1. A 10-day-old baby has undergone a surgery for cleft upper lip (<<hare lip>>). A split upper lip is caused by:

a. A non-union of the frontal and maxillary processes of the first branchial arch

b. A non-union of the second branchial arch

c. A non-union of the third branchial arch

d. A non-union of the maxillary and mandibular processes of the first branchial arch

e. A non-union of the tori palatini on the maxillary processes of the first branchial arch

2. A 10-day-old baby has undergone a surgery for cleft upper lip (<<hare lip>>). A split upper lip is caused by:

a. A non-union of the third branchial arch

b. A non-union of the tori palatini on the maxillary processes of the first branchial arch

c. A non-union of the second branchial arch

d. A non-union of the maxillary and mandibular processes of the first branchial arch

e. A non-union of the frontal and maxillary processes of the first branchial arch

3. A 10-year-old Indian boy is brought by his parents to a dentist for a routine dental care. They want to remove the noticeable yellow discoloration of his teeth. His mother reports that they immigrated to Ukraine approximately 6 months ago and a lot of children in their state had the similar staining of their teeth. On intraoral examination there are isolated areas of brown staining, which is particularly severe on the incisors and canines. In addition, some areas have pits which expose the underlying dentin. Which of the following is the most likely diagnosis?

a. Demineralization stage of caries

b. Fluorosis

c. Acid erosion

d. Enamel erosion

e. Enamel hypoplasia

4. A 10-year-old Indian boy is brought by his parents to a dentist for a routine dental care. They want to remove the noticeable yellow discoloration of his teeth. His mother reports that they immigrated to Ukraine approximately 6 months ago and a lot of children in their state had the similar staining of their teeth. On intraoral examination there are isolated areas of brown staining, which is particularly severe on the incisors and canines. In addition, some areas have pits which expose the underlying dentin. Which of the following is the most likely diagnosis?

a. Enamel hypoplasia

b. Acid erosion

c. Enamel erosion

d. Demineralization stage of caries

e. Fluorosis

5. A 10-year-old boy is brought to the physician by his parents because of fever, cough, and fatigue. He has been admitted to the hospital five times because of pneumonia. Attempts to induce immunity using the pneumococcal vaccine have failed. The first hospitalization was at the age of 12 months. Laboratory findings show marked reduction in all classes and subclasses of serum immunoglobulins. Which of the following immune cells is most likely to be reduced in the peripheral blood of this patient?

a. B-cells

b. Neutrophils

c. NK-cells

d. Macrophages

e. T-cells

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b. B-cells

c. Neutrophils
d. NK-cells
e. T-cells

7. A 25-year old woman is admitted to the hospital because of a 6-week history of double vision and difficulty to talk after prolonged speaking. Her husband reports fluctuating droopy eyelids in the morning and evening. An immunologic assay detects the presence of circulating autoantibodies against the certain receptors at the neuromuscular junction. Disturbed binding of which of the following neurotransmitters is the most likely cause of this patient's symptoms?

a. Acetylcholine
b. Serotonin
c. Epinephrine
d. γ-aminobutyric acid (GABA)
e. Dopamine

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a. Epinephrine
b. Serotonin
c. Acetylcholine
d. Dopamine
e. γ-aminobutyric acid (GABA)

9. A 25-year-old patient has been hospitalized with the diagnosis of syphilis. After testing, it was determined that the patient was hypersensitive to bicillin-5. What can be used as a replacement of this drug?

a. Biseptol (Co-trimoxazole)
b. Tetracycline
c. Levomycetin (Chloramphenicol)
d. Streptomycin
e. Ampicillin

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b. Biseptol (Co-trimoxazole)
c. Tetracycline
d. Ampicillin
e. Streptomycin

11. A 28-year-old female patient dies of progressive respiratory failure after she was diagnosed with comminuted fracture of the right hip. Prior to her death she developed severe hypoxemia, neurologic abnormalities, and petechial rash. At autopsy, examination of pulmonary microvasculature shows intraluminal orange sudanophilic droplets. Which of the following complications is the most likely cause of this patient's death?

a. Fat embolism
b. Tumor embolism
c. Thromboembolism
d. Amniotic fluid embolism
e. Air embolism

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a. Air embolism

b. Thromboembolism
c. Tumor embolism
d. Amniotic fluid embolism
e. Fat embolism

13. A 30-year-old patient was diagnosed with a tumor of the body of the mandible that appeared several months ago. Macroscopically, the tumor was represented by a dense whitish tissue that was destroying the patient's jawbone. After its removal, the tumor was examined microscopically. It was revealed that the tumor consisted of a network of odontogenic epithelial strands with various types of branching. What kind of tumor did the patient have in this case?

a. Acanthomatous ameloblastoma
b. Granular cell ameloblastoma
c. Basal cell ameloblastoma
d. Plexiform ameloblastoma
e. Follicular ameloblastoma

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a. Basal cell ameloblastoma
b. Granular cell ameloblastoma
c. Acanthomatous ameloblastoma
d. Plexiform ameloblastoma
e. Follicular ameloblastoma

15. A 32-year-old woman presents with increased facial hair growth, headache and decreased libido. She is also currently concerned about sweating excessively even at room temperature. Neurological examination shows loss of visual acuity in both temporal fields of views. A skull X-ray shows sella turcica enlargement and deformity. Which of the following anatomic structures would you most likely expect to be abnormal in this patient?

a. Hypothalamus
b. ---
c. Pituitary gland
d. Pineal gland
e. Thalamus

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a. Pineal gland
b. ---
c. Hypothalamus
d. Pituitary gland
e. Thalamus

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

a. N. musculocutaneus
b. N. ulnaris
c. N. radialis
d. N. cutaneus antebrachii medialis
e. N. medianus

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a. N. radialis
b. N. ulnaris

c. N. medianus
d. N. cutaneus antebrachii medialis
e. N. musculocutaneus

19. A 34-year-old male comes to the dentist because of a 1-year history of swelling in the right upper jaw. On intraoral examination, a single diffuse 2x1.5 cm swelling is seen on the right side of anterior maxilla. A biopsy specimen of the lesion shows numerous thin-walled sinusoids in the connective tissue, hemosiderin deposition, and numerous giant cells in a hemorrhagic background. Which of the following is the most likely diagnosis?

a. Gingival fibromatosis
b. ---
c. Giant cell epulis
d. Cavernous hemangioma
e. Granular cell ameloblastoma

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a. Granular cell ameloblastoma
b. Gingival fibromatosis
c. ---
d. Cavernous hemangioma
e. Giant cell epulis

21. A 34-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?

a. Amebiasis
b. Giardiasis
c. Toxoplasmosis
d. Trichomoniasis
e. Balantidiasis

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a. Giardiasis
b. Toxoplasmosis
c. Balantidiasis
d. Amebiasis
e. Trichomoniasis

23. A 35-year-old woman is brought to the physician because of a 4-month history of progressive weakness of both lower limbs. She notes difficulty climbing stairs and complains of lethargy and loss of muscle bulk. Her diet consists primarily of <<polished>> rice. A diagnosis of dry beriberi is suspected. Deficiency of which of the following vitamins is most likely to be detected in her blood?

a. Vitamin B_3 (niacin)
b. Vitamin B_1 (thiamine)
c. Vitamin B_2 (riboflavin)
d. Vitamin B_6 (pyridoxine)
e. Vitamin C (ascorbic acid)

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a. Vitamin C (ascorbic acid)

b. Vitamin B_6 (pyridoxine)

c. Vitamin B_1 (thiamine)

d. Vitamin B_2 (riboflavin)

e. Vitamin B_3 (niacin)

25. 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?

a. Centrosomes

b. Mitochondria

c. Smooth endoplasmic reticulum

d. Ribosomes

e. Lysosomes

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a. Smooth endoplasmic reticulum

b. Centrosomes

c. Mitochondria

d. Ribosomes

e. Lysosomes

27. A 37-year-old male was admitted to a hospital complaining of abdominal pain, difficulty in swallowing and breathing, constipation, and nausea. He developed respiratory failure and required endotracheal intubation and ventilation. Two days before, the patient consumed dried salted fish bought from an artisanal producer. Laboratory investigation for infectious pathogen was performed using Kitt-Tarozzi's method. Observation under a bright field microscopy revealed the presence of typical microorganisms with <<tennis racket>> appearance. Which of the following is the most likely diagnosis?

a. Nontyphoidal Salmonella infection

b. Typhoid fever

c. Shigella infection

d. Cholera

e. Botulism

28. A 37-year-old male was admitted to a hospital complaining of abdominal pain, difficulty in swallowing and breathing, constipation, and nausea. He developed respiratory failure and required endotracheal intubation and ventilation. Two days before, the patient consumed dried salted fish bought from an artisanal producer. Laboratory investigation for infectious pathogen was performed using Kitt-Tarozzi's method. Observation under a bright field microscopy revealed the presence of typical microorganisms with <<tennis racket>> appearance. Which of the following is the most likely diagnosis?

a. Typhoid fever

b. Shigella infection

c. Cholera

d. Nontyphoidal Salmonella infection

e. Botulism

29. A 38-year-old woman has developed a bronchial asthma attack. What broncholytic that is a β_2-adrenergic agonist would be effective for providing emergency aid in this case?

a. Adrenaline

b. Salbutamol

c. Ipratropium bromide

d. Platyphyllinum

e. Atropine

30. A 38-year-old woman has developed a bronchial asthma attack. What broncholytic that is a β_2-adrenergic agonist would be effective for providing emergency aid in this case?

a. Adrenaline

b. Ipratropium bromide

c. Salbutamol
d. Platyphyllinum
e. Atropine

31. A 40-year-old male comes to the physician because of recurrent painful flares and swelling of the metatarsal-phalangeal joint of the great toe. Laboratory study of urine sample shows extremely low pH and pink discoloration. Which of the following metabolic intermediates is the most likely cause of changes in this patient's urine?

a. Ammonia
b. Magnesium sulfate
c. Chloride
d. Uric acid
e. Tricalcium phosphate

32. A 40-year-old male comes to the physician because of recurrent painful flares and swelling of the metatarsal-phalangeal joint of the great toe. Laboratory study of urine sample shows extremely low pH and pink discoloration. Which of the following metabolic intermediates is the most likely cause of changes in this patient's urine?

