miscarriage, an embryonic shield is visible and has two cellular layers: endoderm and ectjderm. This embryo was at the following developmental stage:
Gastrulation
Histogenesis
Organogenesis
Progenesis
Neurulation

Microslide of a cardiac tissue shows rectangular cells with central location of the nucleus and welldeveloped myofibrils that are connected with Z-disks. These cells perform the following cardiac function:
Contraction
Impulse conduction
Endocrine
Protective
Regeneration

The investigation of the imprints obtained from the epidermal ridges on the fingers (dactiloscopy) is used by criminologists to identify people, as well as for diagnostics of a number of genetic anomalies, e.g., Down syndrome. What skin layer determines the uniqueness of the imprints?
Papillary layer
Cornified layer
Basal layer
Translcent layer
Reticular layer

A topical anesthetic was applied to the tongue apex of an experiment participant. The resulting gustatory loss will make this person unable to feel the following taste:
Sweet
Sour and salty
Salty
Sour
Bitter

After examination, the signs of acromegaly were detected in a patient. What endocrine gland is involved in this pathological process?
Adenohypophysis
Adrenal gland
Pineal gland
Neurohypophysis
Thyroid gland

2 months after a kidney transplantation, the patients condition deteriorated. Based on laboratory analysis, it was determined that transplantant rejection started. What factor of the immune system plays the key role in the reaction of transplant rejection?
T killer cell
Interleukin 1
T helper 2 cell
B lymphocytes
Natural killer cell

Histologic specimen of a tooth slice shows a tissue consisting of intercellular substance permeated with tubules, in which cellular processes of odontoblasts are situated. What tissue is presented in this histologic specimen?
Dentin
Cement
Periodontium
Pulp
Enamel

An electronic microphotograph of a cell shows two different protein-destroying organelles. Name them
Lysosomes and proteasomes
Peroxisomes and ribosomes
Ribosomes
Golgi complex and microtubules
Endoplasmic reticulum and microfilament

After a nose trauna, a boxer developed an impaired sense of smell. What cells can cause a loss of smell, when damaged
Neurosensory epithelial cells
Microvillous epithelial cells
Basement epithelial cells
Supporting epithelial cells
Ciliary epithelial cells

Oral examination reveals marked reddening of mucosa at the root of the tongue. What structure is involved in the inflammatory process?
Lingual tonsil
Tonsil of torus tubaris
Pharyngeal tonsil
Veil of palate
Palatine tonsil

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

B lymphocyte
Immunoglobulins
D Immunoglobulins
E Plasmacytes

On tooth section in the area of the root apex there is a tissue consisting of cells with processes surrounded by mineralized intercellular substanc Name this tissue:
Cellular cement
Reticulofibrous bone tissue
Mantle dentin
Enamel
Periodontium

In the wall of a blood vessel there is a large number of elastic fibers in all the layers. The middle layer contains elastic fenestrated membranes. Such characteristics of the vessel wall structure are caused by the following factors
High blood pressure
Low blood pressure
Osmotic pressure
High blood flow velocity
Low blood flow velocity

In the bone tissue there are large multinucleated cells with processes that contain numerous lysosome. Name these cells
Osteoclasts
Chondroblasts
Chondrocytes
Mesenchymal cells
Semi-stem osteogenic cells

During microscopy of an embryo material, a yolk sac is visible in the microslide. What is the main function of this organ in the human body
Hemopoietic
Trophic
Excretory
Protective
Amniotic fluid production

On tooth section in the area of the root apex there is a tissue consisting of cells with processes surrounded by mineralized intercellular substance. Name this tissue
Cellular cement
Reticulofibrous bone tissue
Periodontium
Mantle dentin
Enamel

Histology of a tissue shows that it has no blood vessels and its cells tightly adhere to one another, forming layers. What tissue is it
Epithelial tissue
Muscle tissue
Nerve tissue
Bone tissue
Cartilaginous tissue

Histologic examination of a biopsy specimen shows a structure of the oral cavity composed of the bone tissue, which is covered by stratified squamous non-keratinizing epithelium and lamina propria. The specimen has also minor mucous salivary glands. In all parts of the lamina propria the collagenous fibers form thick bundles that bind the mucosa to the periosteum. Based on these findings, which of the following structures is the most likely presented
Hard palate
Cheek
Soft palate
Tongue
Lip

A child has a congenital immunodeficiency. The cell-mediated immunity is affected, causing frequent viral infections. It is likely to be caused by a disorder of the following organ
Thymus gland
Spleen
Red bone marrow
Lymph nodes
Palatine tonsils

Histological microslide shows a section of a vessel that can be characterized by regular round shape. The vessel is gaping; its wall consists of 3 layers. The middle layer is fenestrated with 30-40 elastic membranes. What vessel is exhibited in the microslide?
Elastic artery
capillary
Muscular artery
Muscular vein
Mixed type artery

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

Microcytosis
Macrocytosis

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

Secretory units of salivary glands are surrounded with specific contractile cells. Name these cells:
Myoepithelial cells
Adipocytes
Ciliated cells
Endotheliocytes
Pericytes

Cells of basal layer of epidermis were damaged due to exposure to radiation. What function of epidermis will be impaired or inhibited first?
Regenerative
Absorption
Barrier
Dielectric
Protective

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

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

Thin tubule
Capillaries of peritubular capillary network

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

A cell is an elementary living system that ensures proper structure, development, functioning, adaptation, procreation, and regeneration of the organism. Name the three main structural components of a cell:
Cell membrane (plasmalemma), cytoplasm, nucleus
Cytoplasm, organelles, nucleus
Glycocalyx, nucleus, organelles
Hyaloplasm, plasmalemma, nucleus
Cell membrane (plasmalemma), inclusions, organelles

In an experiment, the myotome was destroyed in a rabbit fetus. This manipulation will result in malformation of the following structure:
Skeletal muscles
Smooth muscles
Serous membranes
Axial skeleton
Dermal connective tissue

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

A 14-year-old patient presents with disturbed twilight vision. What vitamin is deficient in the body of this patient?
A
B12
B6
B1
C

Chronic inflammation of gingiva resulted in excessive growth of connective tissue fibers. What cell elements are leading in the development of this condition?
Fibroblasts
Osteoblasts
Osteoclasts
Fibrocytes
Macrophages

Gastroscopy of a patient revealed insufficient amount of mucus in the coating of the mucous membrane. It can be caused by the dysfunction of the following cells of gastric wall:
Cells of prismatic glandular epithelium
Cervical cells
Parietal cells of gastric glands
Main exocrinocytes
Endocrinocytes

A newborn failed to take his first breath. Autopsy revealed that despite unobstructed airways the lungs of the newborn were unable to stretch. What is the most likely cause of this condition?
Absence of surfactant
Pleural thickening
Alveolar enlargement
Bronchial rupture
Bronchial narrowing

Longitudinal tooth section shoes a tissue that makes up the tooth basis and consists of collagen fibers, mineralized matrix, and tubules that hold dentinal fibers. This tissue develops from:
Peripheral part of dental papilla
Internal cells of enamel organ
External cells of enamel organ
Dental saccule
Intermediate cells of enamel organ

At the cementoenamel junction there are non-calcified areas, through which infection often penetrates into the tooth. Name these structures:
Enamel tufts
Odontoblasts
Ameloblasts
Tomes' dentinal fiber
Enamel prisms

On tooth section in the area of the root apex there is a tissue consisting of cells with processes surrounded by mineralized intercellular substance. Name this tissue:

Cellular cement
Mantle dentin
Periodontium
Reticulofibrous bone tissue
Enamel

Differentiation of B-lymphocytes into plasma cells leads to synthesis of immunoglobulins that ensure specific immune response of the body. Differentiation of B-lymphocytes takes place in the following organ of immune system:
Tonsils
Thymus
Red bone marrow
Thyroid gland
Liver

Histologic specimen of endometrium demonstrates isolated epithelial cells with chromosomes that form a ''plate" located in the equatorial plane of the cell. What stage of the cell cycle is it?
Metaphase
Interphase
Telophase
Prophase
Anaphase

Histologic specimen of renal cortex shows renal corpuscle and renal tubules. It is known that reabsorption of substances occurs in the renal tubules. What nephron tissue takes part in this process?
Epithelial tissue
Mucous tissue
Reticular tissue
Connective tissue proper
Cartilaginous tissue

A histological specimen shows terminal secretory parts of glands made of conic cells with basophilic cytoplasm and a roundish nucleus in the centre. Specify the type of terminal secretory parts by the type of secretion:
Combined
Sebaceous
Mucous
Serous
Seromucous

Examination of histological specimen of oral mucosa reveals non-keratinized stratified squamous epithelium with lymphocyte infiltrations. What structure of oral cavity is the most likely to be represented by this mucosa specimen?

