1. CH_3-CH_2-OH and CH_3-O-CH_3 are a pair of compounds that can be classified as isomers of the following type:

a. Carbon chain isomers
b. Geometric (cis-trans) isomers
c. Tautomers
d. Mirror (optical) isomers
e. Functional group isomers

2. CH_3-CH_2-OH and CH_3-O-CH_3 are a pair of compounds that can be classified as isomers of the following type:

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c. Carbon chain isomers
d. Functional group isomers
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3. A 10-year-old child has height of 178 cm and body mass of 67 kg. These presentations are caused by the functional disturbance of the:

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

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c. Pituitary gland
d. Parathyroid glands
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5. A 37-year-old man developed leg edema after prolonged fasting. What pathogenetic factor plays the leading role in the development of edema in this case?

a. Increased oncotic pressure in the tissues
b. Decreased oncotic blood pressure
c. Decreased osmotic blood pressure
d. Increased osmotic pressure of interstitial fluid
e. Decreased hydrostatic blood pressure

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c. Decreased hydrostatic blood pressure
d. Increased oncotic pressure in the tissues
e. Decreased oncotic blood pressure

7. A 50-year-old patient in a poor condition was presented to the hospital. Objectively, the skin and visible mucous membranes are cyanotic, arterial blood saturation --- 88%, NiBP --- 90/60 mm Hg, pulse is 117 per minute, respiratory rate is 22 per minute. From the history it is known that the patient suffers from chronic heart failure. Which of the following types of hypoxia is most likely to develop in this case?

a. Anemic
b. Tissue
c. Circulatory
d. Hypoxic
e. Hemic

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patient suffers from chronic heart failure. Which of the following types of hypoxia is most likely to develop in this case?

a. Tissue

b. Circulatory

c. Hypoxic

d. Anemic

e. Hemic

9. A 53-year-old person has been admitted into the gastroenterology department with complaints of dyspeptic disorders and melena. Objectively, the patient has splenomegaly, ascites, and dilated superficial veins of the anterior abdominal wall. What syndrome can be characterized by these signs?

a. Portal hypertension

b. Cholemia

c. Arterial hypotension

d. Suprahepatic jaundice

e. Acholia

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a. Suprahepatic jaundice

b. Cholemia

c. Acholia

d. Arterial hypotension

e. Portal hypertension

11. A 55-year-old man came to a doctor with complaints of acute pain in his big toes. Meat and wine remain permanently in his diet. The doctor suspects gout. What substance must be measured in the patient's blood to confirm this diagnosis?

a. Bilirubin

b. Uric acid

c. Ketone bodies

d. Lactate

e. Urea

12. A 55-year-old man came to a doctor with complaints of acute pain in his big toes. Meat and wine remain permanently in his diet. The doctor suspects gout. What substance must be measured in the patient's blood to confirm this diagnosis?

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b. Ketone bodies

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d. Lactate

e. Uric acid

13. A benzimidazole derivative, omeprazole, has been prescribed to a patient with a duodenal ulcer accompanied by an increased secretion of gastric juice. What is the mechanism of action of this drug?

a. Stimulation of H^+, K^+ -ATPase

b. Blockade of M1-cholinergic receptors

c. Irreversible blockade of H^+, K^+ -ATPase

d. Blockade of H2-histamine receptors

e. Stimulation of H2-histamine receptors

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e. Blockade of M1-cholinergic receptors

15. A child had been administered antidiphtheric serum. What resistance was formed in the child?

a. Active

b. Primary
c. Passive
d. Physiological
e. Pathologic
16. A child had been administered antidiphtheric serum. What resistance was formed in the child?
a. Primary
b. Physiological
c. Passive
d. Active
e. Pathologic
17. A dissected flower has numerous stamens that are united by the stamen filaments into several bundles. What is this type of androecium?
a. Polyadelphous
b. Diadelphous
c. Monadelphous
d. Tetradynamous
e. Didynamous
18. A dissected flower has numerous stamens that are united by the stamen filaments into several bundles. What is this type of androecium?
a. Tetradynamous
b. Polyadelphous
c. Didynamous
d. Monadelphous
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19. A doctor has prescribed a nonsteroidal anti-inflammatory drug to relieve inflammation and pain syndrome. Name this drug:
a. Glibenclamide
b. Loratadine
c. Paracetamol
d. Fentanyl
e. Diclofenac sodium
20. A doctor has prescribed a nonsteroidal anti-inflammatory drug to relieve inflammation and pain syndrome. Name this drug:
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21. A drug solution sterilized by means of boiling was tested for sterility. Inoculation on Kitt-Tarozzi medium revealed clostridia. Clostridia survived the boiling because they are:
a. Acid-fast
b. Spore-formers
c. Prototrophic
d. Thermophilic
e. Anaerobic
22. A drug solution sterilized by means of boiling was tested for sterility. Inoculation on Kitt-Tarozzi medium revealed clostridia. Clostridia survived the boiling because they are:
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23. A dry-heat box is used for sterilization of various materials and instruments in a bacteriological laboratory. This sterilization method can be applied to the following objects:
a. Simple nutrient medium

b. Physiological solution
c. Glass test tubes
d. Wire inoculating loops
e. Rubber gloves
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a. Simple nutrient medium
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25. A human is immune to the plague of cattle and dogs. What type of immunity is it?
a. Artificial active
b. Natural active
c. Natural passive
d. Innate
e. Artificial passive
26. A human is immune to the plague of cattle and dogs. What type of immunity is it?
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b. Artificial passive
c. Natural passive
d. Innate
e. Artificial active
27. A local general practitioner recommends taking interferon for influenza prevention. What is the mechanism of action of this drug?
a. Blocks virus protein synthesis
b. Inhibits virion exit from cells
c. Prevents adsorption of virus in cell receptors
d. Blocks virus stripping
e. Disrupts the process of virus assembly
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c. Blocks virus protein synthesis
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29. A man came to a doctor complaining of a headache, pain in the throat during swallowing, and an increase in the body temperature. He was diagnosed with tonsillitis. What changes in the patient's blood can be expected in this case?
a. Neutrophilic leukocytosis
b. Eosinophilic leukocytosis
c. Monocytosis
d. Lymphocytosis
e. Basophilic leukocytosis
30. A man came to a doctor complaining of a headache, pain in the throat during swallowing, and an increase in the body temperature. He was diagnosed with tonsillitis. What changes in the patient's blood can be expected in this case?
a. Lymphocytosis
b. Basophilic leukocytosis
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d. Neutrophilic leukocytosis
e. Monocytosis
31. A man developed agranulocytosis after pneumonia treatment with sulfonamides. Antibodies to neutrophils were detected in the patient's blood. This pathology belongs to the following type of

allergic reactions:
a. Immune complex
b. Anaphylactic
c. Cytotoxic
d. Cell-mediated
e. Reactive
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33. A man has a nitrate poisoning. What type of hypoxia will develop in this case?
a. Hemic hypoxia
b. Circulatory hypoxia
c. Tissue hypoxia
d. Hypoxic hypoxia
e. Respiratory hypoxia
34. A man has a nitrate poisoning. What type of hypoxia will develop in this case?
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35. A man has undergone a course of radiotherapy and chemotherapy. The drug complex included 5-fluorodeoxyuridine that is an inhibitor of thymidylate synthase. This drug blocks the synthesis of a certain substance. What substance is it?
a. DNA
b. Protein
c. rRNA
d. mRNA
e. tRNA
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d. rRNA
e. mRNA
37. A patient complains of loss of appetite, weight loss, weakness, and abdominal pain. Laboratory blood test shows the following: Hb --- 90 g/L; erythrocytes --- $2.0 · 10^{12$/L; color index --- 1.4. B_{12} deficiency anemia has been diagnosed. What substance is deficient in this patient, causing the anemia?
a. Pepsin
b. Secretin
c. Castle factor
d. Hydrochloric acid
e. Renin
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39. A patient demonstrates symmetrical dermatitis on the palms. A doctor made a diagnosis of pellagra. What vitamin deficiency can result in such symptoms?
a. Ascorbic acid
b. Nicotinic acid
c. Folic acid
d. Cholecalciferol
e. Cobalamin
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41. A patient developed neuritis of the facial nerve after five months of tuberculosis treatment. What drug has caused this side effect?
a. Benzylpenicillin sodium
b. Isoniazid
c. Rifampicin
d. Para-aminosalicylate sodium
e. Ceftriaxone
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43. A patient has been diagnosed with acute pancreatitis. For diagnostic purposes, it is necessary to measure the activity of a certain enzyme in the patient's blood. What enzyme is it?
a. Amylase
b. Lactate dehydrogenase
c. Creatine kinase
d. Aldolase
e. Pepsin
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45. A patient has been hospitalized with signs of carbon monoxide poisoning. What type of hypoxia is characteristic of this condition?
a. Hypoxic hypoxia
b. Respiratory hypoxia
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d. Tissue hypoxia
e. Circulatory hypoxia
46. A patient has been hospitalized with signs of carbon monoxide poisoning. What type of hypoxia is