a. Tricalcium phosphate
b. Ammonia
c. Magnesium sulfate
d. Uric acid
e. Chloride

33. 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?

a. ---
b. VIII, IX pairs of cranial nerves
c. VII, VIII pairs of cranial nerves
d. V, VI pairs of cranial nerves
e. IX, X pairs of cranial nerves

34. 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?

a. IX, X pairs of cranial nerves
b. VIII, IX pairs of cranial nerves
c. ---
d. V, VI pairs of cranial nerves
e. VII, VIII pairs of cranial nerves

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

a. Amylase
b. Lactase
c. Lipase
d. Invertase
e. Maltase

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

a. Amylase
b. Maltase
c. Invertase
d. Lipase
e. Lactase

37. A 42-year-old female comes to the physician 2 days after the sudden onset of pain and swelling of her right knee. She has had no injury. Examination of the right knee shows warmth, erythema, and effusions. Laboratory studies show an increase in the concentration of acute phase reactants. Which of the following is the most appropriate pharmacotherapy for this patient?

a. Nonsteroidal anti-inflammatory drugs (NSAIDs)
b. Antidepressants
c. Sulfonamides
d. Antibiotics
e. Opioids

38. A 42-year-old female comes to the physician 2 days after the sudden onset of pain and swelling of her right knee. She has had no injury. Examination of the right knee shows warmth, erythema, and effusions. Laboratory studies show an increase in the concentration of acute phase reactants. Which of the following is the most appropriate pharmacotherapy for this patient?

a. Sulfonamides
b. Nonsteroidal anti-inflammatory drugs (NSAIDs)
c. Antibiotics
d. Antidepressants
e. Opioids

39. A 43-year-old cattle farm worker is brought to the surgeon with fever, malaise, and inflamed lesions on his hands and arms. He reports that about 2 weeks before his presentation at the hospital he noticed small, painless, pruritic papules that quickly enlarged and developed a central vesicle. The vesicles developed into erosion and left painless necrotic ulcers with black, depressed eschar. Gram's staining of the ulcer reveals gram-positive spore-forming bacilli. Which of the following diseases is the most likely cause of these findings?

a. Chickenpox
b. Syphilis
c. Anthrax
d. Plague
e. Tularemia

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a. Syphilis
b. Anthrax
c. Tularemia
d. Chickenpox
e. Plague

41. A 43-year-old woman against the background of septic shock presents with thrombocytopenia, low fibrinogen levels, fibrin degradation products in the blood, and development of petechial hemorrhages. What is the cause of these pathological signs?

a. Autoimmune thrombocytopenia
b. Hemorrhagic diathesis
c. Impaired platelet production
d. Exogenous intoxication
e. DIC syndrome

42. A 43-year-old woman against the background of septic shock presents with thrombocytopenia, low fibrinogen levels, fibrin degradation products in the blood, and development of petechial hemorrhages. What is the cause of these pathological signs?

a. Hemorrhagic diathesis
b. Impaired platelet production
c. Autoimmune thrombocytopenia
d. Exogenous intoxication
e. DIC syndrome

43. A 45-year-old female patient has neurosis with irritability, insomnia, amotivational anxiety. What tranquilizer will be able to eliminate all symptoms of the disease?

a. Diazepam

b. Paracetamol
c. Caffeine-sodium benzoate
d. Levodopa
e. Piracetam

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a. Paracetamol
b. Levodopa
c. Caffeine-sodium benzoate
d. Piracetam
e. Diazepam

45. A 45-year-old woman with hypoparathyroidism came to a dentist. What renal function is likely to be impaired in this patient?

a. Increase of urokinase synthesis
b. Reduction of vitamin B6 synthesis
c. Reduction of calcium reabsorption in the distal tubules
d. Increase of prostaglandin synthesis
e. Reduction of calcium filtration in the renal glomeruli

46. A 45-year-old woman with hypoparathyroidism came to a dentist. What renal function is likely to be impaired in this patient?

a. Reduction of calcium filtration in the renal glomeruli
b. Reduction of calcium reabsorption in the distal tubules
c. Increase of prostaglandin synthesis
d. Reduction of vitamin B6 synthesis
e. Increase of urokinase synthesis

47. A 49-year-old man comes to his physician with complaints of moderate headaches and profuse sweating. He mentions that his coworkers have made comments about his apparent increase in gloves and boots size. He says that since he joined his company 10 years ago he has changed the size of clothes at least 4 times. Physical examination shows hyperhidrosis, noticeable large pores, hypertrichosis, widely spaced teeth and prognathism. Which of the following is the most likely cause of this pathology?

a. Decreased secretion of insulin
b. Excess secretion of growth hormone
c. Excess secretion of vasopressin
d. Decreased secretion of glucocorticoids
e. ---

48. A 49-year-old man comes to his physician with complaints of moderate headaches and profuse sweating. He mentions that his coworkers have made comments about his apparent increase in gloves and boots size. He says that since he joined his company 10 years ago he has changed the size of clothes at least 4 times. Physical examination shows hyperhidrosis, noticeable large pores, hypertrichosis, widely spaced teeth and prognathism. Which of the following is the most likely cause of this pathology?

a. Excess secretion of vasopressin
b. Decreased secretion of glucocorticoids
c. Decreased secretion of insulin
d. ---
e. Excess secretion of growth hormone

49. A 50-year-old patient suddenly developed headache, dizziness, and nausea. Blood pressure --- 220/110 mm Hg. During the intravenous administration of a 0.1% hygronium solution (trepirium iodide), the patient's condition improved. What is the mechanism of action of this drug?

a. Blockade of ganglionic nicotinic receptors
b. Blockade of Ca^·++ channels
c. Activation of alpha_2-adrenoceptors
d. Angiotensin-converting enzyme blockade
e. Blockade of beta_1-adrenoceptors

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b. Activation of alpha_2-adrenoceptors
c. Blockade of ganglionic nicotinic receptors
d. Angiotensin-converting enzyme blockade
e. Blockade of beta_1-adrenoceptors

51. A 52-year-old woman came to a neurologist with complaints of the loss of sensitivity in the skin of the right half of her face in the area of the lower eyelid, nasal bridge, and upper lip. What nerve branch is damaged in this case?

a. Maxillary division of the trigeminal nerve
b. Ophthalmic division of the trigeminal nerve
c. Mandibular division of the trigeminal nerve
d. Greater petrosal nerve, a branch of the facial nerve
e. Chorda tympani, a branch of the facial nerve

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a. Ophthalmic division of the trigeminal nerve
b. Mandibular division of the trigeminal nerve
c. Maxillary division of the trigeminal nerve
d. Chorda tympani, a branch of the facial nerve
e. Greater petrosal nerve, a branch of the facial nerve

53. 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 her lower leg leaves an indentation. What gland is dysfunctional in this woman, causing her pathological condition?

a. Thyroid gland
b. Adrenal glands
c. Gonads
d. Pituitary gland
e. Parathyroid glands

54. 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 her lower leg leaves an indentation. What gland is dysfunctional in this woman, causing her pathological condition?

a. Adrenal glands
b. Thyroid gland
c. Gonads
d. Parathyroid glands
e. Pituitary gland

55. A 56-year-old woman comes to the emergency department complaining of severe abdominal pain for the last several hours. The pain is cramp-like in nature, constant and has worsened over time. She gives a history of episodic right upper abdominal pain for the past few months, mostly after consuming fatty foods, radiating to the tip of the scapula. Ultrasound of the gallbladder shows hyperdense structures with an acoustic shadow (gallstones) and a thickened wall. Which of the following processes is most likely disturbed in presence of the stone in the gallbladder?

a. Emulsification of lipids
b. Carbohydrates digestion to monosaccharides
c. Inhibition of saliva secretion
d. Proteins digestion to amino acids
e. Hydrochloric acid (HCl) secretion in stomach

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hyperdense structures with an acoustic shadow (gallstones) and a thickened wall. Which of the following processes is most likely disturbed in presence of the stone in the gallbladder?

a. Inhibition of saliva secretion
b. Proteins digestion to amino acids
c. Hydrochloric acid (HCl) secretion in stomach
d. Carbohydrates digestion to monosaccharides
e. Emulsification of lipids

57. A 58-year-old male patient visited his dentist with the chief complaint of itching and burning sensation in his mouth. On intraoral examination, diffuse white patches were seen on his tongue, right and left buccal mucosa, as well as on his hard palate and soft palatal region. The potassium hydroxide (KOH) preparation of the specimen revealed non-pigmented septate hyphae. Administration of which of the following is the most appropriate initial step in treatment of this patient?

a. Nystatin
b. Gentamicin
c. ---
d. Tetracycline
e. Penicillin

58. A 58-year-old male patient visited his dentist with the chief complaint of itching and burning sensation in his mouth. On intraoral examination, diffuse white patches were seen on his tongue, right and left buccal mucosa, as well as on his hard palate and soft palatal region. The potassium hydroxide (KOH) preparation of the specimen revealed non-pigmented septate hyphae. Administration of which of the following is the most appropriate initial step in treatment of this patient?

a. ---
b. Penicillin
c. Tetracycline
d. Gentamicin
e. Nystatin

59. 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:

a. Residual nitrogen
b. Albumin
c. Urea
d. Uric acid
e. Amylase

60. 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:

a. Residual nitrogen
b. Uric acid
c. Amylase
d. Urea
e. Albumin

61. A 58-year-old woman comes to her dentist complaining of a <<strange mass>> in her mouth. On intraoral examination of the oral mucosa the dentist reveals a vegetative lesion with a pedunculated base observed at the soft palate level lateral to the base of the uvula. An excisional biopsy is performed and histopathological examination shows proliferations of stratified keratinized squamous epithelium with fibrovascular connective tissue stroma and many papillary infoldings of the epithelium. Which of the following is the most likely pathology revealed by the dentist?

a. Papilloma
b. Fibrolipoma
c. Basal-cell carcinoma
d. Fibroma
e. Epithelial hyperplasia

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a. Papilloma
b. Fibroma
c. Basal-cell carcinoma
d. Epithelial hyperplasia
e. Fibrolipoma

63. A 6-year-old child with suspected active tuberculosis has undergone Mantoux test. What immunobiological substance was administered for this purpose?