Tonsil
Gums
Hard palate
Lip
Cheek

A patient has suffered a head injury. On examination there is a subcutaneous hematoma in the temporal area. What vessel was damaged, thus resulting in hematoma development?
temporalis superficialis
A. Maxillaris
A. auricularis posterior
A. buccalis
A. Occipitalis

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?
Tr.cortico-nuclearis
Tr.cortico-spinalis
Tr.cortico-thalamicus
Tr.cortico-fronto-pontinus
Tr.thalamo-corticalis

A patient has been hospitalized with skull trauma. His examination established absence of volitional movements of his head and neck muscles. What part of brain can cause this effect if damaged?
Lower part of precentral gyrus
Lower part of postcentral gyrus
Upper part of precentral gyrus
Upper part of postcentral gyrus
Inferior frontal (Broca's) gyrus

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:
Atlantooccipital
Lateral atlantoaxial
Median atlantoaxial
Zygapophysial
-

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?
Accessory
Vagus
Infrascapular
Transverse cervical nerve
Thoracodorsal

A 40-year-old male has hearing impairment and paresis of facial muscles resulting from a blow to his head. He was diagnosed with a hematoma of cerebellopontine angle. What nerves had been damaged?
VII, VIII pair of cranial nerves
V, VI pairs of cranial nerves
VIII, IX pairs of cranial nerves
IX, X pair of cranial nerves
-

Trauma of occipital region of head resulted in crack fracture in the region of transverse sinus. What part of occipital bone is damaged?
Squama
Left lateral
Right lateral
Proximal
Condyle

A victim who had been rescued from under the ruins was found to have confused mental state, multiple subcutaneous haemorrhages on his head and neck, small wound on the face. There was a scalping in the posterosuperior parts of head and a significant deformation of head contours. What bones might have been damaged?
Parietal and occipital bone
Sphenoid bone and mandible
Frontal and nasal bones
Temporal bone and maxilla
Malar and lacrimal bones

As a result of road accident a driver got multiple injuries of lateral surface of his head including the malar arch fracture. What muscle's function will be damaged?
M. masseter
M. orbicularis oris
M. buccinator
M. procerus
M. risorius

A 28 year old man with cut wound of frontal skin was admitted to the hospital. A vessel that supplies blood to the frontal part of head was ligated in order to stop bleeding. What vessel was ligated?
A.supraorbitalis
A.infraorbitalis
A.angularis
A.dorsalis nasi
A.temporalis superf icialis

A 5 year old child suffers from the neck deformity. Clinical examination revealed such symptoms: apparent flexion of head to the left, his face is turned right, passive movements of the head to the right are restricted. What muscle's development was disturbed in this case?
Sternocleidomastoid
Trapezius
Splenius muscle of head
Sternosublingual
Long muscle of head

A person in the state of nervous tension develops transverse wrinkles on the forehead. What muscle contracts to produce this result?
M. occipitofrontalis
M. procerus
M. corrugator supercilii
M. temporoparietalis
M. auricularis anterior

A patient with trauma has an epidural hematoma in the temporal region. What artery was damaged?
Middle meningeal artery
Posterior communicating artery
Anterior meningeal artery
Medial cerebral artery
Anterior cerebral artery

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

Facial nerve
Mandibular nerve
Maxillary nerve
Trochlear nerve
Oculomotor nerve

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

In a 12-year-old patient an inflammatory process in the internal ear spread to the meninges, diffusely affecting them. A doctor suspects the process to have spread through the connection between the subarachnoid space of the brain and perilymphatic space of the internal ear. What anatomic structure became the pathway for the spreading inflammation?
Aqueductus vestibuli
Fossa subarcuata
Hiatus canalis n. petrosi majoris
Hiatus canalis n. petrosi minoris
Fissura petrosquamosa

A patient with a nasal trauma presents with skull fracture that circles the piriform opening. What bone is damaged?
Nasal
Lacrimal
Maxillary
Frontal
Ethmoid

During examination of a woman she was found to have a luminal narrowing of the right jugular foramen (foramen jugulare ). What cranial bones form this foramen?
Temporal and occipital
Occipital and frontal
Temporal and cuneiform
Occipital and cuneiform
Cuneiform and palatine

A patient suffers from an inflammatory process in the area of the lower wall of orbital cavity. What anatomical structure makes it possible for the inflammatory process to spread to the pterygopalatine fossa?

Inferior orbital fissure
Superior orbital fissure
Supraorbital incisure
Posterior ethmoidal foramen
Optic canal

A patient is diagnosed with deformed posterior portion of the nasal septum. What bone is deformed?
Vomer
Medial pterygoid plate
Lateral pterygoid plate
Perpendicular plate of ethmoid bone
Vertical plate of palatine bone

Lateral X-ray of the occipital bone area demonstrates fracture of the occipital condyle. Integrity of the following anatomical structure is disturbed:
Canalis nervi hypoglossi
Canalis caroticus
Foramen ovale
Foramen stylomastoideum
Foramen mastoideum

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?
Foramen sphenopalatinum
Foramen rotundum
Canalis palatinus major
Canalis palatinus minor
Canalis ptherygoideus

A patient has a skull fracture located in front of the foramen magnum. What bone is damaged?
Pars basilaris ossis occipitalis
Pars lateralis ossis occipitalis
Pars squamosa ossis occipitalis
Pars squamosa ossis temporalis
Pars petrosa ossis temporalis

Otopyosis has caused tympanic cavity roof to be broken by pus. From tympanic cavity pus spreads to the following cranial fossa:
Middle cranial fossa
Posterior cranial fossa
Anterior cranial fossa
Orbit
Sphenopalatine fossa

A patient complains of painful chewing, especially when his lower jaw moves forward and to the side. It indicates functional disorder of the following muscles:
Lateral pterygoid muscles
Medial pterygoid muscles
Masseter muscles
Mylohyoid muscles
Temporal muscles

A patient has been hospitalized with skull trauma. His examination established absence of volitional movements of his head and neck muscles. What part of brain can cause this effect if damaged?
Lower part of precentral gyrus
Lower part of postcentral gyrus
Upper part of precentral gyrus
Upper part of postcentral gyrus
Inferior frontal (Broca's) gyrus

A patient has chronic rhinitis. Nasal cavity mucosa swelling causes disruption of the olfactory nerve receptors placed in the nasal cavity olfactory region. What formation allows for olfactory nerve endings to enter into anterior cranial fossa?
Lamina cribrosa os ethmoidale
Foramen ethmoidale anterior
Foramen ethmoidale posterior
Foramen sphenopalatinum
Foramen incisivum

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:
Os incisivum et processus palatinus maxillae
Processus palatinus maxillae dextrae et sinistrae
Lamina horizontalis os palatinum dextrum et sinistrum
Processus palatinus maxillae et lamina horizontalis os palatinum
In the region of canalis incisivus

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:
Petrotympanica
Tympanomastoidea
Petrosguamosa
phenopetrosa
Petroocipitalis