characteristic of this condition?
a. Tissue hypoxia
b. Hypoxic hypoxia
c. Respiratory hypoxia
d. Hemic hypoxia
e. Circulatory hypoxia
47. A patient has been warned that the medicine prescribed to him can cause a cough. Name this medicine:
a. Lisinopril
b. Phenyhydin (Nifedipine)
c. Dichlothiazide (Hydrochlorothiazide)
d. Clophelin (Clonidine)
e. Metoprolol
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49. A patient presents with hypoxia. What metabolic process activates when oxygen supply is insufficient?
a. Oxidative decarboxylation of keto acids
b. Anaerobic glycolysis
c. Pentose-phosphate pathway
d. Tricarboxylic acid cycle
e. Urea cycle
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51. A patient suffers from intense cough with production of viscous sputum. What drug can thin the sputum and facilitate expectoration?
a. Acetylcysteine
b. Prenoxdiazine
c. Codeine phosphate
d. Butamirate
e. Glaucine
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53. A patient was prescribed losartan for treatment of arterial hypertension. What mechanism of action does this drug have?
a. Inhibition of angiotensin-converting enzyme
b. Angiotensin-receptor blockade
c. Calcium channel blockade
d. Activation of central α-adrenoceptors
e. Inhibition of phosphodiesterase

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55. A patient with Cushing syndrome has persistent hyper- \\ glycemia and glucosuria. In this case, increased synthesis and secretion of a certain hormone can be observed. What hormone is it?
a. Adrenaline
b. Thyroxine
c. Cortisol
d. Insulin
e. Glucagon
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57. A patient with an acute myocardial infarction had been receiving heparin as a component of complex therapy. After a time, the patient developed hematuria. What drug is indicated as an antidote to heparin?
a. Aminocaproic acid
b. Fibrinogen
c. Neodicoumarin (ethyl biscoumacetate)
d. Protamine sulfate
e. Vicasol (Menadione)
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59. A patient with gingivitis was prescribed oral cavity irrigation with 0.02% potassium permanganate solution. What group of antiseptics does this drug belong to?
a. Alcohols
b. Nitrofurans
c. Detergents
d. Oxidants
e. Dyes
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61. A patient with gout has been prescribed allopurinol. What is the mechanism of action of this drug?
a. Intensification of uric acid excretion by the kidneys
b. Inhibition of xanthine oxidase enzyme, inhibition of uric acid synthesis
c. Inhibition of COX-2 enzyme

d. Stimulation of uric acid breakdown
e. Activation of microsomal oxidation in the liver
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63. A patient with signs of mercury poisoning has been delivered into an admission room. What antidote should be prescribed in this case?
a. Unithiol
b. Proserin
c. Calcium chloride
d. Naloxone
e. Atropine sulfate
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65. A patient, who has been suffering from chronic glomerulonephritis for the last 4 years, presents with a large amount of protein (4g/L) that appeared in the urinalysis. The levels of triglycerides and cholesterol increased in the patient's blood. What syndrome has complicated the course of the main disease in this case?
a. Nephrotic
b. Toxic
c. Asthenic
d. Hypertensive
e. Inflammatory
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d. Hypertensive
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67. A patient, who was prescribed famotidine for peptic ulcer disease, came to a pharmacy. What mechanism underlies the action of this medicine?
a. Inhibition of the H^+K^+ ATPase activity
b. H_1-histamine receptors blockade
c. H_2-histamine receptors blockade
d. Muscarinic cholinoreceptor blockade
e. Cholinergic receptors blockade in the sympathetic ganglia
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c. Cholinergic receptors blockade in the sympathetic ganglia
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69. A person came to a doctor with complaints of loss of sensitivity and pain along the peripheral

nerves. Blood testing revealed elevated levels of pyruvic acid. What vitamin can cause such changes, if it is deficient in the body?

a. Pantothenic acid
b. Biotin
c. Vitamin PP
d. Vitamin $B1$
e. Vitamin $B2$

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a. Pantothenic acid
b. Vitamin PP
c. Vitamin $B2$
d. Biotin
e. Vitamin $B1$

71. A person has been stung by a bee. The stung area developed redness and edema. What is the main mechanism of edema development?

a. Increased hydrostatic blood pressure
b. Decreased oncotic blood pressure
c. Decreased osmotic blood pressure
d. Increased permeability of the \\ capillaries
e. Disturbed lymphatic efflux

72. A solution contains calcium, barium, aluminium, potassium, and sodium cations. Into this solution a small amount of ammonium hydroxide and alizarin solution was added, which resulted in production of red precipitate. What ion was detected as the result of this reaction?

a. Calcium
b. Barium
c. Aluminium
d. Potassium
e. Sodium

73. A solution contains calcium, barium, aluminium, potassium, and sodium cations. Into this solution a small amount of ammonium hydroxide and alizarin solution was added, which resulted in production of red precipitate. What ion was detected as the result of this reaction?

a. Sodium
b. Potassium
c. Barium
d. Calcium
e. Aluminium

74. A student studies the digestive system of vertebrates. The organ that is being studied is primarily located in the right upper quadrant of the abdomen. It detoxifies various metabolites, produces hormones and digestive biochemicals, regulates glycogen storage, synthesizes proteins, and decomposes red blood cells. What organ is being studied by the student?

a. Liver
b. Heart
c. Kidneys
d. Lungs
e. Pancreas

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76. A study of the microbiological purity of tablet formulations is conducted on the production site. After cultivating samples on mannitol salt agar, golden-yellow colonies grow up. Microscopic examination of colonies establishes the presence of gram-positive bacteria of spherical shape, located in clusters; microorganisms has the ability to coagulate the plasma. The pure culture of which of the following bacteria is discovered?

a. Pseudomonas aeruginosa
b. Enterobacteriaceae
c. Staphylococcus epidermidis
d. Staphylococcus aureus
e. Staphylococcus saprophyticus

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a. Staphylococcus epidermidis
b. Staphylococcus saprophyticus
c. Pseudomonas aeruginosa
d. Enterobacteriaceae
e. Staphylococcus aureus

78. A woman in the state of ketoacidotic coma has loud rapid respiration: a labored expiration with active participation of expiratory muscles occurs after a deep inspiration. What type of pathological respiration is it?

a. Kussmaul
b. Cheyne-Stokes
c. Stenotic
d. Biot
e. Gasping

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80. A woman with hypertension came to a doctor complaining of dry cough that developed against the background of her therapy. What antihypertensive drug was she taking?

a. Atenolol
b. Furosemide
c. Nifedipine
d. Dichlothiazide (Hydrochlorothiazide)
e. Lisinopril

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82. A woman, who works at a factory that produces phenylhydrazine, came to a hospital with complaints of general weakness, dizziness, and drowsiness. Her blood has signs of anemia with high levels of reticulocytosis, anisocytosis, and poikilocytosis; isolated normocytes are present in the woman's blood. What type of anemia is it?

a. Aplastic anemia
b. Protein-deficiency anemia
c. Iron-deficiency anemia
d. Metaplastic anemia
e. Hemolytic anemia

83. A woman, who works at a factory that produces phenylhydrazine, came to a hospital with complaints of general weakness, dizziness, and drowsiness. Her blood has signs of anemia with high levels of reticulocytosis, anisocytosis, and poikilocytosis; isolated normocytes are present in the woman's blood. What type of anemia is it?