a. Tuberculin
b. DPT vaccine
c. BCG vaccine
d. Tularin
e. DT vaccine

64. A 6-year-old child with suspected active tuberculosis has undergone Mantoux test. What immunobiological substance was administered for this purpose?

a. Tularin
b. DPT vaccine
c. Tuberculin
d. DT vaccine
e. BCG vaccine

65. A 6-year-old girl with diphtheria is administered an intravenous injection of diphtheria antitoxin. Ten days after the initial administration of drug, she develops a pruritic rash, fever, and arthralgias. Which of the following is the most likely diagnosis?

a. Delayed type hypersensitivity
b. Allergic contact dermatitis
c. Atopy
d. Anaphylaxis
e. Serum sickness

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a. Delayed type hypersensitivity
b. Atopy
c. Allergic contact dermatitis
d. Serum sickness
e. Anaphylaxis

67. A 60-year-old man with diabetes mellitus is prescribed insulin. What type of pharmacological therapy is it?

a. Substitution
b. Preventive
c. Etiotropic
d. Pathogenetic
e. Symptomatic

68. A 60-year-old patient presents with impaired perception of high-frequency sounds. What structures of the auditory analyzer are impaired in this case, causing such changes?

a. Middle ear muscles
b. Eustachian tube
c. Tympanic membrane
d. Cochlear basilar membrane near the helicotrema
e. Cochlear basilar membrane near the oval window

69. A 60-year-old patient presents with impaired perception of high-frequency sounds. What structures of the auditory analyzer are impaired in this case, causing such changes?

a. Middle ear muscles

b. Tympanic membrane
c. Cochlear basilar membrane near the helicotrema
d. Cochlear basilar membrane near the oval window
e. Eustachian tube

70. A 66-year-old male is brought to the emergency department with central chest pain for 1 hour. He rates his pain as severe, dull in character and it is associated with profuse sweating and shortness of breath. Physical examination reveals a blood pressure of 100/70 mm Hg, pulse --- 115/min, oxygen saturation of 95% on room air. An electrocardiogram is done and shows ST elevation in leads II, III and avF which is consistent with an acute myocardial infarction. The patient is given oral aspirin, sublingual nitroglycerine and intravenous morphine. Which of the following is the most likely mechanism of action of morphine?

a. Histamine receptor antagonist
b. Adenylyl cyclase activator
c. Phosphodiesterase inhibitor
d. Opioid receptors agonist
e. Acetylcholinesterase inhibitor

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b. Phosphodiesterase inhibitor
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d. Acetylcholinesterase inhibitor
e. Adenylyl cyclase activator

72. A 67-year-old man was delivered to a cardiology department with complaints of periodical pains in his heart, dyspnea caused by even slight exertion, cyanosis, and edemas. ECG shows additional excitations of heart ventricles. Name this type of rhythm disturbance:

a. Extrasystole
b. Tachycardia
c. Flutter
d. Fibrillation
e. Bradycardia

73. A 67-year-old man was delivered to a cardiology department with complaints of periodical pains in his heart, dyspnea caused by even slight exertion, cyanosis, and edemas. ECG shows additional excitations of heart ventricles. Name this type of rhythm disturbance:

a. Flutter
b. Extrasystole
c. Bradycardia
d. Tachycardia
e. Fibrillation

74. A 70-year-old patient is brought to the emeregency department by his son because of blurry vision and dysarthria. His son says, that the father is always thirsty and has difficulty with urination. Examination reveals dry skin, cutaneous vasodilation, nonreactive mydriasis, and hyperthermia. Drug overdose is suspected. Which of the following drugs is the most likely cause of this patient's toxicity?

a. Carbachol
b. Reserpine
c. Atropine
d. Clonidine
e. Metamizole

75. A 70-year-old patient is brought to the emeregency department by his son because of blurry vision and dysarthria. His son says, that the father is always thirsty and has difficulty with urination.

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76. A baby has a delay in eruption of the first teeth. What vitamin is deficient in this baby?

a. E
b. A
c. D_{3
d. PP
e. K

77. A baby has a delay in eruption of the first teeth. What vitamin is deficient in this baby?

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b. K
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d. PP
e. A

78. 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?

a. Ectoderm
b. Endoderm and mesoderm
c. All the germ layers
d. Mesoderm
e. Endoderm

79. 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?

a. Mesoderm
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c. Endoderm
d. Endoderm and mesoderm
e. Ectoderm

80. A child presents with dry cough. What non-narcotic antitussive drug can relieve the patient's condition?

a. Althaea officinalis roots
b. Codeine phosphate
c. Potassium iodide
d. Morphine hydrochloride
e. Glaucine hydrochloride

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d. Glaucine hydrochloride
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82. A cytochrome oxidase blocker was given to a test animal, causing its instant death. What chemical can cause these changes?

a. Potassium cyanide
b. Potassium phosphate
c. Potassium oxalate
d. Potassium sulfate
e. Potassium nitrite

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d. Potassium cyanide
e. Potassium phosphate
84. A dentist used a solution of potassium permanganate as an antiseptic. This preparation has a bactericidal effect because of:
a. Potassium hydroxide
b. Atomic oxygen
c. Manganese oxide
d. Potassium
e. Potassium oxide
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d. Atomic oxygen
e. Potassium hydroxide
86. A girl presents with high fever and sore throat. Objectively, the soft palate is swollen, the tonsils are covered with gray films. The films are firmly attached and leave deep bleeding lesions when removed. What is the most likely disease in this case?
a. Necrotic tonsillitis
b. Pharyngeal diphtheria
c. Infectious mononucleosis
d. Pseudomembranous (Vincent's) \\ tonsillitis
e. Lacunar tonsillitis
87. A girl presents with high fever and sore throat. Objectively, the soft palate is swollen, the tonsils are covered with gray films. The films are firmly attached and leave deep bleeding lesions when removed. What is the most likely disease in this case?
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88. A girl provisionally diagnosed with Turner syndrome made an appointment with a genetic consultancy. What genetic method of diagnostics can confirm this diagnosis?
a. Biochemistry
b. Sex chromatin identification
c. Dermatoglyphics
d. Hybridology
e. Genealogy
89. A girl provisionally diagnosed with Turner syndrome made an appointment with a genetic consultancy. What genetic method of diagnostics can confirm this diagnosis?
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90. A glucocorticoid ointment has been prescribed to a patient for periodontitis treatment. Name this medicine:
a. Prednisolone
b. Erythromycin
c. Decamin (Dequalinium)

d. Tetracycline
e. Ampicillin

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92. A group of dental students is studying bacteria and their pathogenesis. They have identified that a substantial number of bacteria cause human diseases by producing a poisonous substance. This substance is typically a protein, that has different mechanisms of action and acts at different sites. It is secreted by anaerobic bacteria and leads to a potentially life threatening symptoms which can be prevented by administration of specific antibodies. Which of the following is the most likely substance?

a. ---
b. Enterotoxin
c. Exotoxin
d. Toxoid
e. Antitoxin

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b. Antitoxin
c. Enterotoxin
d. Exotoxin
e. ---

94. A hospitalized person has severe headache, nuchal rigidity, recurrent vomiting, and increased sensitivity to light stimuli. The patient has been diagnosed with meningitis and referred for a spinal tap. Where is the needle inserted for a spinal tap?

a. Between L3 and L4 vertebrae
b. Between Th11 and Th12 vertebrae
c. Between L5 vertebra and the base of the sacrum
d. Between L1 and L2 vertebrae
e. Between Th12 and L1 vertebrae

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c. Between L3 and L4 vertebrae
d. Between Th12 and L1 vertebrae
e. Between Th11 and Th12 vertebrae

96. A man with infertility requested medical genetic counseling. One Barr body was detected in the nuclei of most of the cells in his buccal mucosal epithelium. What is the likely cause of this pathological condition?

a. Down syndrome
b. Triple X syndrome
c. Triple Y syndrome
d. Klinefelter syndrome
e. Turner syndrome

97. A man with infertility requested medical genetic counseling. One Barr body was detected in the nuclei of most of the cells in his buccal mucosal epithelium. What is the likely cause of this pathological condition?

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d. Turner syndrome
e. Down syndrome

98. A patient being treated for viral B hepatitis developed signs of hepatic failure. What changes in the blood test that indicate a protein metabolism disorder will most likely be observed in this case?

a. Absolute hypoalbuminemia
b. Absolute hyperfibrinogenemia
c. Absolute hyperalbuminemia
d. Absolute hyperglobulinemia
e. Blood protein composition is \\ unchanged

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c. Absolute hyperalbuminemia
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100. A patient cannot lift the lowered mandible. What muscles fail to perform their function in this case?

a. Mimic muscles
b. Orbicularis oris muscle
c. Epicranius muscle
d. Masticatory muscles
e. Levator anguli oris muscle

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d. Epicranius muscle
e. Mimic muscles

102. A patient complains of an extremely runny nose and lost sense of smell. Where in the nasal cavity are located the receptors of the olfactory analyzer?

a. Superior nasal meatus
b. Middle nasal meatus
c. Common nasal meatus
d. Inferior nasal meatus
e. Choanae

103. A patient complains of an extremely runny nose and lost sense of smell. Where in the nasal cavity are located the receptors of the olfactory analyzer?

a. Choanae
b. Common nasal meatus
c. Superior nasal meatus
d. Inferior nasal meatus
e. Middle nasal meatus

104. A patient developed hypersalivation during dental manipulations. What group of medicines reduces this phenomenon?

a. Cholinergic antagonists
b. Astringents
c. Adrenergic agonists

d. Cholinergic agonists
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106. A patient diagnosed with tuberculosis developed red coloring of urine, saliva, and tear fluid after starting the treatment of this disease. Red spots appeared on the patient's underwear. What drug could have caused these phenomena?
a. Rifampicin
b. Isoniazid
c. Ciprofloxacin
d. Benzylpenicillin sodium salt
e. Iodine alcohol solution

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d. Rifampicin
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108. A patient feels pain and numbness in the gums of the upper jaw. What nerves are most likely to be damaged in this case?
a. N. alveolaris inferior
b. N. buccalis
c. N. lingualis
d. Nn. alveolaris superiores (n. maxillaris)
e. N. facialis

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c. N. buccalis
d. N. lingualis
e. N. alveolaris inferior