A 36-year-old injured has an occipital bone injury causing damage to the sigmoid sinus. What part of the bone is damaged?
Pars lateralis
Clivus
Pars basilaris
Squama
-

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:
Oval
Round
Spinous
Jugular
Sphenotic

It is required to anaesthetize the right lower molars. The proper injection site forthe conduction anaesthesia is:
The region of the right mandibular foramen
The gums to the right of mandible
The region of the right mental foramen
The region of suborbital foramen
The region of the oval foramen

Trauma of occipital region of head resulted in crack fracture in the region of transverse sinus. What part of occipital bone is damaged?
Squama
Left lateral
Right lateral
Proximal
Condyle

In order to fix dislocated mandible it is necessary to pull it down. What anatomic structure requires this action?
Articulate tubercule of temporal bone
Condylar process of mandible
Mandibular fossa of temporal bone
Mandibular incisure
Coronal process of mandible

A woman has come to a dentist with complaints of bruising and swelling around her eye. Anamnesis is as follows: several days prior her 1st premolar tooth had been extracted, with infraorbital anaesthesia administered; several days later hematoma

appeared in the area of foramen intraorbitale . The branch of the following artery was damaged:
Maxillary artery
Facial artery
Superficial temporal artery
Superior labial artery
Masseteric artery

Following a cold, a patient developed numbness on the right side of his face. Examination revealed a disturbance of pain and temperature sensitivity on the right side of the face. What nerve is damaged?
Trigeminal
Facial
Glossopharyngeal
Vagus
Hypoglossal

A woman complains of painful chewing, especilly when she moves her lower jaw backwards. What muscles are affected?
Posterior bundles of the temporal muscles
Anterior bundles of the temporal muscles
Medial pterygoid muscles
Lateral pterygoid muscles
Masseter muscles

A patient with electrical injury to the neck area developed pathologic fixed sideways flexion of the head towards the injured area, while the face is fixed away from the injury. What neck muscle sustained scarring?
Sternocleidomastoid muscle
Anterior scalene muscle
Trapezius muscle
Omohyoid muscle
Digastric muscle

A patient with knife wound of the neck presents with hemorrhage. Initial wound management revealed damage to the vessel that is located along the lateral edge of the sternocleidomastoid muscle. Name this vessel:
V. jugularis externa
V. jugularis anterior
A. carotis externa
A. carotis interna
V. jugularis interna

A patient has a craniocerebral trauma. X-ray examination revealed a fracture of skull base. The fracture line passes through the spinous and round foramens. What bone is damaged?
Sphenoid
Temporal
Ethmoid
Frontal
Occipital

Underdevelopment of which parts of facial skeleton in the embryonal period is the reason for such a malformation as cleft palate?
Palatine processes
Frontal processes
Frontal and maxillary processes
Mandibular processes
Mandibular and palatine processes

Examination of nasal cavity revealed deviation of the posterior part of nasal septum. What bone is affected?
Vomer
Medial plate of pterygoid process
Lateral plate of pterygoid process
Perpendicular plate of ethmoid bone
Vertical plate of palatine bone

Roentgenological examination of a patient revealed a deformity of the inferior wall of the right eye socket. What paranasal sinus was most probably damaged?
Right maxillary sinus
Sphenoidal sinus
Frontal sinus
Right ethmoidal labyrinth
Left ethmoidal labyrinth

A 28 y.o. patient was diagnosed with acute inflammation of mucous membrane of nasolacrimal duct. It is known from his anamnesis that he was having nasal discharges for 10 days after he had recovered from flu. From which part of nasal cavity could the infection have penetrated into the nasolacrimal duct?
Inferior nasal meatus
Medial nasal meatus
Superior nasal meatus
Vestibule of nose
Frontal sinus

A patient has a trauma of his upper jaw with an injury of supraorbital foramen. What jaw surface was damaged?

Anterior
Nasal
Orbital
Subtemporal
-

A patient was admitted to a hospital because of risk of inflammation spread from the occipital area to the cranial cavity. What anatomical formation can the inflammation spread through?
Condylar canal
Parietal foramen
Round foramen
Spinous foramen
Oval foramen

An eye trauma caused soft tissues infection of eyesocket. Through what anatomical formation can the infection penetrate into the middle cranial fossa?
Through the superior orbital fissure
Through the anterior ethmoidal foramen
Through the posterior ethmoidal foramen
Through the inferior orbital fissure
Through the zygomatic orbital foramen

A 69 year old patient has got an abscess of frontal lobe as a result of purulent infection in nasal cavity. What anatomical formation did the infection penetrate through?
Foraminae cribrosae
Foramen ovale
Foramen ethmoidalae posterior
Foramen sphenopalatinum
Foramen rotundum

X-ray scan shows a skull fracture. The line of the fracture passes through the supraorbital rim. What bone is damaged?
Maxilla
Parietal bone
Frontal bone
Temporal bone
Occipital bone

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

Frontal bone
Palatine bone

A patient has been hospitalized with skull trauma. His examination established absence of volitional movements of his head and neck muscles. What part of brain can cause this effect if damaged?
Lower part of precentral gyrus
Lower part of postcentral gyrus
Upper part of precentral gyrus
Upper part of postcentral gyrus
Inferior frontal (Broca's) gyrus

Three days after the filling of the first right premolar, the patient developed pain under the right eye and persistent nasal congestion accompanied by the fever of 38f,C and discharge of purulent mucus from the right nasal passage. What mistake was likely made by the doctor in this case?
Perforation of the right maxillary sinus
Perforation of the sphenoid sinus
Fracture of the interalveolar septum
Perforation of the infraorbital canal
Perforation of the right wall of the nasal cavity

A woman has come to a dentist with complaints of bruising and swelling around her eye. Anamnesis is as follows: several days prior her 1st premolar tooth had been extracted, with infraorbital anaesthesia administered; several days later hematoma appeared in the area of foramen intraorbitale . The branch of the following artery was damaged:
Maxillary artery
Facial artery
Superficial temporal artery
Superior labial artery
Masseteric artery

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:
III
II
IV
VI
VII

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?
R. superior n.oculumotorii
R. inferior n.oculumotorii
N. trochlearis
N. abducens
N. ophthalmicus

A doctor examined a victim of a road accident and revealed damage of the exterior wall of eye socket. The patient has lost ability to abduct the eyeball on the affected side. What nerve might be damaged in this case?
N. abducens
N. trochlearis
N. oculomotorius
N. ophthalmicus
N. infraorbitalis

A 3 year old child was admitted to the hospital with otitis. Pus is probable to spread from the tympanic cavity. Where can the pus get into?
Into mastoid antrum
Into internal ear
Into auditory tube
Into external acoustic duct
Into posterior cranial fossa

A patient loses his equilibrium, when in an upright position with his eyes closed. What brain structures are the most likely to be damaged in this patient?
Cerebellum
Basal ganglia
Precentral gyrus of the cerebral cortex
Limbic system
Thalamus

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

A teenager with impaired visual acuity came to an ophthalmologist. The doctor explained that this condition was caused by a spasm of accommodation. What component of an eyeball is a part of accommodation apparatus?
Ciliary muscle
Vitreous body
Retina
Cornea
Sclera

A patient has an acute painfullness of face skin. What nerve is damaged?
Trifacial
Facial
Oculomotor
Vagus
Glossopharyngeal

A 36-year-old woman came to a dentist with complaints of facial edema localized under her right eye. After examination, the dentist diagnosed her with phlegmon of the infraorbital region. What teeth often become the source of infection that spreads into this region?
Upper canine and first premolar
Second premolar and first molar
Upper first and second molars
Upper lateral and central incisors
Upper central incisor

