

1. The conductivity of nerve fibers was studied in an experiment. At first, the axon was stimulated with a threshold stimulus. Then three more stimuli of the same strength as the first were applied. What impulse will be produced after the last stimulus?

- A. With the same amplitude and speed
- B. With the same amplitude, but slower speed
- C. With smaller amplitude, but the same speed
- D. With tripled amplitude and speed
- E. —

2. A group of men came to a doctor with complaints of fever, headache, muscle pain, and swollen eyelids and face. These men are hunters and eat meat of wild animals. What disease can be characterized by these signs?

- A. Trichinosis
- B. *Taenia solium* invasion
- C. Cysticercosis
- D. *Taenia saginata* invasion
- E. Filariasis

3. What organ does not perform its functions in a patient diagnosed with aspermia?

- A. Testicle
- B. Seminal vesicles
- C. Epididymis
- D. Prostate
- E. —

4. A child born 10 days ago presents with a cleft upper lip («hare's lip»). What is the cause of this pathology?

- A. Nonunion of the frontal and maxillary processes of the first branchial arch
- B. Nonunion of the palatal tori of the maxillary processes of the first branchial arch
- C. Nonunion of the second branchial arch
- D. Nonunion of the third branchial arch
- E. Nonunion of the maxillary and mandibular processes of the first branchial arch

5. A patient was diagnosed with thrombosis of the inferior mesenteric artery. What part of the intestine is affected in this case?

- A. Sigmoid colon
- B. Duodenum
- C. Ileum
- D. Vermiform appendix
- E. Jejunum

6. What types of excretory ducts are distinguished in the large salivary glands?

- A. Intralobular ducts, interlobular ducts, and the primary duct of the gland
- B. Intralobular ducts, striated ducts, and the common duct
- C. Intercalated ducts, striated ducts, and the common duct
- D. Intralobular and interlobular ducts
- E. Intralobular and extraglandular ducts

7. Branchial arches were detected in the histological slide of the cephalic pole of an embryo at 5 weeks of gestation. What structures develop from the first pair of these formations?

- A. Mandibular and maxillary processes
- B. Mandibular processes
- C. Maxillary processes
- D. External acoustic meatus
- E. Thyroid cartilage

8. Histological slide of a dental crown section shows a small number of collagen fibers (Korff fibers) in the intercellular substance of dentin, arranged radially. What layer of dentin is it?

- A. Mantle dentin
- B. Parapulpal dentin
- C. Granular layer
- D. Interglobular dentin
- E. Predentin

9. The patient's ciliary body is damaged. What ocular apparatus is likely to be dysfunctional in this case?

- A. Accommodation apparatus
- B. Light-conducting apparatus
- C. Photosensitive apparatus
- D. Protective apparatus
- E. Trophic apparatus

10. Neutrophils were detected in the histoslides of connective tissue. What function do these cells perform when they migrate from the blood to the tissues?

- A. Phagocytosis of microorganisms
- B. Trophic function
- C. Support function
- D. Regulation of contraction of smooth myocytes
- E. Blood vessel dilation

11. A histological slide shows a hematopoietic organ that consists of lobes of varying shape. Each lobe has its cortical and medullary substances. Such structure is characteristic of the following organ:

- A.** Thymus  
**B.** Lymph node  
**C.** Spleen  
**D.** Tonsils  
**E.** Vermiform appendix
- 12.** The terminal segments of apocrine sweat glands contain myoepithelial cells. What is the function of these cells?
- A.** Contractile function  
**B.** Secretory function  
**C.** Protective function  
**D.** Regenerative function  
**E.** Supporting function
- 13.** The cessation of postpartum hemorrhage is associated with the effect of oxytocin on the uterine wall. What uterine membrane responds to this substance?
- A.** Myometrium  
**B.** Endometrium  
**C.** Perimetrium  
**D.** Parametrium  
**E.** Submucosa
- 14.** As a result of a nose injury, a boxer has lost his sense of smell. What cells were damaged in this case, causing this pathology?
- A.** Neurosensory cells  
**B.** Epithelial supporting cells  
**C.** Basal epitheliocytes  
**D.** Ciliated epitheliocytes  
**E.** Microvillous epithelial cells
- 15.** A human embryo unattached to the endometrium was detected in the uterine cavity. What stage of embryo development is it?
- A.** Blastocyst  
**B.** Zygote  
**C.** Morula  
**D.** Gastrula  
**E.** Neurula
- 16.** A 63-year-old man was diagnosed with deep vein thrombophlebitis of the lower leg. What layer of these vessels is damaged in this case?
- A.** Endothelial layer  
**B.** Subendothelial layer  
**C.** Layer of elastic fibers  
**D.** Layer of smooth muscle cells  
**E.** Connective tissue layer
- 17.** A 52-year-old woman was injected with a local anesthetic before the tooth extraction. What mechanism of action underlies the analgesic effect of this drug?
- A.** Disrupted physiological intactness of the nerve fibers  
**B.** Disrupted isolated conduction of excitation in the nerve fibers  
**C.** Disrupted anatomical intactness of the nerve fibers  
**D.** Disrupted functioning of microtubules in the nerve fibers  
**E.** Disrupted axonal transport in the nerve fibers
- 18.** A child presents with reduced thyroid function from birth. What pathological condition can develop in this child as a result?
- A.** Cretinism  
**B.** Dwarfism  
**C.** Giantism  
**D.** Hypopituitarism  
**E.** Skin hyperpigmentation
- 19.** In an experiment, the dependence of the blood pressure from the vascular resistance was measured in animals. In what vessels will this resistance be the largest?
- A.** Arterioles  
**B.** Arteries  
**C.** Aorta  
**D.** Veins  
**E.** Capillaries
- 20.** During an abdominal surgery, the patient developed a reflex cardiac arrest. Name the location of this reflex center:
- A.** Medulla oblongata  
**B.** Spinal cord  
**C.** Midbrain  
**D.** Diencephalon  
**E.** Cerebral cortex
- 21.** Examination of a patient detects neck thickening, exophthalmos, fever, and a pulse of 110/min. What hormone levels must be measured in the patient's blood?
- A.** Thyroxine  
**B.** Sex hormones  
**C.** Catecholamines  
**D.** Insulin  
**E.** Cortisol
- 22.** Before the sports competition, an increase in blood pressure and heart rate is observed in the athletes. What part of the CNS causes these changes?
- A.** Cerebral cortex  
**B.** Diencephalon  
**C.** Medulla oblongata  
**D.** Cerebellum  
**E.** Hypothalamus
- 23.** Dysfunction of the islets of Langerhans

causes a decrease in the production of certain substances. Name these substances:

- A. Glucagon and insulin
- B. Thyroxine and calcitonin
- C. Insulin and adrenaline
- D. Kallikrein and angiotensin
- E. Parathyroid hormone and cortisone

24. A scar made up of connective tissue has formed at the site of a healed wound. What substance is the main component of this type of connective tissue?