110. A patient has a dysfunction of the parotid salivary gland. What nerve increases its secretion?
a. N. auricularis minor
b. N. petrosus minor
c. N. petrosus profundus
d. N. petrosus major
e. N. auricularis major

111. A patient has a dysfunction of the parotid salivary gland. What nerve increases its secretion?
a. N. auricularis minor
b. N. auricularis major
c. N. petrosus minor
d. N. petrosus major
e. N. petrosus profundus

112. A patient has a long history of dental caries. The pulp of the affected tooth started to resemble a gray-black mass with a putrid odor. Microscopically, it is unstructured and contains microbes. What pathological process has developed in the dental pulp in this case?
a. Fibrous pulpitis

b. Pulp gangrene
c. Serous pulpitis
d. Granulating pulpitis
e. Purulent pulpitis

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d. Fibrous pulpitis
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114. A patient has arterial hypertension with signs of angina pectoris. The patient has been prescribed an antianginal drug that is a calcium antagonist. Name this drug.
a. Amlodipine
b. Metoprolol
c. Pentoxifylline
d. Molsidomine
e. Anaprilin (Propranolol)

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116. A patient has been hospitalized into the intensive care unit in a severe condition. It is known that he mistakenly took sodium fluoride that blocks cytochrome oxidase. What type of hypoxia has developed in the patient?
a. Tissue hypoxia
b. Hypoxic hypoxia
c. Respiratory hypoxia
d. Cardiovascular hypoxia
e. Hemic hypoxia

117. A patient has been hospitalized into the intensive care unit in a severe condition. It is known that he mistakenly took sodium fluoride that blocks cytochrome oxidase. What type of hypoxia has developed in the patient?
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118. A patient has been prescribed pyridoxal phosphate. What processes are corrected with this drug?
a. Oxidative decarboxylation of keto \\ acids
b. Protein synthesis
c. Synthesis of purine and pyrimidine \\ bases
d. Transamination and decarboxylation \\ of amino acids
e. Deaminization of amino acids

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b. Transamination and decarboxylation \\ of amino acids
c. Deaminization of amino acids
d. Protein synthesis

e. Oxidative decarboxylation of keto \\ acids

120. A patient has made an appointment with a dentist. A cavity was detected in the softened dentin of his premolar. A narrow layer of dentin remains between the carious cavity and the pulp. What is the most likely diagnosis in this case?

a. Fluorosis
b. White spot lesion
c. Median caries
d. Superficial caries
e. Deep caries

121. A patient has made an appointment with a dentist. A cavity was detected in the softened dentin of his premolar. A narrow layer of dentin remains between the carious cavity and the pulp. What is the most likely diagnosis in this case?

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d. Deep caries
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122. 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?

a. Expansive growth
b. Positive Pasteur effect
c. Anaplasia
d. Infiltrative growth
e. Increased number of mitotic cells

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124. A patient was diagnosed with a monogenic hereditary disease. Name this disease:

a. Hypertension
b. Peptic ulcer disease of the stomach
c. Poliomyelitis
d. Hymenolepiasis
e. Hemophilia

125. A patient was diagnosed with a monogenic hereditary disease. Name this disease:

a. Poliomyelitis
b. Hymenolepiasis
c. Hemophilia
d. Peptic ulcer disease of the stomach
e. Hypertension

126. 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?

a. Protein
b. Fructose
c. 17-ketosteroids
d. Creatine
e. Indican

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d. Indican
e. 17-ketosteroids

128. A patient was diagnosed with meningitis. A puncture of the subarachnoid space is necessary. This space can be located between the following structures:

a. ---
b. Arachnoid mater and pia mater
c. Periosteum and dura mater
d. Periosteum and arachnoid mater
e. Dura mater and arachnoid mater

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b. Arachnoid mater and pia mater
c. Periosteum and arachnoid mater
d. Dura mater and arachnoid mater
e. ---

130. 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?

a. Haptoglobin
b. Immunoglobulins
c. Bence-Jones protein
d. Albumins
e. Transferrin

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d. Immunoglobulins
e. Bence-Jones protein

132. A patient was diagnosed with peptic ulcer disease of the stomach and prescribed an antibacterial treatment. This treatment will be aimed against the following causative agent:

a. H. pylori
b. St. aureus
c. Cl. perfringens
d. Cl. trachomatis
e. E) coli

133. A patient was diagnosed with peptic ulcer disease of the stomach and prescribed an antibacterial treatment. This treatment will be aimed against the following causative agent:

a. Cl. perfringens
b. Cl. trachomatis
c. St. aureus
d. H. pylori
e. E) coli

134. A patient with a malignant tumor has been prescribed a narcotic analgesic for pain relief. What is the mechanism of analgesic action of such drugs?

a. Activation of D2 dopamine receptors
b. Inhibition of cholinergic receptors
c. Activation of opiate receptors
d. Inhibition of serotonergic receptors
e. Inhibition of histaminergic receptors

135. A patient with a malignant tumor has been prescribed a narcotic analgesic for pain relief. What is the mechanism of analgesic action of such drugs?

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e. Inhibition of cholinergic receptors
136. A patient with acute retention of urine has been brought to an admission room. During examination a doctor found out that the patient has urethral obturation caused by pathology of the surrounding organ. Name this organ:
a. Seminal vesicle
b. Epididymis
c. Spermatic cord
d. Prostate
e. Testicle
137. A patient with acute retention of urine has been brought to an admission room. During examination a doctor found out that the patient has urethral obturation caused by pathology of the surrounding organ. Name this organ:
a. Spermatic cord
b. Seminal vesicle
c. Testicle
d. Epididymis
e. Prostate
138. A patient with ciliary arrhythmia and a history of bronchial asthma should be prescribed an antiarrhythmic drug. What antiarrhythmic drug is contraindicated in this case?
a. Verapamil
b. ---
c. Ajmaline
d. Nifedipine
e. Anaprilin (Propranolol)
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c. ---
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e. Anaprilin (Propranolol)
140. A patient, who has overdosed on a narcotic substance, is unconscious and has hypothermia, hypotension, and persistent miosis. What aid would be most effective and ensure the patient's survival in this case?
a. Aethimizolum (Methylamide)
b. Mesaton (Phenylephrine)
c. Nitrazepam
d. Omeprazole
e. Naloxone
141. A patient, who has overdosed on a narcotic substance, is unconscious and has hypothermia, hypotension, and persistent miosis. What aid would be most effective and ensure the patient's survival in this case?
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c. Mesaton (Phenylephrine)
d. Aethimizolum (Methylamide)
e. Naloxone
142. A patient, who was taking a highly effective anti-tuberculosis drug, has developed gynecomastia at the end of the treatment course. What drug has caused this side effect?
a. Isoniazid
b. Ciprofloxacin
c. Florimycin sulfate (Viomycin sulfate)
d. Ethambutol

e. Rifampicin

143. A patient, who was taking a highly effective anti-tuberculosis drug, has developed gynecomastia at the end of the treatment course. What drug has caused this side effect?

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d. Florimycin sulfate (Viomycin sulfate)

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144. 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:

a. Etiotropic

b. Direct

c. Irreversible

d. Reflex

e. Primary

145. 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:

a. Etiotropic

b. Irreversible

c. Direct

d. Primary

e. Reflex

146. A previously healthy 8-year old boy is brought to the emergency department by his parents because of fever and progressively worsening sore throat and dysphagia. Physical examination shows pharyngeal erythema with tender left and right cervical lymphadenopathy. Contrast-enhanced computed tomography (CT) shows fluid accumulation in the retropharyngeal space. A diagnosis of retropharyngeal abscess is suspected. Which of the following fasciae is most likely involved in this process?

a. Parotid fascia

b. ---

c. Masseteric fascia

d. Buccopharyngeal fascia

e. Temporal fascia

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a. Temporal fascia

b. Buccopharyngeal fascia

c. ---

d. Masseteric fascia

e. Parotid fascia

148. A research lab is investigating the rate of differentiation of hematopoietic cells in order to better understand acute myeloid leukemia in children. A bone marrow biopsy of a 6-year-old boy shows the differentiation stage in which hemopoietic cell extrudes its nucleus. Which of the following processes is most likely assiociated with biopsy findings?

a. Granulopoiesis

b. Erythropoiesis

c. Lymphocytopoiesis

d. Thrombopoiesis

e. Monocytopoiesis

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b. Monocytopoiesis
c. Thrombopoiesis
d. Erythropoiesis
e. Granulopoiesis

150. A second deciduous molar was extracted in a 13-year-old child. What permanent tooth will erupt in its place?

a. First molar
b. Third molar
c. Second premolar
d. First premolar
e. Second molar

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b. First molar
c. Second premolar
d. Third molar
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152. 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:

a. Cellular cement
b. Reticulofibrous bone tissue
c. Dentin
d. Enamel
e. Dense connective tissue

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a. Enamel
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c. Reticulofibrous bone tissue
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e. Cellular cement

154. A skin injury with damage to the reticular layer of the dermis was received. The regeneration of this layer will occur because of the activity of certain cells. Name these cells.

a. Fibroblasts
b. Lymphoblasts
c. Macrophages
d. Tissue basophils
e. Plasma cells

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a. Fibroblasts
b. Lymphoblasts
c. Tissue basophils
d. Plasma cells
e. Macrophages

156. A woman complains of painful chewing, especilly when she moves her lower jaw backwards. What muscles are affected?

a. Lateral pterygoid muscles
b. Masseter muscles
c. Anterior bundles of the temporal \\ muscles
d. Posterior bundles of the temporal \\ muscles
e. Medial pterygoid muscles

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c. Lateral pterygoid muscles
d. Posterior bundles of the temporal \\ muscles
e. Anterior bundles of the temporal \\ muscles

158. After a facial injury, the patient has a hematoma on the cheek. What salivary gland is likely to have its outflow blocked by this hematoma?
a. Buccal
b. Labial
c. Sublingual
d. Parotid
e. Submandibular

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b. Sublingual
c. Parotid
d. Submandibular
e. Buccal

160. After a removal of the pyloric part of the stomach, a person may develop anemia. What is the cause of pathological condition development in this case?
a. Lack of intrinsic Castle factor
b. Bone marrow dysfunction
c. Impaired absorption of vitamin D
d. Impaired absorption of vitamin C
e. Impaired absorption of vitamin E