A 67-year-old patient has ordered a full functional denture. It was necessary to extract his left upper canine. After infraorbital anaesthesia the patient presented with progressing hematoma in the frontal part of his face. The patient was found to have an injury of the artery that is the branch of:
maxillaris
facialis
A.temporalis superficialis
A.ophthalmica
labialis superior

A patient with a bleeding knife wound in the area of carotid triangle has been delivered to a hospital. Blood flowing from the wound is dark. What vessel is injured?
Internal jugular vein
External jugular vein
Internal carotid artery
Facial artery
Facial vein

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?
Motor portion of the mandibular nerve
Facial
Inferior alveolar
Maxillary
Mandibulohyoid

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

During the appendectomy, the patient's a. appendicularis was ligated. This vessel is a branch of the following artery:
A. ileocolica
A. mesenterica inferior
A. colica media
A. sigmoidea
A. colica dextra

Ossification of the annular stapedial ligament occurred in a patient with hearing impairment. What is this type of connection called?
Synostosis
Hemiarthrosis
Syndesmosis
Gomphosis
Synchondrosis

A patient has aspermia. What organ is dysfunctional in this case?
Testicle
Seminal vesicles
Bulbourethral (Cowper's) glands
Epididymis
Prostate

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

Gomphosis
Syndesmosis
Hemiarthrosis

A patient presents with disturbed blood supply to the medial surface of the right cerebral hemisphere. What artery is damaged in this case?
A. cerebri anterior
A. cerebri media
A. chorioidea
A. communicans posterior
A. cerebri posterior

Normal occlusion of the dental arches can be made more pronounced by pulling the
Temporal
Sternocleidomastoid
Masseter
Medial pterygoid
Lateral pterygoid

A patient is diagnosed with frontitis. He has a past history of maxillary sinusitis. What structure of the nasal cavity is the most likely pathway through which the infection was able to reach the frontal sinus?
Middle nasal meatus
Inferior nasal meatus
Ethmoid and sphenoid sinuses
Vestibule of the nose
Superior nasal meatus

Three days after the filling of the first right premolar, the patient developed pain under the right eye and persistent nasal congestion accompanied by the fever of 38f, C and discharge of purulent mucus from the right nasal passage. What mistake was likely made by the doctor in this case?
Perforation of the right maxillary sinus
Perforation of the sphenoid sinus
Fracture of the interalveolar septum
Perforation of the infraorbital canal
Perforation of the right wall of the nasal cavity

A student uses percussion to determine the cardiac border that projects on the anterior thoracic wall at the level of the third costal cartilage. What cardiac border is being determined?
Left
Lower
Apex
Upper

Right

A dentist administers anesthesia in the area of the upper second molar. What nerves does the doctor anesthetize?
Rr. alveolares superiores posteriors
Rr alveolares superiores anteriores
Rr. alveolares inferiores posteriors
Rr. alveolares inferiores anteriores
Rr. alveolares superiores medii

During a neck surgery, the patient's sternothyroid muscle was damaged by the surgeon. What function will be impaired because of the damage to this muscle?
Lowering of the larynx
Neck extension
Raising of the larynx
Raising of the hyoid bone
Bending the neck forwards

A 36-year-old woman came to a dentist with complaints of facial edema localized under her right eye. After examination, the dentist diagnosed her with phlegmon of the infraorbital region. What teeth often become the source of infection that spreads into this region?
Upper canine and first premolar
Second premolar and first molar
Upper first and second molars
Upper lateral and central incisors
Upper central incisor

A 42-year-old man with an incised wound on the lower anterior surface of his shoulder came to a hospital. Objectively, he presents with impaired forearm flexion. What muscles are likely to be damaged in this patient?
M. brachialis, m. biceps brachii
M. coracobrachialis, m. supraspinatus
M. biceps brachii, m. anconeus
M. deltoideus, m. biceps brachii
M. deltoideus, m. in fraspinatus

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

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

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

During examination, a doctor performed auscultation to assess the functioning of the patient's mitral valve. Where can the sound of this valve be auscultated?
At the apex of the heart
At the edge of the sternum, in the second intercostal space on the left
At the edge of the sternum, in the second intercostal space on the right
At the edge of the sternum on the left, over the fifth costal cartilage
At the edge of the sternum on the right, over the fifth costal cartilage

Auscultation reveals that in the patient's II intercostal space along the parasternal line on the right the II heart sound can be better heard than the I heart sound. What valve produces the II heart sound when closing?
Aortic semilunar valve
Bicuspid and tricuspid valves
Left bicuspid valve
Right tricuspid valve
Pulmonic semilunar valve

A patient who had his lower second molar extracted presents with bleeding from the tooth socket. What vessel is the source of the bleeding in this case?
Maxillary artery
Lingual artery
Facial artery
Ophthalmic artery
Ascending pharyngeal artery

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

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 the urethra:
Membranous part
Prostatic part
Spongiose part
External urethral orifice
Internal urethral orifice

A woman has come to a dentist with complaints of bruising and swelling around her eye. Anamnesis is as follows: several days prior her 1st premolar tooth had been extracted, with infraorbital anaesthesia administered; several days later hematoma appeared in the area of foramen intraorbitale . The branch of the following artery was damaged:
Maxillary artery
Facial artery
Superficial temporal artery
Superior labial artery
Masseteric artery

A patient consulted a doctor about an increased pain sensitivity of the ear skin and ear canal. Palpation behind the sternocleidomastoid muscle was painful. Such clinical presentations are typical of the irritation of the following nerve:
N. auricularis magnus
N. occipitalis minor
Nn. Supraclaviculares
N. vagus
N. transversus colli

In a 12-year-old patient an inflammatory process in the internal ear spread to the meninges, diffusely affecting them. A doctor suspects the process to have spread through the connection between the subarachnoid space of the brain and perilymphatic space of the internal ear. What anatomic structure became the pathway for the spreading inflammation?
Aqueductus vestibule

Fossa subarcuata
Hiatus canalis n. petrosi majoris
Hiatus canalis n. petrosi minoris
Fissura petrosquamosa

A woman with essential hypertension has been hospitalized. The patient presents with aneurysm of a.communicans posterior of the cerebrum arterial circle. What vessels of arterial circle are normally joined with this artery?
A. carotis interna et a. cerebri posterior
A. carotis interna et a. cerebri media
A. carotis externa et a. cerebri anterior
A. cerebri anterior et a. cerebri media
A. cerebri media et a. cerebri posterior

A 67-year-old patient has ordered a full functional denture. It was necessary to extract his left upper canine. After infraorbital anaesthesia the patient presented with progressing hematoma in the frontal part of his face. The patient was found to have an injury of the artery that is the branch of:
Maxillaris
Facialis
A. temporalis superficialis
Ophthalmica
labialis superior

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:
III
II
IV
VI
VII

A doctor examined a patient, studied the patient's blood analyses and concluded that the peripheral organs of immunogenesis are damaged. What organs are the most likely to be affected?
Tonsils
Thymus
Kidneys
Red bone marrow
Yellow bone marrow

A patient has been diagnosed with bicuspid valve insufficiency. Where is this valve located?
Between the left atrium and left ventricle

Between the right atrium and right ventricle
Between the left and right atria
Between the left and right ventricles
At the aortic orifice

A man came to a surgeon with complains of pain in his lower right abdomen. On deep palpation the doctor detected a painful area in the right inguinal region. What part of the intestine is the most likely to be affected with pathological process?
Cecum
Transverse colon
Descending colon
Sigmoid colon
Rectum

A patient with a bleeding knife wound in the area of carotid triangle has been delivered to a hospital. Blood flowing from the wound is dark. What vessel is injured?
Internal jugular vein
External jugular vein
Internal carotid artery
Facial artery
Facial vein

A child with a foreign body in the lungs has been hospitalized. What bronchus is the most likely to contain this foreign body, if its diameter approximates to 1,5 cm?
Right primary bronchus
Lobar bronchus
Left primary bronchus
Left segmental bronchus
Right segmental bronchus