a. Protein-deficiency anemia
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84. According to Van't Hoff rule, when the temperature is raised by 10 degrees, the reaction rate increases by:

a. 10 times
b. 5 times
c. 2--4 times
d. 1.5 times
e. Temperature does not affect reaction rate

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a. 10 times
b. Temperature does not affect reaction rate
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d. 5 times
e. 2--4 times

86. Action of a number of drugs is based on the effect of competitive inhibition of enzyme activity. Name its characteristic feature.

a. Inhibition degree does not depend on the substrate concentration
b. Inhibitor is a structural analogue of the enzyme
c. Inhibitor forms strong covalent bonds with the active site of the enzyme
d. Inhibitor is a structural analogue of the substrate
e. Inhibitor has no effect on the enzyme's affinity for its substrate

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e. Inhibitor is a structural analogue of the substrate

88. After a physical exertion, a patient developed an angina pectoris attack caused by myocardial ischemia. What definition most accurately describes the concept of ischemia?

a. Decreased erythrocyte count in the blood
b. Increased oxygen delivery to tissues
c. Dilation of arterioles
d. Oxygen deficiency in the circulatory system
e. Discrepancy between the blood supply to the tissues and the need for it

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90. After eating strawberries, a child developed itchy red spots on the skin (urticaria). What type of leukocytosis would be detected in this child?

a. Basophilic
b. Neutrophilic
c. Eosinophilic
d. Monocytic
e. Lymphocytic

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92. After the examination, the patient was diagnosed with typhus. What is the route of transmission of this disease?

a. Vector-borne transmission
b. Fecal-oral transmission
c. Vertical transmission
d. Parenteral transmission
e. Airborne droplet transmission

93. After the examination, the patient was diagnosed with typhus. What is the route of transmission of this disease?

a. Fecal-oral transmission
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c. Vector-borne transmission
d. Parenteral transmission
e. Vertical transmission

94. An analytical chemist conducts a qualitative analysis of cations of the second group. What reagent can be used to separate lead chloride from chlorides of other cations of the second group?

a. Hot water
b. Ammonia
c. Sodium hydroxide
d. Hydrochloric acid
e. Sodium chloride

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96. An analytical chemist performs a qualitative analysis of cations that belong to the sixth analytical group. If nickel ions are processed with Chugaiev's reagent (dimethylglyoxime), a colored compound is produced. What is the color of the resulting compound?

a. Yellow
b. Red
c. Green
d. Blue
e. Violet

97. An analytical chemist performs a qualitative analysis of cations that belong to the sixth analytical group. If nickel ions are processed with Chugaiev's reagent (dimethylglyoxime), a colored compound is produced. What is the color of the resulting compound?

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b. Violet
c. Blue
d. Green
e. Red
98. An elderly patient suffers from constipation caused by colon hypotonia. What drug should be prescribed?
a. Atropine sulfate
b. Castor oil
c. Novocainamide (Procainamide)
d. Bisacodyl
e. Sodium sulfate
99. An elderly patient suffers from constipation caused by colon hypotonia. What drug should be prescribed?
a. Novocainamide (Procainamide)
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d. Sodium sulfate
e. Atropine sulfate
100. Caffeine is one of the alkaloids contained in tea and coffee. Caffeine is contraindicated in case of:
a. Essential hypertension
b. Depression of nervous activity
c. Addiction
d. Hypotension
e. Migraine
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a. Hypotension
b. Migraine
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d. Addiction
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102. Corolla of a zygomorphic hermaphroditic flower consists of 5 petals: the largest one is called the banner, the two lateral petals are called the wings, and the two fused petals are forming the keel. Such corolla is characteristic of medicinal plants of Leguminosae family. Name the type of corolla:
a. Papilionaceous
b. Funnelform
c. Tubular
d. Labiate
e. Saucer-shaped
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104. Cosmetic cream against mimic wrinkles contains "vitamin Q10" --- ubiquinone. What is the metabolic role of this vitamin-like substance?
a. It is a component of the mitochondrial respiratory chain
b. It decreases permeability of cell membranes
c. It regulates differentiation of epithelial cells
d. It regulates water-salt exchange
e. It stimulates collagen synthesis

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106. Coumarins, vitamin K antagonists, suppress the processes of blood coagulation. Synthesis of what protein is blocked by coumarins?
a. Prothrombin
b. Transferrin
c. Gamma globulin
d. Ceruloplasmin
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108. Cultivated annual plant with glands and indumentum has alternate obovate leaves and flat capitulum inflorescences with orange pseudoligulate ray florets and yellow tubular disc florets. Specify this plant.
a. Artemisia absinthium
b. Centaurea cyanus
c. Calendula officinalis
d. Arctium lappa
e. Echinacea purpurea
109. Cultivated annual plant with glands and indumentum has alternate obovate leaves and flat capitulum inflorescences with orange pseudoligulate ray florets and yellow tubular disc florets. Specify this plant.
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e. Artemisia absinthium
110. Different structures of the bacterial cell perform different special functions. This component provides the adaptive capabilities of the bacterium and its protection against the adverse conditions of the environment. What component is it?
a. Cilia
b. Spores
c. Flagella
d. Inclusions
e. Capsule
111. Different structures of the bacterial cell perform different special functions. This component provides the adaptive capabilities of the bacterium and its protection against the adverse conditions of the environment. What component is it?
a. Flagella
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d. Cilia
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112. During bacteriology of the feces of a patient with diarrhea, a pure culture of rod-shaped, slightly bent microorganisms was isolated. In the microslide, these microorganisms resemble schools of fish.

Their inoculation on alkaline media (alkaline peptone water) results in formation of a blue-tinted film after 6 hours. What pathogen has such properties?

a. Vibrio cholerae

b. Spirochetes

c. Salmonellae

d. Mycobacteria

e. Escherichia coli

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d. Vibrio cholerae

e. Spirochetes

114. During examination it appeared that the patient's sclera and oral mucosa are icteric. What biochemical blood value can be expected to be increased?

a. Glucose

b. Bilirubin

c. Cholesterol

d. Albumin

e. Amylase

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116. During harvesting of a herbal raw material (belladonna), the plants had burns and patches of withering and rot. What microorganisms cause this kind of damage in plants?

a. Microfungi

b. Mycoplasma

c. Protozoa

d. Viroids

e. Viruses

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118. During photosynthesis within plant cell chloroplasts there is short-term retained starch being produced, which rapidly hydrolyzes into glucose. This starch is called:

a. Primary

b. Transitory

c. Reserve

d. Secondary

e. Resistant

119. During photosynthesis within plant cell chloroplasts there is short-term retained starch being produced, which rapidly hydrolyzes into glucose. This starch is called:

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c. Resistant
d. Primary
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120. During the analysis of the cations that belong to the fourth analytical group (acid-base classification), their processing with a group reagent makes it possible not only to separate, but also to identify the following ions:
a. Al(III) ions
b. Zn(II) ions
c. As(III) ions
d. Sn(IV) ions
e. Cr(III) ions
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e. Cr(III) ions
122. During the assessment of air purity in an aseptic unit of a phamacy, sedimentation analysis resulted in growth of small colonies with areas of hemolysis. What medium was used for inoculation in this case?
a. Endo agar
b. Egg-yolk salt agar
c. Levine formulation (eosin methylene blue agar)
d. Ploskirev agar
e. Blood agar
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124. Early-flowering rhizomatous ephemeroids include: Tussilago farfara, Convallaria majalis, and:
a. Adonis vernalis
b. Allium cepa
c. Thymus serpyllum
d. Carum carvi
e. Chamomilla recutita
125. Early-flowering rhizomatous ephemeroids include: Tussilago farfara, Convallaria majalis, and:
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b. Chamomilla recutita
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d. Adonis vernalis
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126. Elevated levels of ketone bodies were detected in the blood of a patient with diabetes mellitus. Ketone bodies are synthesized from the following compound:
a. Acetyl-CoA
b. Lactate
c. Glucose
d. Malate
e. Succinate
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128. Essential oils are used both in pharmaceutical and cosmetic industry. To extract essential oils from herbal raw material the following technology is used:

a. Calorimetry

b. Conductometry

c. Colorimetry

d. Potentiometry

e. Steam distillation

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130. Etiological factors of infectious diseases can be infectious agents with diverse ultrastructure. Which of the following groups does not have cellular structure, protein synthesis, enzymatic and energy systems?