161. After a removal of the pyloric part of the stomach, a person may develop anemia. What is the cause of pathological condition development in this case?
a. Bone marrow dysfunction
b. Impaired absorption of vitamin E
c. Impaired absorption of vitamin C
d. Impaired absorption of vitamin D
e. Lack of intrinsic Castle factor

162. 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?
a. Chronic hyperplastic periostitis
b. Serous periostitis
c. Purulent periostitis
d. Ossifying periostitis
e. Chronic fibrous periostitis

163. 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?
a. Serous periostitis
b. Chronic hyperplastic periostitis
c. Purulent periostitis
d. Ossifying periostitis

e. Chronic fibrous periostitis

164. After examination, the signs of acromegaly were detected in a patient. What endocrine gland is involved in this pathological process?

a. Adenohypophysis

b. Neurohypophysis

c. Pineal gland

d. Thyroid gland

e. Adrenal glands

165. After examination, the signs of acromegaly were detected in a patient. What endocrine gland is involved in this pathological process?

a. Thyroid gland

b. Pineal gland

c. Adrenal glands

d. Neurohypophysis

e. Adenohypophysis

166. After the transfusion of the concentrated red blood cells the patient developed posttransfusion shock. What is the leading mechanism of acute renal failure in this case?

a. Glomerular filtration disorder

b. Urinary excretion disorder

c. Tubular reabsorption disorder

d. Impairment of the renal incretory \\ function

e. Tubular secretion disorder

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e. Glomerular filtration disorder

168. All of the teeth in the mouth together are referred to as the dentition. Humans have two dentitions throughout life: one during childhood, called the primary dentition, and one that will hopefully last throughout adulthood, called the permanent (secondary) dentition. The first permanent molars usually begin their eruption by/at:

a. Six to seven years of age

b. ---

c. Birth

d. Four to five years of age

e. Twelve months of age

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a. Six to seven years of age

b. Twelve months of age

c. Birth

d. ---

e. Four to five years of age

170. Among the amino acids that contain a hydroxyl group, one is of the greatest importance in the formation of the structure of collagen and the organic matrix of the tooth. What is this amino acid?

a. Homoserine

b. Threonine

c. Serine

d. Oxyproline

e. Tyrosine

171. Among the amino acids that contain a hydroxyl group, one is of the greatest importance in the

formation of the structure of collagen and the organic matrix of the tooth. What is this amino acid?
a. Threonine
b. Tyrosine
c. Homoserine
d. Serine
e. Oxyproline
172. An 11-month-old child has delayed teething, misaligned teeth, dry oral mucosa, and cracks appearing in the corners of the mouth with subsequent suppuration. This condition is likely to be associated with a deficiency of vitamin:
a. A
b. E
c. C
d. D
e. K
173. An 11-month-old child has delayed teething, misaligned teeth, dry oral mucosa, and cracks appearing in the corners of the mouth with subsequent suppuration. This condition is likely to be associated with a deficiency of vitamin:
a. E
b. C
c. D
d. K
e. A
174. An 11-year-old boy comes to the pediatric dentist with the chief complaint of <<not being able to close his left eye or smile>>. Examination reveals the disappearance of the nasolabial fold, the left eyebrow sagging, and partial inability to close the left eye. Which of the following nerves is most likely affected?
a. Glossopharyngeal nerve
b. Accessory nerve
c. Hypoglossal nerve
d. Facial nerve
e. Trigeminal nerve
175. An 11-year-old boy comes to the pediatric dentist with the chief complaint of <<not being able to close his left eye or smile>>. Examination reveals the disappearance of the nasolabial fold, the left eyebrow sagging, and partial inability to close the left eye. Which of the following nerves is most likely affected?
a. Trigeminal nerve
b. Accessory nerve
c. Facial nerve
d. Hypoglossal nerve
e. Glossopharyngeal nerve
176. 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:
a. Active site
b. Cofactor
c. Allosteric site
d. Coenzyme
e. Segment of a polypeptide chain
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a. Cofactor
b. Active site
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178. 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?

a. Osteoclasts

b. Osteocytes

c. Macrophages

d. Osteoblasts

e. Tissue basophils

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180. An extreme undernourishment, known as starvation, can be caused by insufficient protein intake. As an example, Kwashiorkor is a form of malnutrition caused by a lack of protein in the diet where decreased plasma protein concentration leads to increased filtration of fluid into interstitium. Which of the following proteins is the most likely cause of decreased oncotic plasma pressure in a starving patient?

a. β-globulins

b. γ-globulins

c. Albumin

d. Fibrinogen

e. α-globulins

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c. α-globulins

d. Albumin

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182. An ophthalmologist suspects blennorrhea (gonococcal conjunctivitis) in a child with signs of suppurative keratoconjunctivitis. What laboratory diagnostics should be conducted to confirm the diagnosis?

a. Biological analysis and \\ phagodiagnostics

b. Serum diagnostics and allergy test

c. Biological analysis and allergy test

d. Microscopy and serum diagnostics

e. Microscopy and bacteriological \\ analysis

183. An ophthalmologist suspects blennorrhea (gonococcal conjunctivitis) in a child with signs of suppurative keratoconjunctivitis. What laboratory diagnostics should be conducted to confirm the diagnosis?

a. Serum diagnostics and allergy test

b. Biological analysis and \\ phagodiagnostics

c. Microscopy and bacteriological \\ analysis

d. Microscopy and serum diagnostics

e. Biological analysis and allergy test

184. 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?

a. Lip

b. Hard palate

c. Tongue

d. Cheek

e. Soft palate

185. 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?

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b. Tongue
c. Hard palate
d. Cheek
e. Soft palate

186. At autopsy, section of the right ovary shows a round lesion 2.5 cm in diameter with a clear serous fluid, surrounded by a smooth glistening membrane. Which of the following macroscopic lesions best represents the autopsy findings?

a. Nodule
b. Cyst
c. Infiltrate
d. Nodule with central necrosis
e. Ulcer

187. At autopsy, section of the right ovary shows a round lesion 2.5 cm in diameter with a clear serous fluid, surrounded by a smooth glistening membrane. Which of the following macroscopic lesions best represents the autopsy findings?

a. Ulcer
b. Nodule
c. Cyst
d. Nodule with central necrosis
e. Infiltrate

188. Autopsy of the body a 58-year-old man, who had been suffering from rheumatic heart disease and died of cardiopulmonary decompensation, revealed gray diffuse film- and fiber-shaped coating in his pericardium. What type of inflammation is characteristic of this pericarditis?

a. Croupous fibrinous
b. Hemorrhagic
c. Suppurative
d. Serous
e. Diphtheritic fibrinous

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a. Diphtheritic fibrinous
b. Hemorrhagic
c. Serous
d. Croupous fibrinous
e. Suppurative

190. Autopsy of the body of a 69-year-old woman, who was overeating and died of an acute myocardial infarction, detected numerous whitish, dense formations in the intima of the coronary arteries. The formations protrude into the vascular lumina, sharply narrowing them. What stage of atherosclerosis can be characterized by these changes?

a. Liposclerosis
b. Atherocalcinosis
c. Atheromatosis
d. A stage of atheromatous ulcer formation
e. Lipoidosis

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a. Lipoidosis
b. Atherocalcinosis

c. A stage of atheromatous ulcer formation
d. Liposclerosis
e. Atheromatosis
192. Bacteriology of the stools of a person, who works as a chef at a restaurant and has no clinical manifestations of the disease, resulted in growth of small colonies with a metallic sheen on a bismuth sulfite agar. What microorganisms are likely in this case?
a. Escherichia
b. Staphylococci
c. Shigella
d. Streptococci
e. Salmonella
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a. Staphylococci
b. Salmonella
c. Escherichia
d. Streptococci
e. Shigella
194. 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.
a. Isoleucine
b. Serine
c. Histidine
d. Methionine
e. Phenylalanine
195. 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.
a. Phenylalanine
b. Methionine
c. Isoleucine
d. Histidine
e. Serine
196. Blood testing of a 35-year-old patient shows the following: Hb --- 58 g/L, erythrocytes --- 1.3·10^12/L, color index --- 1.3, leukocytes --- 2.8·10^9/L, platelets --- 1.1·10^9/L, reticulocytes --- 2%, ESR --- 35 mm/hour. Polysegmented neutrophils, Jolly bodies, Cabot rings, and megalocytes can be detected. What type of anemia is it?
a. Hypoplastic anemia
b. Posthemorrhagic anemia
c. Hemolytic anemia
d. B_12 and folate deficiency anemia
e. Iron deficiency anemia
197. Blood testing of a 35-year-old patient shows the following: Hb --- 58 g/L, erythrocytes --- 1.3·10^12/L, color index --- 1.3, leukocytes --- 2.8·10^9/L, platelets --- 1.1·10^9/L, reticulocytes --- 2%, ESR --- 35 mm/hour. Polysegmented neutrophils, Jolly bodies, Cabot rings, and megalocytes can be detected. What type of anemia is it?
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e. B_12 and folate deficiency anemia
198. Calcification of dental tissues is significantly influenced by osteocalcin protein which has an ability to bind calcium ions due to the presence of the following modified amino acid residues in the

polypeptide chain:
a. Alanine
b. Carboxy aspargine
c. δ-aminopropionic
d. γ-carbon glutamine
e. γ-aminobutyric
199. Calcification of dental tissues is significantly influenced by osteocalcin protein which has an ability to bind calcium ions due to the presence of the following modified amino acid residues in the polypeptide chain:
a. Carboxy aspargine
b. δ-aminopropionic
c. Alanine
d. γ-carbon glutamine
e. γ-aminobutyric
200. Calcification of the intercellular substance of bone tissue is accompanied by the deposition of hydroxyapatite crystals along the collagen fibers. This process requires the presence of alkaline phosphatase in the intercellular matrix. Which of the following cells most likely produces this enzyme?
a. Osteoclast
b. Osteoblast
c. Chondrocyte
d. Chondroblast
e. Osteocyte
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c. Osteoblast
d. Chondroblast
e. Osteocyte
202. Cells of sensory spinal ganglions are a part of reflex arches. What type of neurons are these cells?
a. Pseudounipolar
b. ---
c. Multipolar
d. Unipolar
e. Bipolar
203. Cells of sensory spinal ganglions are a part of reflex arches. What type of neurons are these cells?
a. Unipolar
b. Bipolar
c. Multipolar
d. ---
e. Pseudounipolar
204. Cytogenetic analysis allowed to determine the patient's karyotype --- 47, XY, +21/46, XY. Name this condition:
a. Mosaicism
b. Deletion
c. Genocopy
d. Translocation
e. Phenocopy
205. Cytogenetic analysis allowed to determine the patient's karyotype --- 47, XY, +21/46, XY. Name this condition:
a. Genocopy
b. Mosaicism

c. Phenocopy
d. Deletion
e. Translocation

206. Dentists have high risk of contracting viral hepatitis type B in the course of their duties and therefore are subject to mandatory vaccination. What vaccine is used in such cases?