A woman is diagnosed with fatty tissue inflammation located between the leaves of broad ligament of the uterus. Name this anatomical structure:
Parametrium
Perimetrium
Myometrium
Endometrium
Mesometrium

The patient's examination in a hospital specialised in diseases of nervous system has revealed absence of lightinduced miosis. It is caused by the damage of the following brain structures:
Vegetative nuclei of the 3rd pair of cranial nerves
Red nuclei of mesencephalon
Reticular nuclei of mesencephalon

Hypothalamus nuclei
Reticular nuclei of medulla oblongata

A patient, who after a trauma suffers from impeded active flexion of elbow, consulted a traumatologist. What muscle is the most likely to be damaged?
M. biceps brachii
M. pectoralis major
M. deltoideus
M. coracobrachialis
M. latissimus dorsi

Brain investigation by means of nuclear magnetic resonance revealed the patient to have a hematoma in the genu of the internal capsule. What pathway is damaged in this case?
Tr. cortico-nuclearis
Tr. cortico-spinalis
Tr. cortico-fronto-pontinus
Tr. cortico-thalamicus
Tr. thalamo-corticalis

A patient with displaced fracture of the right coronoid process of mandible has been delivered to a firstaid center. What muscle had displaced the coronoid process?
Right temporal muscle
Right masticatory muscle
Right lateral pterygoid muscle
Right medial pterygoid muscle
Left masticatory muscle

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:
Parotid gland
Submandibular gland
Sublingual gland
Lingual gland
Labial glands

After the cerebral hemorrhage a patient developed aphasia - lost the ability to articulate words. The hemorrhage is localized in the:
Inferior frontal gyrus
Superior frontal gyrus
Middle frontal gyrus
First temporal convolution
Second temporal convolution

A patient with a nasal trauma presents with skull fracture that circles the piriform opening. What bone is damaged?
Nasal
Lacrimal
Maxillary
Frontal
Ethmoid

A patient has suffered a head injury. On examination there is a subcutaneous hematoma in the temporal area. What vessel was damaged, thus resulting in hematoma development?
A. temporalis superficialis
A. maxillaris
A. auricularis posterior
A. buccalis
A. occipitalis

During examination of a woman she was found to have a luminal narrowing of the right jugular foramen (foramen jugulare). What cranial bones form this foramen?
Temporal and occipital
Occipital and frontal
Temporal and cuneiform
Occipital and cuneiform
Cuneiform and palatine

A patient is diagnosed with inflammatory process in the area of the excretory duct of submandibular gland. This duct opens to:
Caruncula sublingualis
Vestibulum oris
Foramen caecum linguae
Linea terminalis
Recesus gingivalis

During a brain surgery stimulation of the cerebral cortex resulted in tactile and thermal sensations in the patient. What gyrus was stimulated?
Postcentral gyrus
Cingulate convolution
Parahippocampal gyrus
Superior temporal gyrus
Precentral gyrus

A patient suffers from an inflammatory process in the area of the lower wall of orbital cavity. What anatomical structure makes it possible for the inflammatory process to spread to the pterygopalatine fossa?
Inferior orbital fissure

Superior orbital fissure
Supraorbital incisures
Posterior ethmoidal foramen
Optic canal

A patient is diagnosed with deformed posterior portion of the nasal septum. What bone is deformed?
Vomer
Medial pterygoid plate
Lateral pterygoid plate
Perpendicular plate of ethmoid bone
Vertical plate of palatine bone

A patient suffers from disturbed blood supply of superior lateral surface of the cerebral hemispheres. What blood vessel is damaged?
Medial cerebral artery
Anterior cerebral artery
Posterior cerebral artery
Anterior communicating artery
Posterior communicating artery

A victim of an accident has hemorrhage in the area of lateral surface of the mastoid process. What branch of the external carotid artery supplies this area with blood?
auricularis posterior
A. temporalis superficialis
facialis
maxillaris
pharyngea ascendens

A 33-year-old man presents with disturbed pain and thermal sensitivity after a spinal cord trauma. The following ascending tract is injured:
Spinothalamic
Lateral corticospinal
Anterior corticospinal
Ventral spinocerebellar
Dorsal spinocerebellar

To test teeth sensitivity they are sprayed with cold or hot water. What structure of cerebral cortex provides subjective estimation of this thermal test?
Posterior central gyrus
First temporal convolution
Precentral gyrus
Middle frontal gyrus
Central fissure

During oral cavity examination a dentist noticed eruption of the permanent canines in a child. The child grows and develops normally. Determine the child's age:
11-13 years
13-16 years
6-7 years
8-9 years
9-10 years

Lateral X-ray of the occipital bone area demonstrates fracture of the occipital condyle. Integrity of the following anatomical structure is disturbed:
Canalis nervi hypoglossi
Canalis caroticus
Foramen ovale
Foramen stylomastoideum
Foramen mastoideum

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?
Motor portion of the mandibular nerve
Facial
Inferior alveolar
Maxillary
Mandibulohyoid

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:
Genioglossus
Hyoid
Superior longitudinal
Inferior longitudinal
Styloglossus

It is required to anaesthetize right lower molars. The proper injection site for the conduction anaesthesia is:
The region of the right mandibular foramen
The gums to the right of mandible
The region of the right mental foramen
The region of suborbital foramen
The region of the oval foramen

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. ophthalmica
A. infraorbitalis
A. facialis
A. cerebri anterior
A. transversa faciei

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?
R. superior n.oculumotorii
R. inferior n.oculumotorii
N. trochlearis
N. abducens
N. ophthalmicus

A woman with a tumour of the pancreas has developed mechanic jaundice due to compression of a bile-excreting duct. Which duct is compressed?
Ductus choledochus
Ductus cysticus
Ductus hepaticus communis
Ductus hepaticus dexter
Ductus hepaticus sinister

After a hemorrhage into the brainstem a patient has lost reflex of myosis as a reaction to increase of illumination.What structure was damaged?
Vegetative nuclei of oculomotor nerve
Lateral reticular nuclei
Medial reticular nuclei
Red nuclei
Black substance

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?
Lower first molars
Lower first premolars
Upper first premolars
Upper medial incisors
Lower canines

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?
Lower jaw edge
Neck midline

M. sternocleidomastoideus
M. trapezius
M. omohyoideus

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?
Foramen sphenopalatinum
Foramen rotundum
Canalis palatinus major
Canalis palatinus minor
Canalis ptherygoideus

A patient has a skull fracture located in front of the foramen magnum. What bone is damaged?
Pars basilaris ossis occipitalis
Pars lateralis ossis occipitalis
Pars squamosa ossis occipitalis
Pars squamosa ossis temporalis
Pars petrosa ossis temporalis

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?
Sternocleidomastoid
Thyrohyoid
Sternohyoid
Omohyoid
Sternothyroid

A 35-year-old man has been hospitalized with complaints of a runny nose and headache that last for 5 days already. After examination, he was diagnosed with maxillary sinusitis (inflammation of the maxillary sinus). Through what nasal passage did the infection reach this sinus?
Middle nasal meatus
Nasopharyngeal meatus
Superior nasal meatus
Common nasal meatus
Inferior nasal meatus

X-ray detects a shadow in the area of the patient’s dural sinus that runs from the crista galli of the ethmoid bone of the skull to the internal occipital protuberance. In this case, pathological changes can be detected in the area of the following sinus:
Sinus sagittalis superior
Sinus rectus
Sinus sigmoideus

Sinus sagittalis inferior
Sinus transversus

A 35-year-old man has been delivered into a surgical ward with a suppurating wound in the neck, anterior to the trachea (previsceral space). If a surgical operation is not performed urgently, there is a risk of infection spreading to the:
Thoracic cavity - anterior mediastinum
Thoracic cavity - middle mediastinum
Thoracic cavity - posterior mediastinum
Retrovisceral space
Interaponeurotic suprasternal space