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

25. What hormone stimulates the inclusion of calcium into the osteoblasts of dental bone tissues?

- A. Calcitonin
- B. Parathyroid hormone
- C. Cortisol
- D. Insulin
- E. Thyroxine

26. To stimulate the labor activity of a woman, the doctor prescribed her prostaglandin E<sub>2</sub>. What acid is used to synthesize this compound?

- A. Arachidonic
- B. Phosphatidic
- C. Palmitic
- D. Stearic
- E. Glutamic

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

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

28. A 43-year-old man has stomatitis, glossitis, and a smooth crimson tongue. His complete blood count shows the following: Hb — 100 g/L, erythrocytes —  $2.3 \cdot 10^{12}/L$ , color index — 1.30. What pathological condition can be characterized by such clinical and laboratory findings?

- A. Vitamin B<sub>12</sub> deficiency
- B. Iron deficiency
- C. Disturbed porphyrin synthesis
- D. Hypoplasia of the red bone marrow
- E. Erythrocyte hemolysis

29. A 1.5-year-old child with signs of ni-

trate poisoning was brought to the admission department with persistent cyanosis, dyspnea, and convulsions. What form of hemoglobin causes these signs?

- A. Methemoglobin
- B. Carbohemoglobin
- C. Carboxyhemoglobin
- D. Reduced hemoglobin
- E. Oxyhemoglobin

30. A 27-year-old man came to a doctor. Examination detects enlarged hands, feet, and lower jaw, deformed joints (*kiphosis*), and hormonal disorders (impotence and testicular atrophy). What gland is dysfunctional in this patient, as indicated by these signs?

- A. Anterior pituitary gland
- B. Adrenal glands
- C. Pineal gland
- D. Thyroid gland
- E. Parathyroid glands

31. A patient diagnosed with acute pulpitis complains of toothache and swollen lower face on the side of the affected tooth. What is the leading mechanism of edema development in this disease?

- A. Disturbed microcirculation in the lesion focus
- B. Disturbed nerve regulation of water metabolism
- C. Disturbed trophic function of the nervous system
- D. Hypoproteinemia
- E. Increased aldosterone production

32. A 58-year-old man was diagnosed with acute heart failure. He presents with a decreased 24-hour urine output. What pathogenetic mechanism is the cause of oliguria in this case?

- A. Decreased glomerular filtration
- B. Decreased number of the functioning glomeruli
- C. Decreased oncotic blood pressure
- D. Increased hydrostatic pressure applied to the capillary wall
- E. Decreased permeability of the glomerular membrane

33. Examination of a woman revealed increased sweating, tachycardia, weight loss, and tremor. What endocrine pathology can cause these signs?

- A. Hyperthyroidism
- B. Hypothyroidism
- C. Hypergonadism
- D. Hypogonadism
- E. Hypoaldosteronism

**34.** A patient was diagnosed with caries complicated by chronic pulpitis. During an examination, the dentist found a proliferation of soft bright-pink tissue in the form of a polyp over the preserved part of the patient's dental crown. What disease can be characterized by these signs?

- A.** Granulating pulpitis
- B.** Fibrous pulpitis
- C.** Gangrenous pulpitis
- D.** Diffuse purulent pulpitis
- E.** Serous pulpitis

**35.** Examination revealed a carious cavity on the masticatory surface of the patient's first upper left molar. The cavity has a conic shape, with its apex pointing towards the dental root. Between the cavity and the pulp there are areas of softened, transparent, and replacement dentin. What stage of caries was detected in the patient?

- A.** Acute median caries
- B.** Initial caries
- C.** Acute superficial caries
- D.** Chronic superficial caries
- E.** Acute deep caries

**36.** A woman had a formation with a fibrous capsule at the tip of her tooth. The formation was surgically removed. Microscopy shows that the formation consists of fibroblasts, macrophages, a small number of lymphocytes, plasma and xanthoma cells, cholesterol crystals, isolated cells of foreign bodies, as well as bands of stratified epithelium. Name this formation.

- A.** Simple granuloma
- B.** Complex granuloma
- C.** Cystogranuloma
- D.** Radicular cyst of the jaw
- E.** Follicular cyst of the jaw

**37.** A woman underwent surgical removal of a mandibular tumor that had the appearance of a detached dense node. The section revealed a red tumor with white spots and small cysts. Histology shows that the tumor consists of giant multinucleated and small mononucleated cells, between which bone trabeculae are formed. What tumor can be characterized by such clinical and laboratory findings?

- A.** Giant cell tumor of bone
- B.** Osteoma
- C.** Osteoid osteoma
- D.** Osteosarcoma
- E.** Ameloblastoma

**38.** A man had acute onset of the disease with high body temperature and enlarged painful spleen. On the 10th day of the disease, roseola-papular rash appeared on

the skin of his abdomen. On the 21st day, the patient died of peritonitis. In the ileum of the deceased, autopsy revealed deep ulcers in the area of necrotized groups of lymphoid follicles (Peyer's patches), one of which perforated; fibrinopurulent diffuse peritonitis is observed. What disease can be characterized by these signs?

- A.** Typhoid fever
- B.** Dysentery
- C.** Intestinal amoebiasis
- D.** Cholera
- E.** Salmonellosis

**39.** Autopsy of the body of a deceased, who was diagnosed with tuberculosis, detected a cavity 3x2 cm in size in the upper right pulmonary lobe. The cavity communicates with the bronchus. The wall of the cavity is dense and consists of three layers: the inner one is pyogenic, in the middle there is a layer of tuberculous granulation tissue, and the external layer is made up of connective tissue. What disease can be characterized by these signs?