a. Recombinant vaccine
b. Live vaccine
c. Inactivated vaccine
d. Anatoxin
e. Chemical vaccine

207. Dentists have high risk of contracting viral hepatitis type B in the course of their duties and therefore are subject to mandatory vaccination. What vaccine is used in such cases?

a. Live vaccine
b. Chemical vaccine
c. Inactivated vaccine
d. Anatoxin
e. Recombinant vaccine

208. Due to the presence of a malignant tumor on the tongue, the patient has been referred for its surgical removal. Where is it easy to find the lingual artery and ligate it?

a. Omoclavicular triangle
b. Carotid triangle
c. Pirogov triangle
d. Omotracheal triangle
e. Omotrapezoid triangle

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b. Omoclavicular triangle
c. Omotrapezoid triangle
d. Pirogov triangle
e. Carotid triangle

210. During a fire, a person developed carbon monoxide poisoning. What changes occurred in the patient's blood as a result?

a. Formation of carbhemoglobin
b. Development of acidosis
c. Formation of carboxyhenoglobin
d. Formation of methemoglobin
e. Formation of reduced hemoglobin

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b. Formation of methemoglobin
c. Development of acidosis
d. Formation of carbhemoglobin
e. Formation of carboxyhenoglobin

212. During a selection for revaccination with the BCG vaccine, a schoolboy has undergone the Mantoux test that turned out to be negative. What does this test result indicate?

a. Absence of cellular immunity to tuberculosis
b. Presence of humoral immunity to tuberculosis
c. Presence of cellular immunity to tuberculosis
d. Absence of antitoxic immunity to tuberculosis
e. Absence of humoral immunity to tuberculosis

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d. Presence of humoral immunity to tuberculosis
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214. 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:
a. Left transverse cervical nerve
b. Right transverse cervical nerve
c. Left phrenic nerve
d. Supraclavicular nerve
e. Right phrenic nerve

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b. Right phrenic nerve
c. Right transverse cervical nerve
d. Left transverse cervical nerve
e. Left phrenic nerve

216. During an accident on a nuclear submarine, a conscript soldier received a radiation dose of 5 Gy. He complains of headache, nausea, and dizziness. What changes in the leukocyte count can be expected after such irradiation?
a. Neutrophilic leukocytosis
b. Lymphocytosis
c. Leukopenia
d. Anemia
e. Agranulocytosis

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c. Neutrophilic leukocytosis
d. Lymphocytosis
e. Anemia

218. During examination of the patient's oral cavity, a dentist noticed deformation of the teeth and a crescent indentation on the upper right inscisor. The teeth are undersized, barrel-shaped --- tooth cervix is wider than its edge. The patient uses a hearing aid, suffers from visual impairment. What type of syphilis affects teeth in such a way?
a. Neurosyphilis
b. Late congenital
c. Secondary
d. Primary
e. Early congenital

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a. Primary
b. Late congenital
c. Early congenital
d. Neurosyphilis
e. Secondary

220. 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:

a. Hypocone
b. Metacone
c. Paracone
d. Protocone
e. Mesocone

221. 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:
a. Mesocone
b. Paracone
c. Metacone
d. Protocone
e. Hypocone

222. 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?
a. Calcium hydroxide
b. Calmecin
c. Calcium glycerophosphate
d. Calcium chloride
e. Calcium gluconate

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b. Calcium gluconate
c. Calcium chloride
d. Calcium glycerophosphate
e. Calcium hydroxide

224. 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?
a. ---
b. Synthesis and energy accumulation in the form of ATP
c. Synthesis of carbohydrates
d. Intracellular digestion of macromolecules
e. Formation of mitotic spindle

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e. Synthesis of carbohydrates

226. 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. Methemoglobin production
b. Carbhemoglobin production
c. Production of reduced hemoglobin
d. Carboxyhemoglobin production
e. A change in blood pH

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b. A change in blood pH
c. Carbhemoglobin production

d. Carboxyhemoglobin production
e. Methemoglobin production
228. During physical and emotional strain, a person is less sensitive to pain. This phenomenon occurs due to activation of the:
a. Antinociceptive system
b. Nociceptive system
c. Adrenal function
d. Thyroid function
e. Parasympathetic system
229. During physical and emotional strain, a person is less sensitive to pain. This phenomenon occurs due to activation of the:
a. Thyroid function
b. Adrenal function
c. Nociceptive system
d. Parasympathetic system
e. Antinociceptive system
230. During the examination of a pregnant woman, a dentist detected 3 round formations on her oral mucosa. The formations appeared 3 days ago. They have a white-gray surface with a red rim and are up to 1 cm in diameter. What is the diagnosis in this case?
a. Aphthous stomatitis
b. Catarrhal stomatitis
c. Leukoplakia
d. Gangrenous stomatitis
e. Necrotizing ulcerative stomatitis
231. During the examination of a pregnant woman, a dentist detected 3 round formations on her oral mucosa. The formations appeared 3 days ago. They have a white-gray surface with a red rim and are up to 1 cm in diameter. What is the diagnosis in this case?
a. Catarrhal stomatitis
b. Aphthous stomatitis
c. Leukoplakia
d. Necrotizing ulcerative stomatitis
e. Gangrenous stomatitis
232. 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?
a. Cystogranuloma
b. Granulating periodontitis
c. Simple granuloma
d. Eosinophilic granuloma
e. Epithelial granuloma
233. 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?
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c. Cystogranuloma
d. Eosinophilic granuloma
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234. Examination of a 40-year-old woman detected increased basal metabolism. What hormone levels are excessive in this woman, causing her pathological condition?
a. Thyrocalcitonin
b. Aldosterone
c. Triiodothyronine

d. Somatostatin
e. Glucagon

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

236. Examination of an oral cavity shows puffy gums, pus between teeth and gums, contact bleeding. The dentist suspects gum infection that damages the soft tissue and destroys the bone that supports the teeth. This pathology can cause teeth to loosen or lead to tooth loss. Which of the following is the most likely diagnosis?
a. ---
b. Periodontitis
c. Acute sialadenitis
d. Xerostomia
e. Galvanosis

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a. Xerostomia
b. Periodontitis
c. Galvanosis
d. ---
e. Acute sialadenitis

238. Examination of the oral cavity shows marked edema and hyperemia of the gums, supragingival and subgingival calculus, and formation of pocket-like cavities filled with structureless masses and food debris in the area of the dentogingival junction. These pockets produce purulent discharge, when pressed. X-ray shows resorption of the bone tissue in the tooth sockets. What is the diagnosis in this case?
a. Acute purulent periostitis
b. Fluorosis
c. Periodontosis
d. Periodontitis
e. Hypertrophic gingivitis

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a. Acute purulent periostitis
b. Periodontosis
c. Hypertrophic gingivitis
d. Fluorosis
e. Periodontitis

240. Experimental studies of membrane ionic currents in the dynamics of action potential development have shown that the ionic current that causes the repolarization phase can be classified as:
a. Active sodium current
b. Active chlorine current
c. Passive sodium current
d. Passive potassium current
e. Active potassium current

241. Experimental studies of membrane ionic currents in the dynamics of action potential development have shown that the ionic current that causes the repolarization phase can be classified as:

a. Passive sodium current
b. Active chlorine current
c. Active potassium current
d. Active sodium current
e. Passive potassium current

242. Filopodia of megakaryocytes pass through the pores of the sinusoidal capillaries of the red bone marrow into the lumen of blood vessels, where they are fragmented into individual laminae. What blood corpuscles are formed this way?

a. Monocytes
b. Reticulocytes
c. Platelets
d. Erythrocytes
e. Lymphocytes

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a. Reticulocytes
b. Erythrocytes
c. Monocytes
d. Lymphocytes
e. Platelets

244. Fluorination of teeth is one of the major procedures which is used for enamel strengthening. Due to fluoride ions and fluoridation of the enamel, the teeth get protection from acidic environment and therefore dental caries is prevented. Which of the following is the most likely mechanism of fluorine's anticaries effect?

a. Fluorapatite synthesis
b. Chlorapatite synthesis
c. Teeth mineralization
d. Teeth demineralization
e. Hydroxyapatite synthesis

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a. Chlorapatite synthesis
b. Teeth mineralization
c. Fluorapatite synthesis
d. Teeth demineralization
e. Hydroxyapatite synthesis

246. For caries prevention, dentists recommend limiting the intake of simple carbohydrates. What is the role of a cariogenic diet in the pathogenesis of defects of hard dental tissues?

a. Disorders of calcium and phosphorus metabolism
b. Activation of remineralization process
c. Formation of chelating substances
d. Saturation of dental enamel with fluorine
e. Decrease of pH in the oral cavity

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a. Formation of chelating substances
b. Activation of remineralization process
c. Disorders of calcium and phosphorus metabolism
d. Saturation of dental enamel with fluorine

e. Decrease of pH in the oral cavity

248. For early detection of a pregnancy, a urinalysis is performed. What hormone is likely to indicate pregnancy, if it is present in the woman's urine?

a. Chorionic gonadotropin

b. Testosterone

c. Estriol

d. Aldosterone

e. Progesterone

249. For early detection of a pregnancy, a urinalysis is performed. What hormone is likely to indicate pregnancy, if it is present in the woman's urine?

a. Testosterone

b. Progesterone

c. Estriol

d. Chorionic gonadotropin

e. Aldosterone

250. 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 is the most likely structure?

a. Cheek

b. Soft palate

c. Tongue

d. Lip

e. Hard palate

251. 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 is the most likely structure?