a. Protozoa

b. Viruses

c. Fungi

d. Bacteria

e. Rickettsia

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132. For tetanus prevention, a toxin that has been neutralized with formalin (0.4%) at the temperature of 39°C for four weeks is used. What kind of preparation is it?

a. Adjuvant

b. Antitoxic serum

c. Anatoxin

d. Immunoglobulin

e. Inactivated vaccine

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134. For the symptomatic treatment of diarrhea, the doctor prescribed the patient a drug that inhibits intestinal peristalsis after making sure that the patient's diarrhea was of non-infectious origin. What drug was prescribed in this case?

a. Mannitol

b. Augmentin (Co-amoxiclav)

c. Thiamine
d. Dexamethasone
e. Loperamide
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136. Gastric herbal tea contains oval brown lignified "cones" up to 1.5 cm long, which are:
a. Juniperus galbuli
b. Larix cones
c. Platycladus orientalis cones
d. Alnus infructescences
e. Cupressus cones
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138. Glycyrrhiza glabra L., a valuable medicinal plant, is widely used in official and folk medicine. What part of the plant is harvested?
a. Roots with rhizomes
b. Seeds
c. Grass
d. Leaves
e. Inflorescences
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140. Having examined the patient, the doctor made a diagnosis of tick-borne encephalitis. What is the route of transmission of this disease?
a. Airborne-droplet
b. Vertical
c. Vector-borne
d. Fecal-oral
e. Parenteral
141. Having examined the patient, the doctor made a diagnosis of tick-borne encephalitis. What is the route of transmission of this disease?
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142. Helmholtz energy is the direction criterion of an arbitrary process at a constant:
a. Temperature and volume
b. Entropy and pressure
c. Entropy and volume

d. Temperature and pressure
e. Internal energy and volume
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144. How many stereoisomeric aldohexoses exist?
a. 16
b. 4
c. 6
d. 8
e. 2
145. How many stereoisomeric aldohexoses exist?
a. 6
b. 2
c. 16
d. 4
e. 8
146. Hyperlipemia can be observed in 2--3 hours after eating fatty food. 9 hours later lipid content normalizes again. How can this condition be characterized?
a. Hyperplastic obesity
b. Alimentary hyperlipemia
c. Retention hyperlipemia
d. Hypertrophic obesity
e. Transport hyperlipemia
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148. In E) coli cells, the synthesis of pyrimidine nucleotides occurs according to the scheme of the metabolic pathway: $CO_2 + NH_3$ + 2ATP> S1> S2> UTP> CTP. When CTP concentration in the cell increases, the synthesis of pyrimidine nucleotides stops. What type of regulation is described here?
a. Attachment of inhibitor proteins
b. Enzyme molecule phosphorylation
c. Partial proteolysis
d. Allosteric regulation
e. Detachment of inhibitor proteins
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150. In cases of severe pancreatitis, physicians usually prescribe the drugs that help prevent pancreatic autolysis. These drugs inhibit the following type of enzymes:
a. Amylases
b. Phosphatases
c. Dehydrogenases

d. Proteases
e. Lipases
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152. In common corn (Zea mays), male spikelets are gathered in an apical panicle and female flowering spikelets form dense axillary spadices. What type of plant is Zea mays?
a. Dioecious
b. Monandrous
c. Polyecious
d. Monoecious
e. Unisexual
153. In common corn (Zea mays), male spikelets are gathered in an apical panicle and female flowering spikelets form dense axillary spadices. What type of plant is Zea mays?
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154. In medical practice barbiturates are used as sleeping pills. These substances act similar to rothenone and are inhibitors of tissue respiration. The mechanism of their action takes place on the enzymatic level. Which of the following enzymes do these substances inhibit?
a. Cytochrome C reductase
b. Succinate dehydrogenase
c. NADH-coenzyme Q reductase
d. Adenosine triphosphate synthetase
e. Cytochrome oxidase
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156. In medicine and pharmacy, such phenomena as adsorption, wetting, adhesion, etc. can be observed. What are they called?
a. Electrokinetic phenomena
b. Superficial phenomena
c. Optical phenomena
d. Molecular-kinetic phenomena
e. Physico-chemical phenomena
157. In medicine and pharmacy, such phenomena as adsorption, wetting, adhesion, etc. can be observed. What are they called?
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158. In order to carry out the silver cations identification, HCl was added to the solution. Later, the formed solution was followed by adding the solution of ammonia. Specify which of the

below-mentioned compounds are formed in such case?

a. $[Ag(NH_3)_2]Cl$

b. $[Ag(NH_3)_3]Cl$

c. $AgCl$

d. $[Ag_2(NH_3)_3]Cl$

e. AgOH

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160. In order to facilitate usage and achievement of necessary therapeutic effect, the drug or medicinal plant material is given a certain dosage form. Indicate the dosage form in the form of a free-disperse system:

a. Diaphragm

b. Jelly

c. Membrane

d. Emulsion

e. Gel

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162. In redox titrimetry, the indicators that are added to the reaction system respond to the changes in the:

a. Degree of ionization of the substance being analyzed

b. Concentration of hydroxyl ions

c. Ionic strength of the solution

d. Concentration of hydrogen ions

e. Redox potential of the system

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e. Degree of ionization of the substance being analyzed

164. In snake venom there is a substance that causes erythrocyte hemolysis when it is introduced into a human organism. Blood test revealed a large amount of lysolecithin (lysophosphatidylcholine). What enzyme leads to accumulating lysolecithin in blood?

a. Phospholipase A1

b. Phospholipase A2

c. Phospholipase D

d. Neuraminidase

e. Phospholipase C

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b. Neuraminidase
c. Phospholipase A2
d. Phospholipase C
e. Phospholipase A1

166. In the course of an experiment in the mesenteric vein of a toad a trombus was created with a crystal of common salt. What processes occurred during the first stage of trombus formation?
a. Production of fibrin monomer
b. Production of thrombin
c. Adhesion, aggregation, agglutination of platelets
d. Production of fibrin polymer
e. Production of active thromboplastin

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168. In the patient, a gallstone lodged in the common bile duct has blocked the flow of bile into the intestine. What digestive process will be disturbed in this case?
a. Digestion of fats
b. Absorption of proteins
c. Digestion of carbohydrates
d. Digestion of proteins
e. Absorption of carbohydrates

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c. Digestion of proteins
d. Digestion of carbohydrates
e. Digestion of fats

170. In the process of asexual reproduction, higher spore-forming plants have the ability to form spores, which is an adaptation to life on dry land. What set of chromosomes do their spores have?
a. Polyploid
b. Triploid
c. Diploid
d. Haploid
e. Tetraploid

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a. Tetraploid
b. Haploid
c. Diploid
d. Polyploid
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172. In the process of creating vaccines, pathogens of infectious diseases are being attenuated. What is the essence of the attenuation process?
a. Discovering antigenic determinants of the main antigens of the pathogen
b. Inactivation of pathogens while preserving the antigenic structure of cells
c. Reduction of immunogenicity of the pathogen
d. Isolation of protective antigens from microbial cells
e. Artificial reduction of virulent properties of pathogens

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e. Isolation of protective antigens from microbial cells
174. In the roots of primary structure, the nutrient reserves are stored in the:
a. Central axial cylinder
b. Exodermis
c. Mesodermis
d. Pericycle
e. Endodermis
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a. Central axial cylinder
b. Pericycle
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176. In what pair of substances the both of them form a precipitate of metallic silver when Tollens reagent is added (during heating)?
a. Propanal and formic acid
b. Acetic acid and formic acid
c. Propanal and acetic acid
d. Propanol and formic acid
e. Ethanol and formic acid
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c. Acetic acid and formic acid
d. Ethanol and formic acid
e. Propanal and acetic acid
178. Interferons are natural antiviral and antitumor agents. What is their mechanism of action?
a. Repair activation
b. Replication activation
c. Transcription activation
d. Protein synthesis increase
e. Protein synthesis depression
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a. Transcription activation
b. Replication activation
c. Repair activation
d. Protein synthesis increase
e. Protein synthesis depression
180. Isotonicity is one of the requirements for infusion solutions. What aqueous salt solution is used in clinical practice as an isotonic solution?
a. 10% solution of NaCl
b. 4.5-5.0% glucose solution
c. 10% solution of CaCl_2
d. 0.85-0.90% solution of NaCl
e. 0.9% solution of MgCl_2
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c. 10% solution of NaCl
d. 0.9% solution of $MgCl_2$
e. 10% solution of $CaCl_2$