- A.** Fibrocavitary tuberculosis
- B.** Fibrofocal tuberculosis
- C.** Tuberculoma
- D.** Acute focal tuberculosis
- E.** Acute cavitary tuberculosis

**40.** A man bitten by a dog came to a surgeon's office. He has wide lacerations on his face. What aid must be provided for rabies prevention in this case?

- A.** Begin immunization with rabies vaccine
- B.** Prescribe combined antibiotic therapy
- C.** Urgently administer the DPT vaccine
- D.** Hospitalize the patient and provide medical supervision
- E.** Urgently administer normal  $\gamma$ -globulin

**41.** Blood stains were found on the clothes of a person accused of murder. What reaction can prove that it is human blood?

- A.** Precipitation reaction
- B.** Immunofluorescence assay
- C.** Complement fixation test
- D.** Agglutination test
- E.** Neutralization reaction

**42.** A bacteriological laboratory studies the quality of drinking water. The microbial count of the water sample is approximately 100. What microorganisms were taken into account during the analysis?

- A.** All the bacteria grown on the nutrient medium  
**B.** Bacteria of the *Escherichia coli* group  
**C.** Bacteria pathogenic for human and animals  
**D.** Conditionally pathogenic microorganisms  
**E.** Enteropathogenic bacteria and viruses
- 43.** What drug belongs to the pharmacotherapeutic group of angiotensin-converting enzyme inhibitors?
- A.** Enalapril  
**B.** Reserpine  
**C.** Verapamil  
**D.** Anaprilin (Propranolol)  
**E.** Pentamin (Azamethonium bromide)
- 44.** A patient had an angina pectoris attack during a visit to the dentist. What drug must be used in this case?
- A.** Nitroglycerin  
**B.** Verapamil  
**C.** Nitrosorbide (Isosorbide dinitrate)  
**D.** Propranolol  
**E.** No-Spa (Drotaverine)
- 45.** What drug that can penetrate into bone tissue and bone marrow is advisable for the treatment of skeletal system infections (osteomyelitis, osteitis)?
- A.** Lincomycin  
**B.** Benzylpenicillin  
**C.** Bicillin-3  
**D.** Gentamicin  
**E.** Synthomycin (D,L-chloramphenicol)
- 46.** After extraction of an upper premolar, the patient bleeds from the alveolar socket. What should be used to stop the bleeding in this case?
- A.** Thrombin topically  
**B.** Aminocaproic acid  
**C.** Neodicoumarin (Ethyl biscoumacetate)  
**D.** Heparin  
**E.** Vicasol (Menadione)
- 47.** A person came to the admission room with complaints of dry mouth, photophobia, and visual disturbances. Objective examination detected dry hyperemic skin, dilated pupils, and tachycardia. This person was diagnosed with *Atropa belladonna* alkaloids poisoning. What medicine must be used in this case?
- A.** Proserin (Neostigmine)  
**B.** Aceclidine  
**C.** Pilocarpine  
**D.** Armin  
**E.** Diproxime (Trimedoxime bromide)
- 48.** A proteolytic enzyme was prescribed for the treatment of abscessing parodontosis. Name this drug:
- A.** Crystalline trypsin  
**B.** Lidase  
**C.** Streptoliase  
**D.** Actilyse (Alteplase)  
**E.** Contrykal (Aprotinin)
- 49.** What diuretic will have no diuretic effect in a patient diagnosed with Addison's disease?
- A.** Spironolactone  
**B.** Furosemide  
**C.** Hydrochlorothiazide  
**D.** Triamterene  
**E.** Ethacrynic acid
- 50.** A patient developed a seizure attack during a tooth extraction. What first aid medicine must be used in this case?
- A.** Sibazon (Diazepam)  
**B.** Dimedrol (Diphenhydramine)  
**C.** Corvalol  
**D.** Valerian tincture  
**E.** Phenobarbital
- 51.** A patient, who was taking a blood pressure-lowering drug, complains of dry mouth. What antihypertensive agent has such a side effect?
- A.** Clophelin (Clonidine)  
**B.** Dibazol (Bendazol)  
**C.** Verapamil  
**D.** Anaprilin (Propranolol)  
**E.** Adelphane (Reserpine + Dihydralazine)
- 52.** A man diagnosed with arthritis of the maxillofacial joint came to a doctor. The doctor prescribed him an ointment with diclofenac sodium as the active substance. What is the mechanism of action of this medicine?
- A.** Cyclooxygenase inhibition  
**B.** Phospholipase inhibition  
**C.** Activation of opiate receptors  
**D.** Blockade of opiate receptors  
**E.** Cyclooxygenase activation
- 53.** Accelerated synthesis of a certain polysaccharide precedes the deposition of mineral salts into the organic matrix of the tooth. Name this polysaccharide:
- A.** Chondroitin sulfate  
**B.** Heparin  
**C.** Glycogen  
**D.** Keratan sulfate  
**E.** Dermatan sulfate

54. A patient developed hypersalivation during dental manipulations. What group of drugs can inhibit saliva production?

- A. Cholinergic antagonists
- B. Cholinergic agonists
- C. Adrenergic antagonists
- D. Adrenergic agonists
- E. Astringents

55. A 59-year-old man was diagnosed with a transmural left ventricular myocardial infarction. He died of a true heart rupture — cardiac tamponade. What process in the infarction site could have contributed to the cardiac rupture in this case?

- A. Autolytic processes of myocardial softening (myomalacia)
- B. Replacement of the infarct site with connective tissue (organization)
- C. Increased pressure in the pulmonary circulation
- D. Scar formation with thinning of the left ventricular wall
- E. —

56. A 5-year-old boy suffers from severe headache, nuchal rigidity, vomiting without nausea, herpetic rash on his face, and fever. Bacteriology of what pathological material must be performed to confirm the provisional diagnosis of cerebrospinal meningitis?

- A. Cerebrospinal fluid
- B. Urine culture of *N. meningitidis*
- C. Stool culture of *N. meningitidis*
- D. Vomitus analysis
- E. Obtaining *N. meningitidis* bacteria from the mucosa of the genitourinary system

57. A group of people came to a hospital complaining of weakness, intestinal pain, and indigestion. Their stool tests detected cysts with four nuclei that are characteristic of the following protozoon:

- A. *Entamoeba histolytica*
- B. *Entamoeba coli*
- C. *Balantidium coli*
- D. *Entamoeba gingivalis*
- E. *Giardia*

58. A man has high levels of protein-bound thyroxine (T<sub>4</sub>) and normal levels of free T<sub>3</sub>. How would you describe the basal metabolic rate of this man?