a. Lip

b. Tongue

c. Hard palate

d. Cheek

e. Soft palate

252. Histologic examination of an eye specimen shows multilayer structure. The outermost layer is represented by special pigment epithelium, which is composed of cuboidal melanin-containing cells that absorb light. The photoreceptor layer contains photosensitive outer segments of rods and cones. Which of the following eye structures is mentioned?

a. Ciliary body

b. Choroid

c. Sclera

d. Retina

e. Iris

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a. Iris

b. Ciliary body

c. Retina

d. Sclera

e. Choroid

254. Histological microslide shows cells that form isogenic groups. The intercellular substance contains glycoproteins, proteoglycans, and collagen fibers. What tissue is it?

a. Bone tissue
b. White adipose tissue
c. Mucous tissue
d. Cartilaginous tissue
e. Brown adipose tissue

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

256. Histology of the diaphysis of a tubular bone shows basophilic cells with developed organelles of synthesis located on its surface under a layer of fibers. These cells take part in regeneration of bone tissue. In what layer of the diaphysis are they located?
a. Bone proper
b. Layer of external general lamellae
c. Layer of internal general lamellae
d. Layer of osteons
e. Periosteum

257. Histology of the diaphysis of a tubular bone shows basophilic cells with developed organelles of synthesis located on its surface under a layer of fibers. These cells take part in regeneration of bone tissue. In what layer of the diaphysis are they located?
a. Layer of external general lamellae
b. Layer of internal general lamellae
c. Periosteum
d. Layer of osteons
e. Bone proper

258. Hyposalivation, observed in sialolithiasis, and both acute and chronic inflammations of the salivary glands, causes the development of:
a. Caries
b. Pulpitis
c. Fluorosis
d. Gingivitis
e. Stomatitis

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a. Pulpitis
b. Caries
c. Gingivitis
d. Stomatitis
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260. In an experiment, an excitable cell was placed into a saline solution without sodium ions. How will it change the development of action potential in the cell?
a. Duration of the action potential decreases
b. Amplitude of the action potential decreases
c. Action potential does not develop
d. Duration of the action potential increases
e. Amplitude of the action potential increases

261. In an experiment, an excitable cell was placed into a saline solution without sodium ions. How will it change the development of action potential in the cell?
a. Duration of the action potential increases
b. Action potential does not develop
c. Duration of the action potential decreases
d. Amplitude of the action potential decreases

e. Amplitude of the action potential increases

262. In histogenesis of bone tissue, two ways of its development are possible. What stages are not characteristic of membranous osteogenesis?

a. Formation of osteogenic buds within mesenchyme

b. Formation of epiphyseal centers of ossification

c. Osteoid stage

d. Replacement of reticulofibrous bone tissue with lamellar bone tissue

e. Formation of reticulofibrous bone

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b. Formation of epiphyseal centers of ossification

c. Replacement of reticulofibrous bone tissue with lamellar bone tissue

d. Formation of reticulofibrous bone

e. Osteoid stage

264. In microanatomy of some organs, there is a sheet-like structure, which underlies virtually all epithelia. It consists of basal lamina (made of type IV collagen, glycoproteins, and proteoglycans) and reticular lamina. Under the microscope, you can see it as a pink line under the epithelial cells. Which of the following is described above?

a. Endoplasmic reticulum

b. Basement membrane

c. ---

d. Nucleus

e. Plasma membrane

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a. Nucleus

b. Plasma membrane

c. ---

d. Endoplasmic reticulum

e. Basement membrane

266. In the experiment an investigator reveals that glucose is actively taken up by cells (except brain cells). Moreover, gluconeogenesis in liver is stimulated and glycogen synthesis in liver and muscles is increased. Which of the following hormones is most likely responsible for these changes?

a. Glucagon

b. Somatostatin

c. Triiodothyronine (T3)

d. Aldosterone

e. Insulin

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d. Aldosterone

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268. In the peripheral zone of the pulp, the cell activity is temporarily inhibited for certain reasons. What dental tissue is at risk of developing a deficiency of its physiological regeneration in this case?

a. Cellular cementum

b. Enamel

c. Acellular cementum

d. Pulp

e. Dentin

269. In the peripheral zone of the pulp, the cell activity is temporarily inhibited for certain reasons. What dental tissue is at risk of developing a deficiency of its physiological regeneration in this case?

a. Enamel

b. Dentin

c. Acellular cementum

d. Cellular cementum

e. Pulp

270. In the uterine cavity an embryo was found that was not attached to the endometrium. What stage of embryonal development is it?

a. Blastocyst

b. Mulberry body

c. Zygote

d. Neurula

e. Gastrula

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b. Gastrula

c. Mulberry body

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272. 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?

a. E

b. K

c. B_2

d. D

e. A

273. 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?

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e. A

274. Microscopic examination of the leftovers of the canned meat eaten by a patient with severe food toxicoinfection detected the following: gram-positive bacilli with subterminal staining defect and changed configuration, generally resembling a tennis racket. What causative agent was detected?

a. C) botulinum

b. S. aureus

c. S. enteritidis

d. P. vulgaris

e. E) coli

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b. S. aureus

c. E) coli

d. S. enteritidis

e. C) botulinum

276. Microscopy of a fecal smear detected cysts with 4 nuclei. Which protozoan parasite do they belong to?

a. Giardia

b. Balantidium
c. Trichomonas
d. Entamoeba histolytica
e. Toxoplasma
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278. Microscopy of dental plaque revealed unicellular organisms. Their cytoplasm had two distinct layers, barely visible core, wide pseudopodia. The patient is most likely to have:
a. Entamoeba coli
b. Entamoeba gingivalis
c. Entamoeba histolytica
d. Lamblia
e. Trichomonas tenax
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b. Lamblia
c. Entamoeba gingivalis
d. Entamoeba histolytica
e. Entamoeba coli
280. Name the change in the nucleotide sequence of a gene that is associated with the rotation of a certain DNA segment by 180°.
a. Deletion
b. Duplication
c. Translocation
d. Inversion
e. Repair
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a. Duplication
b. Deletion
c. Inversion
d. Repair
e. Translocation
282. 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.
a. Regulator gene
b. Operon
c. Operator
d. Terminator
e. Promoter
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b. Operon
c. Promoter
d. Operator
e. Regulator gene
284. Name the specific phase of action potential, characteristic of typical cardiomyocytes:
a. Slow repolarization (plateau)

b. Slow diastolic repolarization
c. Systolic repolarization
d. Rapid systolic depolarization
e. Rapid diastolic depolarization

285. Name the specific phase of action potential, characteristic of typical cardiomyocytes:
a. Rapid diastolic depolarization
b. Systolic repolarization
c. Slow diastolic repolarization
d. Slow repolarization (plateau)
e. Rapid systolic depolarization

286. Persistent and heavy proteinuria (albuminuria) associated with nephrotic syndrome leads to hypoalbuminemia, which changes plasma pressure resulting in severe generalized edema. According to the description which of the following circumstances tends to cause nephrotic edema?
a. Decreased venous pressure
b. Increased tissue hydrostatic pressure
c. Decreased plasma oncotic pressure
d. Increased plasma oncotic pressure
e. ---

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c. Decreased plasma oncotic pressure
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e. ---

288. Premature babies often develop respiratory distress syndrome. This pathology is caused by the deficiency of a certain component of the blood–air barrier. Name this component:
a. Surfactant
b. Alveolocytes
c. Alveolar basement membrane
d. Endothelial basement membrane
e. Capillary endothelium

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a. Surfactant
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290. Preventive examination of a 9-year-old girl has revealed one matte white spot (chalk-like and lacking its natural luster) on the enamel in the cervical region on the vestibular surface of her tooth 21. The girl has no subjective complaints. What is the most likely diagnosis in this case?
a. Superficial caries
b. Dental erosion
c. Initial caries
d. Fluorosis
e. Enamel hypoplasia

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292. Purulent exudate accumulates in the abdominal cavity of a patient with peritonitis. The exudate contains a large amount of neutrophils. What is the main function of neutrophil granulocytes in the inflammation focus?

a. Regulation of local blood circulation
b. Degranulation
c. Secretion of prostaglandins
d. Phagocytosis
e. Release of histamine

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294. Replication is one of the reactions of matrix synthesis. What new molecule is formed from a DNA molecule in the process of replication?

a. Pro-mRNA
b. rRNA
c. mRNA
d. DNA
e. tRNA

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d. DNA
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296. 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?

a. Epithelium of the renal tubules
b. Epithelium of the small intestine
c. Outermost layer of epidermis
d. Urinary bladder
e. Secretory cells of the pancreas

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b. Secretory cells of the pancreas
c. Urinary bladder
d. Epithelium of the renal tubules
e. Outermost layer of epidermis

298. Salivary α-amylase catalyzes the hydrolysis of α-1,4-glycosidic bonds of starch. What ions function as its activators?

a. Sodium ions
b. Potassium ions
c. Zinc ions
d. Copper ions
e. Lead ions

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d. Potassium ions
e. Sodium ions
300. Serological diagnostics of influenza requires the measurement of an increase in the titer of antibodies to the pathogen in the patient's blood serum. How many times should the titer of antibodies in the paired serum samples increase for the result to be considered credible?
a. ---
b. By half
c. 4 times or more
d. 3 times
e. 2 times
301. Serological diagnostics of influenza requires the measurement of an increase in the titer of antibodies to the pathogen in the patient's blood serum. How many times should the titer of antibodies in the paired serum samples increase for the result to be considered credible?
a. 3 times
b. By half
c. 4 times or more
d. ---
e. 2 times
302. Some diseases of the small intestine are associated with dysfunction of exocrinocytes with acidophilic granules (Paneth cells). Where are these cells located?
a. At the bottom of the intestinal crypts
b. In the apical parts of the intestinal crypts
c. At the crypt-villus junction
d. On the lateral surfaces of the intestinal villi
e. In the apical parts of the intestinal villi
303. Some diseases of the small intestine are associated with dysfunction of exocrinocytes with acidophilic granules (Paneth cells). Where are these cells located?
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b. In the apical parts of the intestinal villi
c. On the lateral surfaces of the intestinal villi
d. At the bottom of the intestinal crypts
e. In the apical parts of the intestinal crypts
304. The bile, secreted in the duodenum, contains bile acids and participates in emulsification and digestion of lipids. What acid is a component of bile?
a. Cholic acid
b. Oleic acid
c. Myristic acid
d. Linoleic acid
e. Arachidonic acid
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d. Cholic acid
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306. The dentist should inject a local anesthetic to reduce pain sensation in the maxillary molars and adjacent facial soft tissue and gingiva. He inserts the needle through oral mucosa at the height of the maxillary vestibular fornix just posterior to the maxillary tuberosity. The needle is directed medially and superiorly toward the alveolar canals. Which of the following nerves is most likely to be blocked?
a. Posterior superior alveolar nerve

b. Buccal nerve
c. Inferior alveolar nerve
d. Nasopalatine nerve
e. ---

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e. ---

308. The liquidator of the consequences of the accident at the Chornobyl nuclear power plant received an ionizing radiation dose of 6 Gray. What changes in the leukocyte formula can be expected in this patient in 10 days?