182. Many serological reactions require strictly aseptic conditions. What method of sterilization is optimal for decontamination of laboratory glassware?
a. Pasteurization
b. Calcination
c. Filtration
d. Dry heat
e. Tyndallization

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184. Microscopy of the smears obtained from the coating on the patient's tonsils was stained according to the Neisser technique. The staining revealed thin yellow bacilli with dark blue grains at their ends, arranged in the form of the Roman numeral V. What pathology can be suspected based on the results of microscopy?
a. Diphtheria
b. Tuberculosis
c. Measles
d. Pertussis
e. Influenza

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a. Influenza
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186. Microscopy shows that basidia with basidiospores are formed on the hymenium. What division do these fungi belong to?
a. Chytridiomycota
b. Basidiomycota
c. Ascomycota
d. Lychenophyta
e. Zygomycota

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a. Chytridiomycota
b. Lychenophyta
c. Ascomycota
d. Zygomycota
e. Basidiomycota

188. Name the ability of high-molecular compounds to prevent precipitation of lyophobic sols and deposition of cholesterol plaques on the vessel walls:
a. Coacervation
b. Thixotropy
c. Sedimentation
d. Colloid protection

e. Coagulation

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a. Sedimentation
b. Coacervation
c. Colloid protection
d. Thixotropy
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190. On X-ray examination of the 59-year-old patient, in the lower lobe of the right lung there was detected a distinct shadow, differential for tumor. It was pre-determined that the tumor is benign. Which of the following features characterizes the tumor as benign?

a. Metastasis
b. Infiltrating growth
c. Cancer cachexia
d. Invasion in surrounding tissues
e. Expansive growth

191. One hour after a child took polyvitamins in the dosage form of a syrup, the child developed a markedly itching urticaria-type rash all over the body. What type of allergic response can be characterized by this sign?

a. Anaphylactic
b. Immune complex
c. Delayed-type hypersensitivity
d. Autoallergic
e. Cytotoxic

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a. Cytotoxic
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193. Osmotic pressure is an important characteristic of biological fluids. Semipermeable membranes are necessary for penetration of solvent molecules. What substance cannot be used as a semipermeable membrane?

a. Collodion film
b. Glass
c. Gelatine
d. Biological membrane
e. Parchment

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195. Pastes are used in medicine to treat skin diseases. What type of disperse systems are they?

a. Suspensions
b. Foams
c. Aerosols
d. Powders
e. Emulsions

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197. Pathogenic bacteria in the human body can form structures that protect them from phagocytosis. Name these structures.
a. Capsule
b. Mesosomes
c. Flagella
d. Inclusions
e. Spores
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199. People, who were indoors during a fire, suffer from a carbon monoxide poisoning. What type of hypoxia is observed in such cases?
a. Hemic hypoxia
b. Tissue hypoxia
c. Respiratory hypoxia
d. Circulatory hypoxia
e. Hypoxic hypoxia
200. People, who were indoors during a fire, suffer from a carbon monoxide poisoning. What type of hypoxia is observed in such cases?
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201. Plantago major inflorescence grows at the apex, its rachis is long, with sessile flowers. Name this type of inflorescence:
a. Spike
b. Thyrse
c. Capitulum
d. Spadix
e. Panicle
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b. Thyrse
c. Capitulum
d. Spadix
e. Spike
203. Preparations of colloid silver -- Protargol (silver proteinate) and Collargol (colloid silver) -- contain proteine compounds besides their active substance. What is the function of proteins in these preparations?
a. Increased storage time
b. Improved preparation technology
c. Protection of colloid solution against coagulation
d. Increased bactericidal action of \\ silver
e. Decreased side effects

204. Preparations of colloid silver -- Protargol (silver proteinate) and Collargol (colloid silver) -- contain proteine compounds besides their active substance. What is the function of proteins in these preparations?

a. Increased storage time
b. Improved preparation technology
c. Decreased side effects
d. Increased bactericidal action of \\ silver
e. Protection of colloid solution against coagulation

205. Preventive examination revealed an enlargement of the patient's thyroid gland, exophthalmos, high body temperature, and an elevated heart rate of 110/min. What hormone levels should be measured in the patient's blood in this case?

a. Cortisol
b. Testosterone
c. Glucagon
d. Insulin
e. Thyroxine

206. Preventive examination revealed an enlargement of the patient's thyroid gland, exophthalmos, high body temperature, and an elevated heart rate of 110/min. What hormone levels should be measured in the patient's blood in this case?

a. Testosterone
b. Insulin
c. Cortisol
d. Glucagon
e. Thyroxine

207. Proteins are the catalysts of biochemical processes. What type of homogeneous catalysis includes the processes with their participation?

a. Enzyme catalysis
b. Gas-phase homogeneous catalysis
c. Coordination catalysis
d. Acid-base catalysis
e. Redox catalysis

208. Proteins are the catalysts of biochemical processes. What type of homogeneous catalysis includes the processes with their participation?

a. Gas-phase homogeneous catalysis
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e. Redox catalysis

209. Reaction of sodium ions with potassium hexahydroxoantimonate (V) in a neutral medium produces precipitate. Specify the color of this precipitate:

a. Green
b. Red
c. Blue
d. White
e. Yellow

210. Reaction of sodium ions with potassium hexahydroxoantimonate (V) in a neutral medium produces precipitate. Specify the color of this precipitate:

a. Red
b. Yellow
c. Green
d. White
e. Blue

211. Rhizome of a species belonging to the Asteraceae family is polycephalous, succulent, has lysigenous cavities, accumulates inulin. Such underground organ is characterisic of:

a. Digitalis grandiflora

b. Inula helenium
c. Sorbus aucuparia
d. Hyoscyamus niger
e. Helianthus annuus
212. Rhizome of a species belonging to the Asteraceae family is polycephalous, succulent, has lysigenous cavities, accumulates inulin. Such underground organ is characterisic of:
a. Hyoscyamus niger
b. Inula helenium
c. Digitalis grandiflora
d. Helianthus annuus
e. Sorbus aucuparia
213. Salts and esters of oxalic acid are called:
a. Oxalates
b. Adipinates
c. Malonates
d. Urates
e. Succinates
214. Salts and esters of oxalic acid are called:
a. Adipinates
b. Malonates
c. Oxalates
d. Succinates
e. Urates
215. Sclerenchyma fibers, formed by procambium or parenchyma around vascular bundles or secretory cavities, strengthen and protect them. What type of fibers is it?
a. Cortical fibers
b. Perivascular fibers
c. Phloem fibers
d. Xylem fibers
e. Pericyclic fibers
216. Sclerenchyma fibers, formed by procambium or parenchyma around vascular bundles or secretory cavities, strengthen and protect them. What type of fibers is it?
a. Cortical fibers
b. Xylem fibers
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217. Select a nucleophile among the particles and molecules given below.
a. NO_2^+
b. ddotNH_3
c. H^+
d. AlCl_3
e. CH_3Cl
218. Select a nucleophile among the particles and molecules given below.
a. NO_2^+
b. CH_3Cl
c. ddotNH_3
d. AlCl_3
e. H^+
219. Select ketose from the monosaccharides listed below:
a. Arabinose
b. Ribose
c. Fructose
d. Mannose
e. Glucose