- A. Normal
- B. Increased
- C. Decreased
- D. Extremely high
- E. —

59. A patient has high levels of blood

aldosterone. What physiologically active substance is likely to have contributed to this condition?

- A. Angiotensin II
- B. Prostaglandin E<sub>2</sub>
- C. Cyclic adenosine monophosphate
- D. Cyclic guanosine monophosphate
- E. Natriuretic factor

60. Before diving underwater, pearl hunters make several deep inhaled and exhaled breaths. Why do they do it?

- A. For the maximum possible excretion of CO<sub>2</sub> from the body
- B. To provide the body with oxygen reserves
- C. For the maximum possible excretion of nitrogen from the body
- D. To increase the blood flow in the pulmonary circulation
- E. To increase the diffusing capacity of the lungs

61. Blood plasma of a healthy person contains several dozens of proteins. A disease results in appearance of new proteins in the plasma, particularly the acute-phase proteins. Select an acute-phase protein from the list below.

- A. C-reactive protein
- B. Prothrombin
- C. Fibrinogen
- D. Immunoglobulin G
- E. Immunoglobulin A

62. A urinalysis is being made for a 17-year-old young man. What epithelial cells lining the bladder can be detected by urine sediment microscopy?

- A. Transitional epithelium
- B. Non-keratinized stratified epithelium
- C. Columnar non-stratified epithelium
- D. Cuboidal non-stratified epithelium
- E. Keratinized stratified epithelium

63. Autopsy of the body of a 43-year-old man, who died of heart and lung failure, detected a cavity 3 cm in diameter in his lower right pulmonary lobe. The cavity is filled with green-gray contents. Histology revealed that the wall of this formation is made up of connective tissue and juvenile granulation tissue; the lumen contains neutrophilic leukocytes and their decay products. What type of inflammation is it?

- A. Chronic abscess
- B. Acute abscess
- C. Empyema
- D. Furuncle
- E. Carbuncle

64. Diazepam has been prescribed to a patient who suffers from anxiety, fear, insecurity, and mental stress. What mechanism of action ensures the tranquilizing effect of this medicine?

- A. Interaction with benzodiazepine receptors
- B. Interaction with adrenoceptors
- C. Interaction with cholinoreceptors
- D. Interaction with serotonin receptors
- E. Interaction with dopamine receptors

65. During dental manipulations, the fibers of the twelfth pair of cranial nerves were damaged in the patient. What are the possible consequences of this injury?

- A. Dysfunction of the tongue muscles
- B. Impaired contraction of the soft palate muscles
- C. Impaired contraction of the laryngeal muscles
- D. Impaired contraction of the suprahyoid muscles
- E. Impaired contraction of the pharyngeal muscles

66. A 35-year-old woman came to a doctor with complains of weakness in both her legs throughout the last 4 months, problems with climbing upstairs, and inertness. A loss of muscle mass is observed in the woman. Her diet consists mainly of polished rice. She was provisionally diagnosed with beriberi. What vitamin deficiency is most likely to be present in this case?

- A. B<sub>1</sub> (Thiamine)
- B. B<sub>2</sub> (Riboflavin)
- C. B<sub>3</sub> (Nicotinic acid)
- D. B<sub>6</sub> (Pyridoxine)
- E. C (Ascorbic acid)

67. A man presents with impaired pupillary reflex. His pupils are narrowed and he poorly orients in a dark room. What eyeball muscle is dysfunctional in this case?

- A. *M. dilatator pupillae*
- B. *M. sphincter pupillae*
- C. *M. ciliaris*
- D. *M. obliquus superior*
- E. *M. obliquus inferior*

68. After examination of a 6-year-old girl with sore throat, the doctor suspected diphtheria. He obtained a swab from the child's tonsils. What microscopic presentation is characteristic of the causative agent of this disease?

- A. Gram-positive bacilli, arranged at an angle to each other
- B. Gram-positive cocci, arranged in chains
- C. Gram-negative cocci, arranged in pairs
- D. Gram-negative bacilli, arranged chaotically
- E. —

69. A man complains to a dentist about problems with chewing and pain that occurs when he moves his jaw backwards. The doctor detected an inflammation of a certain masticatory muscle in this patient. Name this muscle:

- A. Temporal muscle (posterior fibers)
- B. Temporal muscle (anterior fibers)
- C. Medial pterygoid muscle
- D. Lateral pterygoid muscle
- E. Masseter muscle

70. Auscultation detects a murmur in the projection of the patient's cardiac apex. What heart valve is likely to have a defect in this case?

- A. Mitral valve
- B. Tricuspid valve
- C. Pulmonary trunk valve
- D. Aortic valve
- E. —

71. A doctor has detected an inflammation of the patient's oral mucosa, accompanied by excruciating pain. What nerve is affected in this case?

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

72. What ligaments connect the arches of the adjacent vertebrae?

- A. Ligamenta flava
- B. Interspinous ligaments
- C. Anterior longitudinal ligament
- D. Posterior longitudinal ligament
- E. —

73. In tubootitis, tympanic membrane retraction occurs. The handle of one of the auditory ossicles, connected to the tympanic membrane, becomes more horizontal. In such cases, the doctor needs to determine the position of the following bone during the examination:

- A. *Malleus*
- B. *Incus*
- C. *Stapes*
- D. *Squama os temporale*
- E. *Processus mastoideus*

**74.** Alkaline phosphatase catalyzes the reactions of phosphorus-ether bonds hydrolysis with release of phosphate ions that play an important role in the formation of bone mineral matrix. What factors ensure the course of such reactions?

- A.**  $Zn^{2+}$ , pH=7.0–7.4
- B.**  $Zn^{2+}$ , pH=5.0–5.5
- C.**  $Fe^{3+}$ , pH=7.0–7.4
- D.**  $Fe^{3+}$ , pH=5.0–5.5
- E.**  $Fe^{2+}$ , pH=7.0–7.4

**75.** An 18-year-old man came to a doctor with complaints of a facial deformity. Examination detected a tumor-like formation on his lower jaw. Microscopy revealed that the thickened area of this formation consists of large homogeneous cells, such as histiocytes, and a large number of eosinophils. Horizontal resorption of the patient's interdental septa is observed. What tumor-like disease can be characterized by this histological presentation?