The patient's pyramids of the medulla oblongata are damaged by tumor growth. As a result the conduction of nervous impulses will be impaired in the following pathway:
Tr. Corticospinalis
Tr. Corticonuclearis
Tr. Corticopontinus
Tr. Dentatorubralis
Tr. Spinocerebellaris

A patient complains of pain in the upper umbilical region. On palpation there is a mobile painful intestine. What intestine is being palpated by the doctor?
Transverse colon
Jejunum
Duodenum
Ileum
Sigmoid colon

Paronychia of the patient's little finger was complicated with phlegmon of the hand and forearm. In this case the suppuration had spread through the:
Vagina synovialis communis mm. flexorum
Vagina tendinis m. flexor pollicis longi
Canalis carpalis
Vagina tendinis m. flexor carpi radialis
Interfascial compartments

During cholecystectomy besides a. cystyca another artery was pulled into the ligature. Ligation of this artery resulted in right-sided necrosis of the liver which led to the death of the patient. What artery was mistakenly ligated along with a. cystyca?
Ramus dexter a. hepatica propria
A. hepatica communis
A. gasro-duodenalis
Ramus sinister a. hepatica propria
A. pancreato-duodenalis sup

A 64-year-old woman presents with disturbed fine motor function of her fingers, marked muscle rigidity, and tremor. The neurologist diagnosed her with Parkinson's disease. What brain structures are damaged resulting in this disease?
Substantia nigra
Thalamus
Red nuclei
Cerebellum
Reticular formation

Histological specimen shows organ parenchyma to consist of lymphoid tissue that forms lymph nodules; the nodules are located diffusely and have a central artery. What anatomical structure has such morphological characteristics?
Spleen
Tonsil
Lymph node
Thymus
Red bone marrow

During experiment a part of the brain was extracted, which resulted in asynergy and dysmetria development in the test ani-mal. What part of the brain was extracted in the animal?
Cerebellum
Frontal lobe
Parietal lobe
Mesencephalon
Reticulum

A specimen shows an organ covered with connective tissue capsule with trabeculae radiating inward the organ. The organ's cortex contains lymph nodules; there are medullary cords made of lymphoid cells. What organ is under study?
Lymph node
Thymus
Spleen
Red bone marrow
Tonsils

A woman suffers from tonsillitis complicated with retropharyngeal abscess that is localized in the spatium retrovi-scerale. In this case the suppurative process can spread to the:
Mediastinum posterius
Spatium interaponeuroticum suprasternale
Mediastinum anterius
Spatium pretracheale
Spatium interscalenum

A patient complains of acute pain attacks in the right lumbar region. During examination the nephrolithic obturation of the right ureter in the region between its abdominal and pelvic segments has been detected. What anatomical boundary exists between those two segments?
Linea terminalis
Linea semilunaris
Linea arcuata
Linea transversa
Linea inguinalis

As a result of past encephalitis, a man has developed an increase in cerebrospinal fluid pressure in the right lateral ventricle. What can be the cause of this condition?
Closure of the right interventricular foramen
Closure of the left interventricular foramen
Atresia of the tubus medullaris
Atresia of the sylvian aqueduct
Atresia of the fourth ventricle foramina

A patient is diagnosed with compression fracture of the lumbar vertebra. The patient presents with acutely increased lumbar lordosis. What ligament was damaged in this patient resulting in such deformation of vertebral column curvature?
Anterior longitudinal ligament
Posterior longitudinal ligament
Yellow ligament
Iliolumbar ligament
Interspinal ligament

A patient had a trauma that caused dysfunction of motor centers regulating activity of head muscles. These centers can normally be located in the following area of the cerebral cortex:
Inferior part of the precentral gyrus
Superior part of the precentral gyrus
Supramarginal gyrus
Superior parietal lobule
Angular gyrus

The brain trauma unit received a pati-ent with damaged greater wing of the sphenoid bone. The fracture line crosses the spinous foramen of the sphenoid. What vessel was damaged?
Middle meningeal artery
Superficial temporal artery
Lateral pterygoid artery
Anterior deep temporal artery
Posterior deep temporal artery

Parkinson’s disease is caused by disturbance of dopamine synthesis. What brain structure synthesizes this neurotransmitter?
Substantia nigra
Globus pallidus
Corpora quadrigemina
Red nuclei
Hypothalamus

During surgery performed in the abdominal cavity a surgeon located ligament of liver stretching from anterior abdominal wall (navel) to inferior surface of liver. What ligament is it?
Round ligament of the liver
Falciform ligament of the liver
Coronary ligament of the liver
Venous ligament of the liver
Triangular ligament of the liver

An injured person with wound of the anterior cervical region presents with hemorrhage. The outflowing blood is dark. What vessel is damaged?
V. jugularis anterior
V. jugularis externa
V. jugularis interna
A. carotis externa
A. thyroidea superior

After a traffic accident a 36-year-old patient has developed muscle paralysis of the extremitis on the right, lost pain and thermal sensitivity on the left, and partially lost tactile sensitivity on both sides. What part of the brain is the most likely to be damaged?
Right-hand side of the spinal cord
Motor cortex on the left
Left-hand side of the spinal cord
Anterior horn of the spinal cord
Posterior horn of the spinal cord

While examining foot blood supply a doctor checks the pulsation of a large artery running in the separate fibrous channel in front of articulatio talocruralis between the tendons of long extensor muscles of hallux and toes. What artery is it?
A. dorsalis pedis
A. tibialis anterior
A. tarsea medialis
A. tarsea lateralis
A. fibularis

Structure of proteins includes proteinogenic amino acids. What is the position of the amino group in the structure of these amino acids?
α-position
β-position
γ-position
δ-position
ε-position

Determination of proportion between protein fractions in blood plasma or serum has an important clinical and diagnostic significance. The following routine method for obtaining results of this sort is most frequently used in clinical laboratories:
Salting out with neutral salts
Absorption chromatography
Precipitation with strong acids
Electrophoresis in agar gel or on acetyl-cellulose films
Immunoprecipitation

Protein preparations from human blood plasma are frequently used in clinical medicine for treatment of many diseases. Fractionation of blood plasma and preparation of distinct protein fractions is achieved by the next method:
Fractional precipitation with ammonium sulfate
Fractional precipitation with ethanol by Cohn YI method
Precipitation with salts of heavy metals
Electrophoresis in agarose gel
Ultracentrifugation

Doctor, before prescribing of parenteral protein nutrition made laboratorystudy electrophoretic of spectrum of blood serum proteins. What physicochemical properties of proteins are used in this method?
Ability to be charged
Viscosity
The inability to denaturate
Hydrophility and swelling
Optical activity

In biochemical laboratories different methods are used for fractionation of protein mixtures. Specify the method that is based on the difference of net charge of the protein molecule:
Electrophoresis
Gel filtration
Affinity chromatography
Ion Chromatography
Ultracentrifugation

The method of salting-out is used for the fractionation of blood serum proteins in clinical practice. Name compounds which are used for this method?
Salts of heavy metals
Detergents
Acids
Salts of alkali metals
Alkalis

Determination of C-reactive protein (CRP) in blood plasma is conducted with the use of antisera, containing specific antibodies against CRP. What type of analytical method is used in this case?
Immunoprecipitation
Polarography
Spectrophotomenry
Electrophoresis
Chromatography

Lysosomes are membrane-bound cellular organelles found in many animal cells and most plant cells, which have the following functional significance:
Degradation of complex biomolecules (proteins, nucleic acids, oligosaccharides etc.)
Production of energy (biosynthesis of ATP)
Post-translational modification of proteins
Oxygen consumption by the cell (respiration)
Cell movement

Which electrode to the protein particle will move during electrophoresis, if its isoelectric point is 4.0, and the pH for buffer solution is 5.0?
Anode
Calomel electrode
Cathode
Silver electrode
Platinum electrode