220. Select ketose from the monosaccharides listed below:
a. Mannose
b. Fructose
c. Glucose
d. Arabinose
e. Ribose
221. Select the halogenated antiseptic that would be preferable for a child to pack in the first aid kit, when going to a summer camp:
a. Iodine alcoholic solution
b. Copper sulfate
c. Methylene blue
d. Brilliant green
e. Formaldehyde solution
222. Select the halogenated antiseptic that would be preferable for a child to pack in the first aid kit, when going to a summer camp:
a. Methylene blue
b. Brilliant green
c. Copper sulfate
d. Formaldehyde solution
e. Iodine alcoholic solution
223. Serology is the leading method of syphilis diagnostics. What test is used to diagnose this disease?
a. Gruber test
b. Wassermann test
c. Wright test
d. Haddelson test
e. Widal test
224. Serology is the leading method of syphilis diagnostics. What test is used to diagnose this disease?
a. Gruber test
b. Haddelson test
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225. Streptomycin like other aminoglycosides, by binding to the 30S subunit of ribosomes, prevents the attachment of formylmethionyl-tRNA) What process is being disrupted as a result of this effect?
a. Replication initiation
b. Transcription termination
c. Translation termination
d. Translation initiation
e. Transcription initiation
226. Streptomycin like other aminoglycosides, by binding to the 30S subunit of ribosomes, prevents the attachment of formylmethionyl-tRNA) What process is being disrupted as a result of this effect?
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227. Sulfanilamides contain a primary aromatic amino group in their structure. What method is used for quantitative determination of these compounds?
a. Nitritometry
b. Dichromatometry
c. Iodometry
d. Cerimetry
e. Permanganatometry

228. Sulfanilamides contain a primary aromatic amino group in their structure. What method is used for quantitative determination of these compounds?

a. Nitritometry
b. Iodometry
c. Cerimetry
d. Permanganatometry
e. Dichromatometry

229. Surfactants are compounds that lower the surface tension (or interfacial tension) between two liquids, between a gas and a liquid, or between a liquid and a solid. Which of the following substances exhibits the properties of a surfactant at the air-water interface?

a. Urea
b. Valeric acid
c. HCl
d. ---
e. $NaOH$

230. Surfactants are compounds that lower the surface tension (or interfacial tension) between two liquids, between a gas and a liquid, or between a liquid and a solid. Which of the following substances exhibits the properties of a surfactant at the air-water interface?

a. Urea
b. $NaOH$
c. Valeric acid
d. ---
e. HCl

231. Synthesis of a medicinal substance occurs in an isolated system. What is a direction criterion of spontaneous processes?

a. Entropy change
b. Gibbs energy
c. Intrinsic energy
d. Helmholtz energy
e. Enthalpy

232. Synthesis of a medicinal substance occurs in an isolated system. What is a direction criterion of spontaneous processes?

a. Enthalpy
b. Intrinsic energy
c. Entropy change
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233. The bacterial culture obtained from a patient does not grow when exposed to oxygen. Conditions suitable for bacterial culture growth can be created in:

a. Krotov apparatus
b. Oxidative medium
c. Anaerobic culture jar
d. Pasteur oven
e. Serum-supplemented medium

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c. Pasteur oven
d. Anaerobic culture jar
e. Krotov apparatus

235. The biological study of spores and pollen revealed tetrahedral spores with a semi-circular base and reticular surface in the pollen. There spores belong to:

a. Lycopodiophyta
b. Bryophyta

c. Equisetiphyta
d. Pinophyta
e. Polypodiophyta

236. The biological study of spores and pollen revealed tetrahedral spores with a semi-circular base and reticular surface in the pollen. There spores belong to:
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b. Lycopodiophyta
c. Pinophyta
d. Equisetiphyta
e. Polypodiophyta

237. The fruit is a bright-red juicy follicetum with a sweet-sour taste. Its seeds are kidney-shaped and smell similar to lemon. Such fruits belong to:
a. Schisandra chinensis
b. Sorbus aucuparia
c. Viburnum opulus
d. Malus domestica
e. Citrus limon

238. The fruit is a bright-red juicy follicetum with a sweet-sour taste. Its seeds are kidney-shaped and smell similar to lemon. Such fruits belong to:
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239. The main mechanism of ammonia neutralization in the body is the biosynthesis of urea. The cycle of urea synthesis begins with the formation of a certain high-energy compound. What high-energy compound is it?
a. Argininosuccinate
b. Fumaric acid
c. Carbamoyl phosphate
d. Arginine
e. Citrulline

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c. Arginine
d. Argininosuccinate
e. Fumaric acid

241. The majority of live vaccines are made from microbes with reduced virulence. What is the name of such vaccines?
a. Attenuated vaccines
b. Denatured vaccines
c. Adjuvant vaccines
d. Anatoxin vaccines
e. Adsorbed vaccines

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a. Adsorbed vaccines
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243. The mechanism of action of hormones depends on their chemical nature. What hormones can

penetrate the membrane and bind with intracellular receptors?

a. Steroid and thyroid hormones

b. Oxytocin and vasopressin

c. Catecholamines

d. Tropic hormones

e. Insulin and glucagon

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c. Steroid and thyroid hormones

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245. The method consisting in removal of low-molecular impurities from colloidal systems and high-molecular compound solutions by semipermeable membrane diffusion is called:

a. Electrodialysis

b. Compensatory dialysis

c. Decantation

d. Dialysis

e. Ultrafiltration

246. The method consisting in removal of low-molecular impurities from colloidal systems and high-molecular compound solutions by semipermeable membrane diffusion is called:

a. Electrodialysis

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247. The patient is presented to the hospital with the phenomena of growing respiratory failure. He has clinical signs of bilateral subtotal pneumonia. The clinical diagnosis is confirmed by X-ray examination. What type of respiratory failure does this patient most likely have?

a. Obstructive

b. Peripheral

c. Restrictive

d. Thoracic diaphragm

e. Central

248. The patient is presented to the hospital with the phenomena of growing respiratory failure. He has clinical signs of bilateral subtotal pneumonia. The clinical diagnosis is confirmed by X-ray examination. What type of respiratory failure does this patient most likely have?

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249. The patient, who suffers from rheumatoid arthritis and concomitant duodenal ulcer should be prescribed a non-steroidal anti-inflammatory drug. What drug is most suitable in this case?

a. Diclofenac sodium

b. Celecoxib

c. Acetylsalicylic acid

d. Paracetamol

e. Metamizole

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251. The presence of antibodies to HIV has been established in the analyzed serum by means of enzyme-linked immunosorbent assay. What method or reaction must be used to confirm the diagnosis of AIDS?
a. Biological method
b. Immunofluorescence
c. Bacteriological method
d. Virological method
e. Immunoblotting
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253. The researcher while conducting the qualitative analysis that involves sulfates precipitation of the third analytical group cations (Ca^{2+, Sr^{2+, Ba^{2+) has to reduce solubility of sulfates. What substance should he use for this purpose?
a. Chloroform
b. Benzene
c. Ethyl alcohol
d. Distilled water
e. Amyl alcohol
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b. Distilled water
c. Benzene
d. Ethyl alcohol
e. Amyl alcohol
255. The second stage of detoxification involves joining certain chemical compounds with functional groups of toxins. Select one such compound:
a. Higher fatty acids
b. Cholesterol
c. Glucose
d. Glucuronic acid
e. Pyruvate
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a. Pyruvate
b. Glucuronic acid
c. Glucose
d. Cholesterol
e. Higher fatty acids
257. The student is studying a plant organ with radial symmetry, unlimited growth and positive geotropism. It provides nourishment, vegetative reproduction and plant fastening in the soil. Which of the following is described?
a. Leaf
b. Root
c. Stem
d. Rhizome

e. Seed

258. The student is studying a plant organ with radial symmetry, unlimited growth and positive geotropism. It provides nourishment, vegetative reproduction and plant fastening in the soil. Which of the following is described?