- A.** Eosinophilic granuloma
- B.** Cherubism
- C.** Fibromatous epulis
- D.** Fibrous dysplasia
- E.** Giant cell epulis

**76.** A patient with inflammation of the nasal mucosa and a disturbed sense of smell came to the otorhinolaryngology department. What area of the nasal mucosa is most likely to be affected in this case?

- A.** Upper nasal meatus
- B.** Middle nasal meatus
- C.** Lower nasal meatus
- D.** Common nasal meatus
- E.** Nasal septum

**77.** After the extraction of upper tooth number 7, air appeared in the tooth socket. The wall of what paranasal sinus is most likely to be breached in this case?

- A.** Maxillary sinus
- B.** Sphenoid sinus
- C.** Frontal sinus
- D.** Middle air cells of the ethmoid sinus
- E.** Posterior air cells of the ethmoid sinus

**78.** What nerves must be anesthetized for extraction of an upper third molar?

- A.** Posterior superior alveolar nerves
- B.** Anterior superior alveolar nerves
- C.** Middle superior alveolar nerves
- D.** Greater palatine nerve
- E.** Posterior superior nasal nerves

**79.** A 12-year-old girl has an ulcer 5 mm in diameter at the bottom of her oral cavi-

ty. The ulcer is surrounded with a bright red tissue that pales when pressed. An ulcer biopsy was performed. Microscopy revealed a tumor composed of numerous blood-filled cavities. The cavities are lined with a single layer of endothelial cells. Between them there is stroma, made up of loose connective tissue. What type of tumor can be characterized by such clinical and laboratory findings?

- A.** Ulcerated cavernous hemangioma
- B.** Rhabdomyosarcoma with secondary changes
- C.** Non-keratinizing squamous cell carcinoma
- D.** Giant cell tumor of bone
- E.** Ulcerated melanoblastoma

**80.** A 24-year-old man died of acute cardiopulmonary failure. During the last two days he complained of a cough with a small amount of «rusty» sputum, chest pain on the right that intensified sharply during breathing, and a fever of 39°C. Autopsy of the body revealed red, dense, and airless lower pulmonary lobes; the pleura is covered in fibrin threads and membranes. The deceased was diagnosed with bilateral pleuropneumonia of the lower pulmonary lobes. What stage of pneumonia was most likely in this man?

- A.** Red hepatization
- B.** Resolution
- C.** Congestion
- D.** Gray hepatization
- E.** —

**81.** A woman complains of pain in her left lower jaw and lower teeth. What nerves are likely to be damaged in this case, causing these signs?

- A.** Sensory fibers of the third branch of the V pair of cranial nerves
- B.** Motor fibers of the third branch of the V pair of cranial nerves
- C.** The first branch of the V pair of cranial nerves
- D.** The second branch of the V pair of cranial nerves
- E.** The VII pair of cranial nerves

**82.** During the autopsy of the woman's body, the ovarian section revealed a round formation 2.5 cm in diameter, filled with a clear light yellow fluid and surrounded by a smooth shiny wall. What formation was detected during the autopsy?



- A. Cyst
- B. Node
- C. Ulcer
- D. Infiltrate
- E. Node with necrosis in its center

83. After a tooth extraction, the patient developed bleeding. Blood test revealed a decrease in the prothrombin index. What vitamin deficiency can be the cause of this condition?

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

84. During the oral cavity examination, the dentist detected an inflammation of the tissues that surround the tooth. What anatomical structure is inflamed in this case?

- A. *Paradontium*
- B. *Cementum*
- C. *Gingiva*
- D. *Alveola dentalis*
- E. —

85. A dental plaque swab was stained using the Burri-Gins technique. Microscopy of the swab revealed red cells of microorganisms against a dark brown background, with some of the bacteria surrounded by a light halo. What structure of the microorganisms was detected?

- A. Capsule
- B. Outer membrane
- C. Peptidoglycan layer
- D. Exoenzymes attached to the cell wall
- E. Protoplast

86. A dentist has found an ulcer on the oral mucosa of a 7-year-old girl. The ulcer is 1.5 cm in diameter, it has uneven edges and a gray floor. After the ulcer scrape was stained using the Ziel-Nielsen technique, thin ruby-red bacilli were detected in the slide. The bacilli are isolated or arranged in chaotic clusters. This pathogen is characteristic of the following disease:

- A. Tuberculosis
- B. Syphilis
- C. Actinomycosis
- D. Diphtheria
- E. Candidiasis

87. The leading role in the process of dentin and cementum mineralization belongs to osteocalcin protein that has a high ability to bind calcium ions due to the presence of residues of a certain modified amino acid in its polypeptide chain. Name this amino acid:

- A.  $\gamma$ -carboxyglutamic amino acid
- B.  $\beta$ -alanine
- C.  $\gamma$ -aminobutyric amino acid
- D.  $\beta$ -carboxyaspartic amino acid
- E.  $\beta$ -aminopropionic amino acid

88. What microflora predominates at the beginning of dental plaque formation on the tooth surface?

- A. Streptococci, Veillonella
- B. Obligate anaerobes
- C. Fusobacteria
- D. Bacteroids, Candida
- E. Leptotrichia

89. Numerous substances dangerous to the body can get into the oral cavity with water and food. What components of saliva and gingival fluid provide protection against these compounds?

- A. Lysozyme, immunoglobulins, leukocytes
- B. Lactate dehydrogenase, glucuronidase
- C. Lactic acid, urea, ammonia
- D. Alkaline and acid phosphatase
- E. Hyaluronidase, cathepsin D

90. A man came to a dentist with complaints of pain, redness, and swelling of the gums. He was provisionally diagnosed with herpetic gingivostomatitis. What virus can cause this disease?

- A. Herpes simplex virus, type 1
- B. Herpes simplex virus, type 2
- C. Herpes zoster virus
- D. Cytomegalovirus
- E. Epstein-Barr virus

91. Two years after a tooth extraction, the patient presents with a decrease in the volume of the tooth socket. What pathological process does it indicate?

- A. Dysfunctional atrophy
- B. Pressure-induced atrophy
- C. Atrophy caused by insufficient blood circulation
- D. Neurotic atrophy
- E. Atrophy caused by physical factors

92. Vitamin D<sub>3</sub> in the human body undergoes a number of biochemical transformations with formation of its most bioactive derivative — calcitriol. What hormone is needed to activate the enzymatic reactions of oxidative hydroxylation of this vitamin in the kidneys?