Detection of protein in biological fluids, e.g. in urine, blood or saliva is achieved with the following methodical approach:
Precipitation with strong inorganic or organic acids
Amino acid analysis after acid hydrolysis of sample
Immunoprecipitation with specific antiserum
Determination of optical density at 280 nm
Polarimetry

Most hormones are present in the circulating blood in extremely low concentrations, some as low as one millionth of a microgram (one picogram) per ml. In

determination of concentration of hormones in blood the next method is routinely used in clinical laboratory investigations:
Immunoenzymatic assay
Immunoprecipitation
Chromatography
Spetrophotometr
Polarography

Which is the best technique to separate oxygenated normal hemoglobin A (HbA) from oxygenated sickle cell hemoglobin (HbS), assuming no protein aggregation?
Native gel electrophoresis
Colorimetry
Gel filtration
Affinity chromatography
Ultracentrifugation

Separation of molecules according to their molecular mass is achieved by the following chromatographic method:
Gel filtration chromatography
Ion exchange chromatography
Absorption chromatography
Partition chromatography
Affinity chromatography

The cellular organelles called “suicide bags” are known to contain more than 60 different hydrolytic enzymes that digest large molecules are:
Lysosomes
Ribosomes
Nucleolus
Golgi’s bodies
Mitochondria

The biuret test, also known as Piotrowski's test, is based on with copper (II) ion which forms mauve-colored coordination complexes in an alkaline solution. Biuret reaction is specific for:
–CONH-linkages
–CSNH2 group
–(NH)NH2 group
–SH groups
All of these

Amino acid analysis provides a measure of true protein quantities. It gives detailed information about the amino acid composition of protein/peptide hydrolysates, free amino acids in cell culture media and of free amino acids in serum, plasma, urine,

and intracellular free amino acids. Chose the method, which is used in amino acid analysis of proteins:
Affinity chromatography
Gel electrophoresis in polyacrylamide
Colorimetry
Ion exchange chromatography
Polarography

Many techniques used in biochemistry are based on interaction between analyte and light. It can be change of color or intensity of light, luminescence, fluorescence, change of rotation of polarised light or light scattering. Indicate optical methods of investigation, which are used in clinical biochemistry:
Photocolorimetric
Affinity chromatography
Salting out
Electrophoresis
Immunoenzyme assay

A biochemichal laboratory is actively investigatinging a novel compound that poseses chemotherapeutic properties. After the drug is administered to a culture of cancer cells, microscopic evaluation shows cells arrested with condensed chromatids visible. Which of the following intracellular targets is most likely inhibited by the drug?
Centromere
Topoisomerase
Electron transport cain
Microfilament
Lysosomes

There are several groups of molecular mechanisms playing an important part in the pathogenesis of insult to cells which contributes to the pathology development. What processes are stimulated by proteolytic damage mechanisms?
Enzyme inhibition
Lipid peroxidation
Phospholipase activation
Osmotic membrane distension
Acidosis

Cytochemical investigation revealed high content of hydrolytic enzymes in the cytoplasm. This phenomenon indicates the activity of the following organelles:
Lysosomes
Endoplasmic reticulum
Mitochondria
Polysomes
Cell center

Protective function of saliva is based on several mechanisms, including the presence of enzyme that has bactericidal action and causes lysis of complex capsular polysaccharides of staphylococci and streptococci. Name this enzyme:
Lysozyme
α-amylase
Oligo-1,6-glucosidase
Collagenase
β-glucuronidase

Enzymes are actually made up of 1000s of amino acids that are linked in a specific way to form different enzymes. The enzyme chains fold over to form unique shapes and it is these shapes that provide the enzyme with its characteristic chemical potential. Active centre of enzyme can be defined as follows:
Site on the enzyme molecule, which binds substrate and provides its further transformation
Part of the molecule, which easily splits from apoenzyme
Nonprotein component of enzyme molecule
Site for binding of allosteric effector
Whatever part of polypeptide chain of enzyme molecule

The molecular absorbtion coefficient (extinction coefficient) of NADH at 340 nanometers is 6,220 liters per mole per centimetre, whereas that of NAD+ at 340 nanometers is 0. What absorbance will be observed when light at 340 nanometers passes through a 1-centimeter cuvette containing 10-micromolar NADH and 10-micromolar NAD?
0.062
0.031
0.124
0.31
0.62

The active site is the region of an enzyme where substrate molecules bind and undergo a chemical reaction. The active site consists of residues that form temporary bonds with the substrate (binding site) and residues that catalyse a reaction of that substrate (catalytic site). Choose the amino acid, which is frequently involved in formation of active centre in different enzymes.
Histidine
Leucine
Proline
Valine
Glycine

Enzymes can function both inside cells (intracellular) and outside cells (extracellular). The best examples of extracellularenzymes (exoenzymes) are:
Digestive enzymes
Nucleases
Dehydrohenases
Transferases
Reductases

The citric acid cycle also known as the TCA cycle or the Krebs cycle – is a series of chemical reactions used by all aerobic organisms to release stored energy through the oxidation of Acetyl-CoA derived from carbohydrates, fats, and proteins, into adenosine triphosphate (ATP) and carbon dioxide. The enzymes of the citric acid cycle are located in:
Mitochondrial matrix
Extramitochondrial soluble fraction of the cell
Nucleus
Endoplasmic reticulum
Lysosomes

Enzymes and catalysts both affect the rate of a reaction. Enzymes differ from inorganic catalysts by the next property:
Thermolability
Acceleration of reaction equilibrium achievement
Sensitivity to catalyst poisons
Thermostability
No selectivity to type of catalyzed reaction

Some enzymes require no chemical groups for activity other than their amino acid residues (simple enzymes). Others (conjugated) require an additional chemical component called a cofactor. As cofactors of enzymes the most frequently met are the next compounds:
Vitamins, modified by cell enzymes (vitamin derivatives)
Native vitamins
Hormons, e.g. thyroxine
Carbohydrates
Polynucleotides

An enzyme that catalyzes the conversion of an aldose sugar to a ketose sugar would be classified as one of the:
Isomerases
Oxidoreductases
Transferases
Hydrolases
Liases

In the cell, enzymes are located in subsequent organelles, providing their specific functioning. Note enzymes located in lysosomes.
Cathepsins and glucosaminidase
Fatty acid synthesis enzyme complex
Enzymes of protein biosynthesis
Enzymes of urea synthesis
Glycogen synthetase and branching enzyme

Specificity of action is an important property of enzymes which differs them from inorganic catalysts. Choose from listed below enzymes ONE which exhibits selectivity to stereochemical epimers of substrate:
Urease
Aminopeptidase
Trypsin
Alcohol dehydrogenase
Lactate dehydrogenase

Hydrolases are enzymes that catalyse the hydrolytic cleavage of C-O, C-N, C-C and some other bonds. Choose from listed below enzymes, ONE which represents class hydrolases:
Pepsin
Aldolase
Glucokinase
Phenol oxidase
ATP synthase

The main function of enzymes is to catalyze chemical reactions, thus being organic catalysts, enzymes have many common properties with inorganic catalysts. Which of the following is not true regarding enzymes?
They are destroyed after the completion of the reaction they catalyse
They catalyze only a particular type of reaction
They remain active even after separation from the source
They are irreversibly destroyed at high temperature
Their activity depends on the pH of the solution

Enzymes are usually named by adding the suffix to the main part of the substrate on which they act EXEPT:
Trypsin
Sucrase
Maltase
Lactase
Nuclease

Blood of a 12-year-old boy presents low concentration of uric acid and accumulation of xanthine and hypoxanthine. This child has genetic defect of the following enzyme:
Xanthine oxidase
Arginase
Urease
Ornithine carbamoyl transferase
Glycerol kinase