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e. Root

259. The therapeutic properties of activated charcoal are due to its large specific surface area. Name the phenomenon, when gas absorption occurs only at the surface of a solid object:

a. Adhesion
b. Desorption
c. Cohesion
d. Adsorption
e. Recuperation

260. The therapeutic properties of activated charcoal are due to its large specific surface area. Name the phenomenon, when gas absorption occurs only at the surface of a solid object:

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d. Desorption
e. Cohesion

261. The third analitycal group of cations (acid-base classification) includes Ca^{2+, Sr^{2+, Ba^{2+. What acid can function as a precipitator agent (group reagent) for these cations?

a. $HClO_4$
b. HNO_3
c. HCl
d. CH_3COOH
e. H_2SO_4

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263. The type of bacterial respiration is of great importance for the growth and reproduction of bacteria. Some species are unable to reproduce in the presence of oxygen and use sulfate respiration. What are these microorganisms called?

a. Obligate aerobes
b. Obligate anaerobes
c. Macroaerophiles
d. Facultative anaerobes
e. Microaerophiles

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d. Obligate anaerobes
e. Microaerophiles

265. There are certain patterns of chemical and biological processes occurring with the drug in the body. Reduced absorption of tetracycline when it is co-administered with antacids is an example of:

a. Pharmacodynamic incompatibility
b. Functional antagonism
c. Pharmaceutical incompatibility
d. Synergism
e. Pharmacokinetic incompatibility

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b. Pharmaceutical incompatibility
c. Pharmacodynamic incompatibility
d. Functional antagonism
e. Pharmacokinetic incompatibility

267. Thiocyanatometric titration method requires secondary standard solution of potassium thiocyanate that is standardized with standard solution of:
a. Iron (II) sulfate
b. Copper (II) nitrate
c. Silver nitrate
d. Sulfuric acid
e. Hydrochloric acid

268. Thiocyanatometric titration method requires secondary standard solution of potassium thiocyanate that is standardized with standard solution of:
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b. Silver nitrate
c. Iron (II) sulfate
d. Copper (II) nitrate
e. Hydrochloric acid

269. To assess the bacterial contamination of the soil, where humans or animals are the source of contamination, the presence of sanitary indicator microorganisms must be determined. What microorganism indicates old fecal contamination of the soil?
a. Clostridium perfringens
b. Pseudomonas aeruginosa
c. Salmonella enteritidis
d. Streptococcus faecalis
e. Escherichia coli

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c. Salmonella enteritidis
d. Clostridium perfringens
e. Escherichia coli

271. To determine the qualitative content of a drug, a sample of the analyte solution was processed with 2M solution of HCl. A white precipitate, soluble in aqueous ammonia solution, was formed. This analytical effect indicates the presence of the following cations:
a. Mercury(II) cations
b. Silver(I) cations
c. Lead(II) cations
d. Tin(II) cations
e. Mercury(I) cations

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b. Silver(I) cations

c. Tin(II) cations
d. Mercury(I) cations
e. Lead(II) cations

273. To obtain exotoxins of some microorganisms, these microorganisms are inoculated into liquid nutrient medium, where microbial cultivation occurs and toxins are produced. At a certain stage it is necessary to remove the microbial cells from the medium, that is, to separate the toxins from microbes. What method should be applied in this case?

a. Autoclaving
b. Bacteria-excluding filters
c. Ultraviolet irradiation
d. Disinfectants (chloramine)
e. Boiling

274. To obtain exotoxins of some microorganisms, these microorganisms are inoculated into liquid nutrient medium, where microbial cultivation occurs and toxins are produced. At a certain stage it is necessary to remove the microbial cells from the medium, that is, to separate the toxins from microbes. What method should be applied in this case?

a. Boiling
b. Ultraviolet irradiation
c. Disinfectants (chloramine)
d. Autoclaving
e. Bacteria-excluding filters

275. To preserve valuable varietal qualities of peppermint, the optimal method of its propagation was chosen. What method is it?

a. Leaf cuttings
b. Germinated seeds
c. Plantlets
d. Parts of the tuber
e. Parts of the rhizome

276. To preserve valuable varietal qualities of peppermint, the optimal method of its propagation was chosen. What method is it?

a. Plantlets
b. Parts of the rhizome
c. Germinated seeds
d. Parts of the tuber
e. Leaf cuttings

277. To stop a fever, the patient was prescribed a centrally acting non-narcotic analgesic that, unlike the other drugs in this group, has relatively weak anti-inflammatory effect. What drug is it?

a. Paracetamol
b. Analgin (Metamizole)
c. Aspirin
d. Indomethacin
e. Nurofen (Ibuprofen)

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b. Indomethacin
c. Nurofen (Ibuprofen)
d. Analgin (Metamizole)
e. Paracetamol

279. To what electrode will the protein particle move during electrophoresis, if its isoelectric point is 4.0 and the pH of the solution is 5.0?

a. First to the anode, and then to the cathode
b. There will be no movement
c. To the anode
d. First to the cathode, and then to the anode

e. To the cathode

280. To what electrode will the protein particle move during electrophoresis, if its isoelectric point is 4.0 and the pH of the solution is 5.0?

a. To the cathode

b. To the anode

c. There will be no movement

d. First to the anode, and then to the cathode

e. First to the cathode, and then to the anode

281. Total content of chloride, bromide, and iodide ions in the investigated solution can be quantitatively determined with the following titrant:

a. Potassium dichromate solution

b. Sodium thiosulfate solution

c. Sodium nitrite solution

d. Potassium permanganate solution

e. Silver nitrate solution

282. Total content of chloride, bromide, and iodide ions in the investigated solution can be quantitatively determined with the following titrant:

a. Sodium nitrite solution

b. Sodium thiosulfate solution

c. Silver nitrate solution

d. Potassium permanganate solution

e. Potassium dichromate solution

283. Total protein in blood serum is one of metabolic indicators. What test is usually used in clinical laboratories to determine this value?

a. Sodium nitroprusside test

b. Xanthoproteic test

c. Biuret test

d. Lead acetate test

e. Ninhydrin test

284. Total protein in blood serum is one of metabolic indicators. What test is usually used in clinical laboratories to determine this value?

a. Xanthoproteic test

b. Lead acetate test

c. Biuret test

d. Sodium nitroprusside test

e. Ninhydrin test

285. Under conditions of prolonged intoxication, a significant decrease in the activity of aminoacyl-tRNA synthetases can be observed. What metabolic process is disrupted in this case?

a. DNA repair

b. Protein biosynthesis

c. RNA processing

d. Genetic recombination

e. DNA replication

286. Under conditions of prolonged intoxication, a significant decrease in the activity of aminoacyl-tRNA synthetases can be observed. What metabolic process is disrupted in this case?

a. RNA processing

b. Genetic recombination

c. DNA repair

d. DNA replication

e. Protein biosynthesis

287. Various types of immunobiological agents are used for immunoprophylaxis of infectious diseases. What type of prophylaxis involves the use of immune sera and gamma globulins?

a. Immunotropic

b. Specific active

c. General

d. Specific passive
e. Non-specific
288. Various types of immunobiological agents are used for immunoprophylaxis of infectious diseases. What type of prophylaxis involves the use of immune sera and gamma globulins?
a. Non-specific
b. Specific passive
c. Specific active
d. General
e. Immunotropic
289. Vitamins can enhance each other's effects, when taken simultaneously. What vitamin potentiates the activity of vitamin P?
a. C
b. A
c. D
d. B_1
e. B_2
290. Vitamins can enhance each other's effects, when taken simultaneously. What vitamin potentiates the activity of vitamin P?
a. C
b. D
c. B_2
d. A
e. B_1
291. Water samples were received by a bacteriological laboratory for determining their coli index. What is the coli index?
a. Number of coliphages in 1 liter of water
b. Number of enterococci in 1 liter of water
c. Number of Escherichia coli in 1 liter of water
d. Number of staphylococci in 1 liter of water
e. Number of pseudomonads in 1 liter of water
292. Water samples were received by a bacteriological laboratory for determining their coli index. What is the coli index?
a. Number of pseudomonads in 1 liter of water
b. Number of Escherichia coli in 1 liter of water
c. Number of enterococci in 1 liter of water
d. Number of coliphages in 1 liter of water
e. Number of staphylococci in 1 liter of water
293. What adsorbent is used as a suspension to relieve the intoxication caused by alkaloid poisoning?
a. Bentonite
b. Kaolin
c. Activated charcoal
d. Starch
e. Silica gel
294. What adsorbent is used as a suspension to relieve the intoxication caused by alkaloid poisoning?
a. Starch
b. Activated charcoal
c. Silica gel
d. Kaolin
e. Bentonite
295. What can be used to distinguish formic acid from acetic acid?
a. $[Ag(NH_3)_2]OH$
b. $NaOH$
c. $NaHCO_3$
d. $Br_2 (H_2O)$
e. H_2SO_4