- A. Parathyroid hormone
- B. Calcitonin
- C. Cortisol
- D. Aldosterone
- E. Thyroxine

93. In a 46-year-old man, examination revealed the processes of cartilaginous tissue destruction in the knee joints. What are the specific features of cartilaginous tissue in this location?

- A. It has no perichondrium
- B. It has perichondrium
- C. It has osteoblasts
- D. It has isogenic groups of osteocytes
- E. It has no isogenic groups of osteocytes

94. A patient diagnosed with cardiogenic shock needs intravenous administration of a non-glycoside cardiotonic. What drug must be used in this case?

- A. Dobutamin
- B. Amrinone
- C. Cordiamin (Nikethamide)
- D. Milrinone
- E. Corglycon (Convallaria glycosides)

95. The most common cause of incomplete lipid digestion in the digestive tract and an increase in the levels of neutral fats in the feces is a deficiency of a certain enzyme. Name this enzyme:

- A. Pancreatic lipase
- B. Phospholipase
- C. Enterokinase
- D. Gastric lipase
- E. Intestinal lipase

96. In protein biosynthesis that occurs in a eukaryotic cell, one of the stages is the conversion of pro-mRNA into mRNA. As a result of this process, mRNA «matures». Name this process.

- A. Processing
- B. Transcription
- C. Repair
- D. Replication
- E. Transduction

97. Under the influence of ionizing radiation or in case of avitaminosis *E*, an increased permeability of lysosome membranes can be observed in the cells. What are the likely consequences of such pathology?

- A. Partial or complete destruction of the cell
- B. Intensive protein synthesis
- C. Intensive energy synthesis
- D. Restoration of the cytoplasmic membrane
- E. Formation of the mitotic spindle

98. A 6-year-old child with diphtheria developed skin rash 10 days after the administration of antitoxic diphtheria serum. The rash is accompanied by severe itching, fever, and joint pain. What is the most likely disease in this case?

- A. Serum sickness
- B. Anaphylactic reaction
- C. Atopy
- D. Delayed-type hypersensitivity
- E. Allergic contact dermatitis

99. In an experiment, a human cell culture was irradiated with protons. As a result of irradiation, a damage to the nucleoli was observed. Formation of what organelles will be disrupted in this case?

- A. Ribosomes
- B. Endoplasmic reticulum
- C. Golgi apparatus
- D. Lysosomes
- E. Microtubules

100. Name the dental tissue that is similar to bone tissue in terms of its development source, morphological organization, and mineralization degree:

- A. Cellular cementum
- B. Enamel
- C. Pulp
- D. Periodontium
- E. Acellular cementum

101. An outbreak of intestinal infection was registered at a kindergarten. Bacteriology of the patient's feces detected no pathogenic bacteria. Electron microscopy revealed round formations with clear margins and a thick sleeve, resembling a wheel. What is the most likely causative agent of this infection?

- A. *Rotavirus*
- B. *Adenovirus*
- C. *Coxsackievirus*
- D. *E. coli*
- E. *P. vulgaris*

102. A child has signs of achondroplasia (dwarfism). This disease is known to be monogenic and the gene responsible for the development of this anomaly is dominant. The child's brother develops without pathologies. What will be the genotype of the healthy child in this pair of siblings?

- A. aa
- B. AA
- C. Aa
- D. AaBb
- E. AABB

103. In an experiment, thymus was removed

from the newborn mice. After its removal, the blood of these mice exhibited low lymphocyte count, no production of antibodies, and no rejection of foreign tissues. In the work of which system of the body thymus plays an important role?

- A. Immune
- B. Circulatory
- C. Endocrine
- D. Nervous
- E. Reproductive

**104.** A patient has inflammation of the parotid salivary gland. What nerve can become involved in the inflammatory process?

- A. *N. facialis*
- B. *N. mandibularis*
- C. *N. lingualis*
- D. *N. maxillaris*
- E. *N. tympanicus*

**105.** Examination of the epithelial cells from the buccal mucosa of a man detected that the majority of cell nuclei contain one Barr body. What syndrome can be characterized by these findings?

- A. Klinefelter syndrome
- B. Turner syndrome
- C. Edwards syndrome
- D. Patau syndrome
- E. Down syndrome

**106.** Cysts with eight-core nuclei were found in the feces of a canteen worker during a preventive examination. Such cysts are characteristic of the following protozoon:

- A. *Entamoeba coli*
- B. *Giardia*
- C. *Balantidium*
- D. *Trichomonas hominis*
- E. *Toxoplasma gondii*

**107.** What component of the parodontium performs the sensory function that regulates the force of masticatory pressure applied to the teeth?

- A. Periodontium
- B. Gums
- C. Periosteum
- D. Bones of the alveolar process
- E. Cement

**108.** The ability of teeth to resist the action of acid depends on the ratio of calcium and phosphorus in their enamel. What is the normal ratio of these elements?

- A. 1.67
- B. 1.1
- C. 0.9
- D. 0.8
- E. 0.5

**109.** The patient's blood pressure was measured by auscultation of the vascular sounds. What is the name of the researcher who proposed this method of blood pressure measuring?

- A. Korotkov
- B. Ludwig
- C. Riva-Rocci
- D. Goltz
- E. Siechenov

**110.** A child suffers from hepatomegaly, hypoglycemia, and convulsions, especially on an empty stomach and in stressful situations. The child was diagnosed with von Gierke disease. What enzyme has a genetic defect in this case?

- A. Glucose-6-phosphatase
- B. Amylo-1,6-glucosidase
- C. Phosphoglucomutase
- D. Glycogen phosphorylase
- E. Glucokinase

**111.** Autopsy of the body of a woman who died of uremia revealed the kidneys 7x3.5x2 cm in size, with an evenly fine-grained surface and a pale medullary layer thinned down to 0.3 cm. Histology shows sclerosis and hyalinosis of the majority of glomeruli, hyalinosis of the arterioles, sclerosis of artery walls with concentric narrowing of the lumen, and atrophic changes in the tubules. What pathology can be characterized by such macro- and microscopic changes in the kidneys?