a. Eosinophilia
b. Leukocytosis with lymphocytopenia
c. Basophilia
d. Agranulocytosis
e. Lymphocytosis

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c. Lymphocytosis
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310. 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?

a. Clinical genealogy
b. Cytogenetics
c. Dermatoglyphics
d. Immunogenetics
e. Biochemistry

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312. The patient's ability to perceive a bitter taste is disturbed. What lingual papillae are affected in this case?

a. Papillae filiformes
b. Papillae foliatae
c. Papillae fungiformes
d. Papillae vallatae
e. Papillae conicae

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314. The patient's blood has a C-reactive protein that chemically can be classified as a glycoprotein. What pathology does it indicate?
a. Anemia
b. Porphyria
c. Leucopenia
d. Thrombocytopenia
e. Rheumatism
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c. Anemia
d. Rheumatism
e. Thrombocytopenia
316. The patient's blood levels of calcium ions sharply dropped. It will result in increased secretion of a certain hormone. Name this hormone.
a. Parathyroid hormone
b. Vasopressin
c. Thyrocalcitonin
d. Somatotropin
e. Aldosterone
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318. The patient's leukogram is as follows: leukocytes --- $14 · 10^{9$/L; myeloblasts --- 71%; promyelocytes, myelocytes, and metamyelocytes --- 0%; band neutrophils --- 6%, segmented neutrophils --- 13%; lymphocytes --- 7%, monocytes --- 3%. What is the patient's blood pathology?
a. Chronic lymphocytic leukemia
b. Neutrophilic leukocytosis
c. Lymphoblastic leukemia
d. Myeloblastic leukemia
e. Chronic myeloid leukemia
319. The patient's leukogram is as follows: leukocytes --- $14 · 10^{9$/L; myeloblasts --- 71%; promyelocytes, myelocytes, and metamyelocytes --- 0%; band neutrophils --- 6%, segmented neutrophils --- 13%; lymphocytes --- 7%, monocytes --- 3%. What is the patient's blood pathology?
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c. Myeloblastic leukemia
d. Chronic myeloid leukemia
e. Chronic lymphocytic leukemia
320. The prisoner, who went on a hunger strike, developed edemas. What is the mechanism of edema development in this case?
a. Decreased hydrostatic tissue pressure
b. Increased oncotic tissue pressure
c. Increased hydrostatic venous pressure
d. Reduction in circulating blood volume
e. Decreased oncotic blood pressure

321. The prisoner, who went on a hunger strike, developed edemas. What is the mechanism of edema development in this case?

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b. Decreased oncotic blood pressure

c. Increased oncotic tissue pressure

d. Decreased hydrostatic tissue pressure

e. Reduction in circulating blood volume

322. The process of aging in humans is associated with decreased synthesis and secretion of pancreatic juice and its lower trypsin content. It results in disturbed breakdown of:

a. Proteins

b. Polysaccharides

c. Nucleic acids

d. Phospholipids

e. Lipids

323. The process of aging in humans is associated with decreased synthesis and secretion of pancreatic juice and its lower trypsin content. It results in disturbed breakdown of:

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b. Nucleic acids

c. Lipids

d. Phospholipids

e. Proteins

324. The tonsils of a 28-year-old patient are significantly enlarged, plethoric, and painful. On their surface, there are dense dirty-gray films that spread to the hard palate and are tightly attached to the underlying tissues. Attempts to remove the films provoke bleeding. What pathological process causes these morphological changes?

a. Croupous exudative inflammation

b. Diphtheritic exudative inflammation

c. Hemorrhagic exudative inflammation

d. Catarrhal exudative inflammation

e. Purulent exudative inflammation

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a. Croupous exudative inflammation

b. Hemorrhagic exudative inflammation

c. Catarrhal exudative inflammation

d. Purulent exudative inflammation

e. Diphtheritic exudative inflammation

326. There is a 7-year-old child with complains of cough, lacrimation, rhinitis, skin rash, photophobia and three-day-long fever as high as 38°C) Physical examination has revealed the following: conjunctivitis; bright red maculopapular rash covering the skin of face, neck and torso; hyperemic pharynx; serous purulent secretions from the nose; dry rales in the lungs. What is the most probable diagnosis?

a. Measles

b. Scarlet fever

c. Rubella

d. Adenovirus infection

e. Chicken pox

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a. Scarlet fever

b. Adenovirus infection
c. Chicken pox
d. Rubella
e. Measles

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

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330. Treatment of a patient with hereditary form of immunodeficiency involved gene therapy: the enzyme gene was introduced into the cells of the patient by means of a retrovirus. What property of the genetic code allows to use retroviruses as vectors of functional genes?
a. Universality
b. Specificity
c. Continuity
d. Collinearity
e. Redundancy

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a. Collinearity
b. Specificity
c. Continuity
d. Redundancy
e. Universality

332. Ulcer disease of the duodenum has been detected in a 38-year-old man. A treatment was prescribed, after which the patient considered himself to be healthy. However, half a year later the patient developed pain in the epigastrium, heartburn, and insomnia. The patient's condition can be estimated as a:
a. Relapse
b. Latent period
c. ---
d. Development of chronic disease
e. Remission

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a. ---
b. Relapse
c. Remission
d. Development of chronic disease
e. Latent period

334. What factor results in maximal dilation of the gemomicrocirculatory pahtway vessels and their increased permeability?
a. Noradrenaline

b. Histamine
c. Endothelin
d. Serotonin
e. Vasopressin

335. What factor results in maximal dilation of the gemomicrocirculatory pahtway vessels and their increased permeability?
a. Vasopressin
b. Histamine
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d. Endothelin
e. Serotonin

336. What infectious-allergic disease is associated with the development of bilateral diffuse or focal non-purulent inflammation of the glomerular apparatus of the kidneys with characteristic renal and extrarenal symptoms?
a. Glomerulonephritis
b. Nephrosclerosis
c. Polycystic kidney disease
d. Pyelonephritis
e. Nephrolithiasis

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d. Glomerulonephritis
e. Pyelonephritis

338. What is caused by an absolute deficiency of vitamin K in the body?
a. Disturbed platelet adhesion
b. ---
c. Hypercoagulation
d. Hypocoagulation
e. Intestinal dysbiosis

339. What is caused by an absolute deficiency of vitamin K in the body?
a. Intestinal dysbiosis
b. ---
c. Hypocoagulation
d. Disturbed platelet adhesion
e. Hypercoagulation

340. What is the secondary mediator in the mechanism of action of adrenaline?
a. Cyclic thymidine monophosphate
b. Cyclic cytidine monophosphate
c. Cyclic guanosine monophosphate
d. Cyclic uridine monophosphate
e. Cyclic adenosine monophosphate

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a. Cyclic thymidine monophosphate
b. Cyclic uridine monophosphate
c. Cyclic guanosine monophosphate
d. Cyclic adenosine monophosphate
e. Cyclic cytidine monophosphate

342. What mineral substance is present in the dental hard tissues in the largest amount?
a. Calcium phosphate [Ca_10(PO_4)_6]
b. Fluorapatite [Ca_10(PO_4)_6F_2]
c. Hydroxyapatite [Ca_10(PO_4)_6(OH)_2]

d. Carbonate apatite [Ca_10(PO_4)_5CO_3]
e. Chlorapatite [Ca_10(PO_4)_6Cl_2]

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d. Calcium phosphate [Ca_10(PO_4)_6]
e. Chlorapatite [Ca_10(PO_4)_6Cl_2]

344. When a newborn baby feeds, milk gets into the baby's nasal cavity. What is the most likely cause of this pathological condition?
a. Cleft lip
b. Right-sided nasal septum deviation
c. Cleft palate
d. Left-sided nasal septum deviation
e. Basilar skull fracture

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c. Cleft palate
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e. Basilar skull fracture

346. When examining the patient's oral cavity, the dentist noticed a significant tremor of the tongue. Exophthalmos is observed in the patient, as well. The doctor advised the patient to consult an endocrinologist. During the examination, the diagnosis of Basedow's disease was made. This condition is mainly caused by the hyperfunction of certain cells. Name these cells.
a. Thyrocytes
b. Endocrinocytes of the zona glomerulosa of the adrenal cortex
c. Parathyrocytes
d. Endocrinocytes of the zona fasciculata of the adrenal cortex
e. Parafollicular cells

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a. Endocrinocytes of the zona fasciculata of the adrenal cortex
b. Parathyrocytes
c. Endocrinocytes of the zona glomerulosa of the adrenal cortex
d. Parafollicular cells
e. Thyrocytes

348. When extracting a tooth, the dentist destroys the bonds between the cementum of the dental root and the tooth socket. What structure is it?
a. Dentinum
b. Periodontium
c. Pulpa dentis
d. Gingiva
e. Cementum

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a. Gingiva
b. Periodontium
c. Cementum
d. Dentinum
e. Pulpa dentis

350. When performing trepanation of the mastoid process of the temporal bone due to purulent otitis,

the dental surgeon risks damaging the facial (fallopian) canal and causing bleeding as a result. What artery passes along with the facial nerve in the canal?

a. A auricularis posterior
b. A occipitalis
c. A facialis
d. A stylomastoidea
e. A meningea media

351. When performing trepanation of the mastoid process of the temporal bone due to purulent otitis, the dental surgeon risks damaging the facial (fallopian) canal and causing bleeding as a result. What artery passes along with the facial nerve in the canal?

a. A occipitalis
b. A meningea media
c. A auricularis posterior
d. A stylomastoidea
e. A facialis