Name the drug that inhibits excretory function of pancreas during treatment of acute pancreatitis:
Contrykal (Aprotinin)
Allochol
Panzynorm
Pancreatin (Mezym forte)
Festal

A patient who had been taking diclofenac sodium for arthritis of mandibular joint developed an acute condition of gastric ulcer. Such side effect of this medicine is caused by inhibition of the following enzyme:
Cyclooxygenase-1 (COX-1)
Cyclooxygenase-2 (COX-2)
Lipoxygenase
Phosphodiesterase
Monoamine oxidase

Pharmaceuticals, containing mercury, arsen or other heavy metals, are inhibiting enzymes, posessing sulfhydril groups. What amino acid is used for reactivation of these enzymes?
Cysteine
Histidine
Isoleucine
Aspartic acid
Glycine

Irreversible inhibitors are usually toxic compounds, which covalently bind with the enzymes and inactivate them. Which of the following inhibitors is an irreversible one:
Iodoacetate
Malotate
Methanol
Allopurinol
Acetylsalicilic acid

Phosphororganic compound diisopropyl-fluorophosphate is a dangerous toxin as it inhibits cholinesterase. What is the mechanism of this inhibition?
Irreversible
Reversible
Competitive
Uncomoetitive
Noncompetitive

A number of diseases can be diagnosed by evaluating activity of blood transaminases. What vitamin is one of cofactors of these enzymes?
B6
B2
B1
B8
B5

A number of diseases can be diagnosed by evaluating activity of blood transaminases. What vitamin is one of cofactors of these enzymes?
B6
B2
B1
B8
B5

A patient has an increased pyruvate concentration in blood, most of it is excreted with the urine. What kind of avitaminosis has this patient?
B1
E
B3
B6
B2

Vitamin B1 deficiency causes disturbance of oxidative decarboxylation of α-ketoglutaric acid. This leads to the impaired synthesis of the following coenzyme:
Thiamine pyrophosphate
Nicotinamide adenine dinucleotide
Flavine adenine dinucleotide
Lipoic acid
Coenzyme A

Treatment of many diseases involves use of cocarboxylase (thiamine pyrophosphate for supplying cells with energy. What metabolic process is activated in this case?
Oxidizing decarboxylation of pyruvate
Glutamate deamination

Amino acids decarboxylation
Decarboxylation of biogenic amines
Detoxication of harmful substances in liver

According to the clinical signs, pyridoxal phosphate was prescribed to a patient. For the correction of what biochemical processes is this drugrecommended?
Transamination and decarboxylation of amino acids
Synthesis of purines and pyrimidines
Oxidative decarboxylation of ketoacids
Deamination of amino acids
Protein synthesis.

Para-aminobenzoic acid is believed to be an inhibitor in biosynthesis of the next vitamin in bacteria:
Folic acid
Biotin
Pantothenic acid
Cobalamin
Pyridoxine

There is a group of biochemical reactions that have a special set of enzymes and coenzymes. They are involved in amino acid metabolism and also play roles in nucleotide metabolism. This group of reactions is referred to as one-carbon metabolism because what they have in common is the transfer of one-carbon groups. One-carbone group transfer reactions are catalyzed by enzymes, which coenzyme is:
Tetrarahydrofolic acid
Retinal
Coenzyme A
Flavin mononucleotide
Pyridoxal phosphate

Hydroxylation of endogenous substrates and xenobiotics requires a donor of protons. Which of the following vitamins can play this role?
Vitamin C
Vitamin P
Vitamin B6
Vitamin E
Vitamin A

Beriberi is a classic example of thiamine deficiency. Active form of this vitamin is synthesized by an enzyme belonging to the following group:
Transferases
Oxidoreductases
Hydrolases

Lyases
Isomerase

Thiamine pyrophosphate (TPP) is a coenzyme form of thiamine (vitamin B1), formed by the action of thiamine diphosphotransferase Select the metabolic process with which TPP is mostly associated:
Decarboxylation of α-ketoacids
Biosynthesis of collagen
Biosynthesis of amino acids
Oxidation of fatty acids
Biosynthesis of prothrombin

Vitamin C exists in forms of ascorbic acid and dehydroascorbic acid. Ascorbic acid participates in reactions of:
Hydroxylation
Dexarboxylation
Redox
Acyl transfer
Dexarboxylation

Biochemical functions of water soluble vitamins are realized due to their transformation to coenzymes. What coenzyme is formed by vitamin PP?
NAD (nicotinamide adenine dinucleotide)
FMN (flavinmononucleotide)
FAD (flavin adenine dinucleotide)
Pyridoxalphosphate
Thiamine pyrophosphate

Pantothenic acid is the amide of pantoic acid and β-alanine. Pantothenic acid is a precursor of which the following coenzyme:
Coenzyme A
FAD
NADP
Coenzyme Q
SAM (S-adenosylmethionine)

The process of metabolism in the human body produces active forms of oxygen, including superoxide anion radical O -2. This anion is inactivated by the following enzyme:
Superoxide dismutase
Glutathione reductase
Catalase
Peroxidase
Glutathione peroxidase

During metabolic process active forms of the oxygen including superoxide anion radical are formed in the human body. With help of what enzyme is this anion activated?
Superoxide dismutase
Catalase
Peroxidase
Glutathioneperoxidase
Glutathionereductase

Characteristic sign of glycogenosis is muscle pain during physical work. Blood examination reveals usually hypoglycemia. This pathology is caused by congenital deficiency of the following enzyme:
Glycogen phosphorylase
Glucose 6-phosphate dehydrogenase
Alpha amylase
Gamma amylase
Lysosomal glycosidase

Human red blood cells do not contain mitochondria. What is the main pathway for ATP production in these cells?
Anaerobic glycolysis
Aerobic glycolysis
Oxidative phosphorylation
Creatine kinase reaction
Cyclase reaction

Increased HDL levels decrease the risk of atherosclerosis. What is the mechanism of HDL anti-atherogenic action?
They remove cholesterol from tissues
They supply tissues with cholesterol
They are involved in the breakdown of cholesterol
They activate the conversion of cholesterol to bile acids
They promote absorption of cholesterol in the intestine

Deficiency of linoleic and linolenic acids in the body leads to the skin damage, hair loss, delayed wound healing, thrombocytopenia, low resistance to infections. These changes are most likely to be caused by the impaired synthesis of the following substances:
Eicosanoids
Interleukins
Interferons
Catecholamines
Corticosteroids

Emotional stress causes activation of hormon-sensitive triglyceride lipase in the adipocytes. What secondary mediator takes part in this process?
Cyclic adenosine monophosphate
Cyclic guanosine monophosphate
Adenosine monophosphate
Diacylglycerol
Ions of Ca2+

Nitrogen is being excreted from the body mainly as urea. When activity of a certain enzyme in the liver is low, it results in inhibition of urea synthesis and nitrogen accumulation in blood and tissues. Name this enzyme:
Carbamoyl phosphate synthetase
Aspartate aminotransferase
Urease
Amylase
Pepsin

Pharmacological effects of antidepressants are based upon blocking (inhibiting) the enzyme that acts as a catalyst for the breakdown of biogenic amines noradrenalin and serotonin in the mitochondria of cephalic neurons. What enzyme takes part in this process?
Monoamine oxidase
Transaminase
Decarboxylase
Peptidase
Lyase

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

A ribonucleoprotein (RNP) is a complex of ribonucleic acid and RNA-binding protein. These complexes play an integral part in a number of important biological functions that include DNA replication, regulating gene expression and regulating the metabolism of RNA. Indicate nitrogenous base which is a specific component of ribonucleoproteins.
Uracil
Adenine
Guanine

Thymine
Cytosine

DNA is an organic chemical of complex molecular structure that is found in all prokaryotic and eukaryotic cells and in many viruses. Which of the following molecules does not form part of DNA?
Amino acid
Purine
Deoxyribose
Pyrimidine
Phosphate