- A. Primary contracted kidney
- B. Secondary contracted kidney
- C. Pyelonephritic contracted kidney
- D. Atherosclerotic nephrosclerosis
- E. Amyloid contracted kidney

**112.** A patient diagnosed with streptococcal pneumonia was prescribed an antimicrobial drug that affects sensitive microorganisms by inhibiting their cell wall biosynthesis. Name this drug:

- A. Benzylpenicillin sodium salt
- B. Erythromycin
- C. Azithromycin
- D. Doxycycline hydrochloride
- E. Gentamicin sulfate

**113.** A child presents with caries development and disturbed osteogenesis due to an insufficient intake of a certain microelement. Name this microelement:

- A. Fluorine
- B. Potassium
- C. Iodine
- D. Cobalt
- E. Iron

**114.** A patient with hypersensitivity to sulfonamides needs conduction anesthesia for a tooth extraction. What drug should be used in this case?

- A. Lidocaine
- B. Anaesthesin (Benzocaine)
- C. Novocaine (Procaine)
- D. Dicain (Tetracaine)
- E. Cocaine

**115.** What analgesic increases the risk of bleeding after a tooth extraction?

- A. Acetylsalicylic acid
- B. Paracetamol
- C. Dimedrol (Diphenhydramine)
- D. Analgin (Metamizole)
- E. Codeine phosphate

**116.** A large number of immunoglobulins with different antigenic specificity forms from a small number of genes. Name this process of immunoglobulin formation:

- A. Recombination
- B. Translocation
- C. Transcription
- D. Deletion
- E. Replication

**117.** What amino acid substitution occurs during the formation of hemoglobin S?

- A. Glutamic acid is replaced by valine
- B. Threonine is replaced by lysine
- C. Lysine is replaced by glutamine
- D. Histidine is replaced by arginine
- E. Glycine is replaced by asparagine

**118.** A 23-year-old man has a perforation in his hard palate. In the area of this perforation, there is a dense formation with clear margins. Microscopy of this formation revealed a large focus of caseous necrosis, surrounded by granulation tissue with endovasculitis and cellular infiltrate, consisting of lymphocytes and epithelioid cells, with a predominance of plasma cells. What disease can be characterized by these findings?

- A. Syphilis
- B. Tuberculosis
- C. Leprosy
- D. Scleroma
- E. Sarcoma

**119.** During a visit to the dentist, the patient

developed bronchospasm. What medicine must be used in this case?

- A. Salbutamol
- B. Analgin (Metamizole)
- C. Atenolol
- D. Naphthyzin (Naphazoline)
- E. Anaprilin (Propranolol)

**120.** When working, a dentist has to remain standing for a long time, which can result in blood stasis in the leg veins and their varicose dilation. What specifically causes the blood stasis in this case?

- A. Reduced contraction of the skeletal muscles in the legs
- B. Decreased blood pressure gradient in the veins
- C. Decreased suction effect in the chest
- D. Decreased residual driving force of the heart
- E. Decreased pumping effect of the diaphragm on the abdominal organs

**121.** What bioactive substance stimulates the release of bicarbonate ions by the cells of the pancreatic ducts?

- A. Secretin
- B. Histamine
- C. Gastrin
- D. Cholecystokinin-pancreozymin (CCK-PZ)
- E. —

**122.** A 65-year-old man developed acute mandibular osteomyelitis. Within 3 days he developed a marked edema of the skin and submandibular soft tissues of the neck. Microscopy detected there a diffuse infiltration with neutrophils. What complication of the underlying disease did the patient develop?

- A. Phlegmon
- B. Abscess
- C. Carbuncle
- D. Furuncle
- E. Actinomycosis

**123.** A patient was hospitalized with the signs of acute blood loss. What is the leading component in the pathogenesis of posthemorrhagic shock?

- A. Hypovolemia
- B. Decreased cardiac output
- C. Decreased vascular tone
- D. Anemia
- E. Hypoxia

**124.** In an experiment, the oxygen supply to an isolated mammalian nerve cell was completely stopped. How will the resting potential change in this case?

- A. Disappear
- B. Remain unchanged
- C. Significantly increase
- D. Significantly decrease
- E. Slightly increase

**125.** A patient diagnosed with arthritis of the maxillofacial joint was taking a non-narcotic analgesic that is a paraaminophenol derivative. Select this drug from the list:

- A. Paracetamol
- B. Diclofenac sodium
- C. Butadion (Phenylbutazone)
- D. Analgin (Metamizole)
- E. Ibuprofen

**126.** A victim of a car accident had no respiratory or cardiac activity for 10 seconds. What terminal state can be characterized by these signs?

- A. Clinical death
- B. Traumatic shock, erectile phase
- C. Traumatic shock, torpid phase
- D. Preagony
- E. Agony

**127.** During preventive examination a man presents with enlarged thyroid gland, exophthalmia, body temperature of  $37.3^{\circ}\text{C}$ , tachycardia, and trembling fingers. What pathology of the thyroid gland did the patient develop?

- A. Graves' disease
- B. Thyroid adenoma
- C. Myxedema
- D. Endemic goiter
- E. Sporadic cretinism

**128.** A 40-year-old woman was diagnosed with bronchial asthma that manifests as periodic asthma attacks. What type of respiratory failure is observed in the woman during the asthma attack?

- A. Obstructive
- B. Extrapulmonary
- C. Pulmonary restrictive
- D. Dysregulatory
- E. Hypoxemic

**129.** Mitochondrial respiratory chain contains complex cytochrome proteins in its structure. What type of reactions do they catalyze?

- A. Redox
- B. Transamination
- C. Hydration
- D. Deamination
- E. Decarboxylation

**130.** A 56-year-old man diagnosed with

a valvular malformation complains of leg edemas. What is the local pathogenetic factor of edema in this case?

- A. Increased hydrodynamic blood pressure
- B. Increased oncotic blood pressure
- C. Decreased permeability of the vessel wall
- D. Decreased hydrodynamic blood pressure
- E. Increased interstitial pressure

**131.** Divers risk developing decompression sickness, when they rapidly rise from the depths to the surface, which can be lethal due to gas embolism. What gas is released in this case?

- A.  $\text{N}_2$
- B.  $\text{O}_2$
- C.  $\text{CO}_2$
- D. CO
- E.  $\text{NO}_2$

**132.** Histology of the heart valves of a patient who died of acute heart failure revealed mucoid edema, fibrinoid changes, sclerosis, and fresh and old thrombi on the obturating edge of the valve. What form of endocarditis is observed in the deceased?

- A. Recurrent verrucous endocarditis
- B. Fibroplastic endocarditis
- C. Polypous ulcerative endocarditis
- D. Diffuse endocarditis
- E. —

**133.** A doctor determined that the patient had a genetic defect of lipoprotein lipase. What will be characteristic of the biochemical analysis of this patient's blood?

- A. Hypertriacylglycerolemia
- B. Hypoglycemia
- C. Hyperglycemia
- D. Hypotriacylglycerolemia
- E. Hypochylomicronemia

**134.** A man with alcoholism was diagnosed with hepatic cirrhosis. Over the past six months, he developed varicose veins on his abdomen, splenomegaly, and ascites (portal hypertension syndrome). What complication is most likely to be lethal for the patient?

- A. Bleeding from the varicose veins in the gastrointestinal tract
- B. Hepatolienal syndrome
- C. Hypoproteinemia
- D. Hepatic encephalopathy
- E. Accelerated erythrocyte hemolysis

**135.** In a 65-year-old man with portal hypertension, the substances that are being neutralized in the liver enter his general bloodstream through portocaval

anastomoses. What type of hepatic coma will develop in the patient in this case?

- A. Shunt
- B. Parenchymatous
- C. Mixed
- D. Hepatocellular
- E. Ketoacidotic

**136.** A patient was diagnosed with xeroderma pigmentosum that manifested in skin keratinization, eye damage, and dilation of capillaries. In this disease, prolonged exposure to UV radiation results in skin tumors. What exogenous factor will significantly aggravate the condition of a patient with this diagnosis?

- A. Light
- B. Ultrasound
- C. High temperature
- D. Overexposure to cold
- E. High humidity

**137.** Thirty minutes after drinking mango juice, a child suddenly developed a limited swelling on the soft palate that hindered swallowing and later breathing. The mucosa in the area of the swelling is hyperemic and painless. Blood test detected eosinophilia. The child's body temperature is normal. From the family history it is known that the child's older sister had bronchial asthma attacks. What type of edema did this child most likely develop?

- A. Allergic
- B. Inflammatory
- C. Cardiac
- D. Alimentary
- E. Hepatic

**138.** A patient diagnosed with stomatitis came to a dentist. Objectively, against the background of inflammatory reaction of the oral mucosa, increased salivation is observed, forcing the patient to spit constantly. What water-electrolyte metabolic imbalance is likely to develop in this case?

- A. Hyperosmolar hypohydration
- B. Hypoosmolar hypohydration
- C. Hyperosmolar hyperhydration
- D. Hypoosmolar hyperhydration
- E. There will be no water-electrolyte metabolic imbalances

**139.** During a surgery on the parotid gland, the surgeon ligated a vein passing through the center of this gland. Name this vein:

- A. *V. retromandibularis*
- B. *V. facialis*
- C. *Vv. pharyngeae*
- D. *V. lingualis*
- E. *Vv. thyroideae superiores*

**140.** A patient was diagnosed with caries and underwent an oropharyngeal swab. In the sample, microscopy detected unicellular organisms with wide pseudopodia; their cytoplasm is clearly divided into two layers, while the nucleus is barely visible. What protozoon was detected in the swab?

- A. *Entamoeba gingivalis*
- B. *Lambliia intestinalis*
- C. *Trichomonas hominis*
- D. *Entamoeba coli*
- E. *Entamoeba histolytica*

**141.** During mitosis, chromosome disjunction and movement toward opposite poles of the cell has been disturbed because of the decay of microtubules, contained in the centrioles. What protein makes up centriole microtubules?

- A. Tubulin
- B. Dynein
- C. Myosin
- D. Actin
- E. Vimentin

**142.** An ultrasound of the heart of a 1.5-year-old child revealed incomplete closure of the cardiac foramen ovale. Where is it located in the heart?

- A. Interatrial septum
- B. Interventricular septum
- C. Right ventricular wall
- D. Left ventricular wall
- E. —

**143.** Costal arch is an important topographic landmark of the human body. It is formed by the cartilage of the following ribs:

- A. From 7 to 10
- B. From 1 to 7
- C. From 11 to 12
- D. From 1 to 12
- E. Only 12

**144.** What is the heart rate of a patient diagnosed with paroxysmal tachycardia?

- A. <140/min.
- B. 90–100/min.
- C. 100–110/min.
- D. 110–120/min.
- E. 120–130/min.

**145.** Glucosuria develops because of impaired renal function. What pathological process can cause the development of

glucosuria?

- A. Decreased glucose reabsorption in the proximal tubules
- B. Decreased glucose reabsorption in the distal tubules
- C. Increased glucose filtration in the glomeruli
- D. Decreased glucose filtration in the glomeruli
- E. Increased tubular secretion of glucose

**146.** A patient needs a surgery on the cervical part of the trachea. Through what part of the neck will the surgeon access the trachea?

- A. Omotracheal triangle
- B. Submandibular triangle
- C. Carotid triangle
- D. Omotrapezoid triangle
- E. Lingual triangle

**147.** After the extraction of the second upper molar, the patient developed bleeding from the tooth socket. What vessel is damaged in this case, causing the bleeding?

- A. *Aa. alveolares superiores posteriores*
- B. *Aa. alveolares superiores anteriores*
- C. *A. palatina descendens*
- D. *A. infraorbitalis*
- E. *A. alveolaris inferior*

**148.** A person has an upper jaw injury — one of the first premolars was knocked out.

What maxillary process is damaged in this case?

- A. Alveolar
- B. Frontal
- C. Zygomatic
- D. Palatine
- E. Orbital

**149.** A person complains that lifting the lower jaw is problematic because of an incised wound in the area of the gonial angle. What muscle is likely to be damaged in this case?

- A. *M. masseter*
- B. *M. temporalis*
- C. *M. pterigoideus lateralis*
- D. *M. pterigoideus medialis*
- E. *M. orbicularis oris*

**150.** Histology of the internal organs of a deceased woman, who in life was diagnosed with systemic collagenosis, revealed widespread vascular damage in the form of mucoid and fibrinoid swelling, fibrinoid necrosis of arteriolar walls, and perivascular lymphoplasmacytic infiltrations. What type of inflammation can be characterized by these symptoms?

- A. Acute immune inflammation
- B. Granulomatous inflammation
- C. Chronic immune inflammation
- D. Interstitial diffuse inflammation
- E. —