296. What can be used to distinguish formic acid from acetic acid?
a. H_2SO_4
b. $NaHCO_3$
c. $NaOH$
d. $[Ag(NH_3)_2]OH$
e. $Br_2 (H_2O)$
297. What cardiac glycoside is obtained from lily of the valley?
a. Digitoxin
b. Adoniside
c. Celanid (Lanatoside C)
d. Corglycon
e. Strophanthin K
298. What cardiac glycoside is obtained from lily of the valley?
a. Strophanthin K
b. Digitoxin
c. Celanid (Lanatoside C)
d. Adoniside
e. Corglycon
299. What cation can be detected with Chugaiev's agent (Dimethylglyoxime)?
a. Ni^{2+}
b. Ca^{2+}
c. Mn^{2+}
d. Co^{2+}
e. K^+
300. What cation can be detected with Chugaiev's agent (Dimethylglyoxime)?
a. Ca^{2+}
b. K^+
c. Co^{2+}
d. Ni^{2+}
e. Mn^{2+}
301. What cation of the third analytical group can be precipitated using the group reagent H_2SO_4 only in the presence of ethanol (binds water and concentrates the solution)?
a. Ba^2+
b. Na^+
c. K^+
d. Ca^2+
e. Sr^2+
302. What cation of the third analytical group can be precipitated using the group reagent H_2SO_4 only in the presence of ethanol (binds water and concentrates the solution)?
a. Sr^2+
b. Ca^2+
c. Na^+
d. Ba^2+
e. K^+
303. What cations belong to the IV analytical group according to the acid-base classification?
a. Aluminum, zinc, chromium(II), tin(II), tin(IV), arsenic(III), arsenic(V)
b. Magnesium, calcium, strontium, barium
c. Silver, lead, nickel, potassium, barium, bismuth
d. Sodium, potassium, ammonium, silver, lead
e. Calcium, strontium, barium, potassium, bismuth
304. What cations belong to the IV analytical group according to the acid-base classification?
a. Aluminum, zinc, chromium(II), tin(II), tin(IV), arsenic(III), arsenic(V)
b. Silver, lead, nickel, potassium, barium, bismuth
c. Sodium, potassium, ammonium, silver, lead
d. Magnesium, calcium, strontium, barium

e. Calcium, strontium, barium, potassium, bismuth

305. What common property of cation compounds Al^{3+, Zn^{2+, Cr^{3+, Sn^{2+ unites them within the IV analytical group (acid-base classification)?

a. Insolubility of salts in water

b. Amphotericity of hydroxides

c. Solubility of hydroxides in an excess ammonia solution

d. Good solubility of some salts

e. Solubility of hydroxides in acids

306. What common property of cation compounds Al^{3+, Zn^{2+, Cr^{3+, Sn^{2+ unites them within the IV analytical group (acid-base classification)?

a. Solubility of hydroxides in an excess ammonia solution

b. Insolubility of salts in water

c. Amphotericity of hydroxides

d. Solubility of hydroxides in acids

e. Good solubility of some salts

307. What drug has a hypoglycemic effect due to stimulation of pancreatic beta cells?

a. Prednisolone

b. Glibenclamide

c. Heparin

d. Retabolil (nandrolone)

e. Adrenaline hydrochloride (epinephrine)

308. What drug has a hypoglycemic effect due to stimulation of pancreatic beta cells?

a. Retabolil (nandrolone)

b. Glibenclamide

c. Adrenaline hydrochloride (epinephrine)

d. Prednisolone

e. Heparin

309. What drug inhibits cholesterol synthesis in the liver?

a. Parmidinum

b. Colestipol

c. Atorvastatin

d. Fenofibrate

e. Probucol

310. What drug inhibits cholesterol synthesis in the liver?

a. Parmidinum

b. Probucol

c. Atorvastatin

d. Colestipol

e. Fenofibrate

311. What drug is a non-selective beta-blocker?

a. Prozerin (Neostigmine)

b. Atropine

c. Adrenaline hydrochloride

d. Metoprolol

e. Anaprilin (Propranolol)

312. What drug is a non-selective beta-blocker?

a. Prozerin (Neostigmine)

b. Metoprolol

c. Atropine

d. Adrenaline hydrochloride

e. Anaprilin (Propranolol)

313. What drug should be prescribed to a patient with bronchospasm?

a. Insulin

b. Oxytocin

c. Vicasol (Menadione)

d. Bisacodyl
e. Salbutamol
314. What drug should be prescribed to a patient with bronchospasm?
a. Vicasol (Menadione)
b. Insulin
c. Salbutamol
d. Bisacodyl
e. Oxytocin
315. What drug should not be prescribed for the treatment of arterial hypertension in a patient with gout?
a. Hydrochlorothiazide
b. Cozaar (Losartan)
c. Enalapril
d. Atenolol
e. Amlodipine
316. What drug should not be prescribed for the treatment of arterial hypertension in a patient with gout?
a. Enalapril
b. Cozaar (Losartan)
c. Amlodipine
d. Atenolol
e. Hydrochlorothiazide
317. What enzyme allows for synthesys of various genes from template RNA to DNA in genetic engineering (this enzyme catalyzes the process observed in RNA-viruses)?
a. DNA-ligase
b. Exonuclease
c. Reverse transcriptase
d. Endonuclease
e. Helicase
318. What enzyme allows for synthesys of various genes from template RNA to DNA in genetic engineering (this enzyme catalyzes the process observed in RNA-viruses)?
a. Exonuclease
b. Endonuclease
c. Helicase
d. DNA-ligase
e. Reverse transcriptase
319. What family of viruses has a unique reverse transcriptase enzyme?
a. Flaviviruses
b. Picornaviruses
c. Retroviruses
d. Reoviruses
e. Togaviruses
320. What family of viruses has a unique reverse transcriptase enzyme?
a. Togaviruses
b. Flaviviruses
c. Reoviruses
d. Retroviruses
e. Picornaviruses
321. What has an effect on the coagulating action of the coagulant ion, according to the Schulze-Hardy rule?
a. Ionic charge
b. Adsorbability
c. Polarization
d. Hydration ability
e. Ionic size

322. What has an effect on the coagulating action of the coagulant ion, according to the Schulze-Hardy rule?
a. Polarization
b. Hydration ability
c. Ionic charge
d. Adsorbability
e. Ionic size
323. What hormonal drug is used in cases of atonic uterine bleeding?
a. Prednisolone
b. Progesterone
c. Oxytocin
d. L-thyroxine
e. Insulin
324. What hormonal drug is used in cases of atonic uterine bleeding?
a. Progesterone
b. Oxytocin
c. L-thyroxine
d. Insulin
e. Prednisolone
325. What indicator is used, when sodium carbonate is being quantified in the preparation by means of acid-base titration?
a. Diphenylamine
b. Methyl orange
c. Murexide
d. Methylene blue
e. Ferroin
326. What indicator is used, when sodium carbonate is being quantified in the preparation by means of acid-base titration?
a. Diphenylamine
b. Ferroin
c. Methylene blue
d. Murexide
e. Methyl orange
327. What is the mechanism of action of beta-lactam antibiotics?
a. Inhibition of DNA gyrase
b. Inhibition of cytoplasmic \\ membrane synthesis
c. Inhibition of protein synthesis \\ in ribosomes
d. Disruption of DNA synthesis
e. Inhibition of cell wall synthesis
328. What is the mechanism of action of beta-lactam antibiotics?
a. Inhibition of cytoplasmic \\ membrane synthesis
b. Disruption of DNA synthesis
c. Inhibition of DNA gyrase
d. Inhibition of cell wall synthesis
e. Inhibition of protein synthesis \\ in ribosomes
329. What is the most common side effect of inhaled corticosteroids?
a. Osteoporosis
b. Increased body mass
c. Arterial hypertension
d. Oropharyngeal candidiasis
e. Subcapsular cataract
330. What is the most common side effect of inhaled corticosteroids?
a. Osteoporosis
b. Subcapsular cataract
c. Oropharyngeal candidiasis

d. Arterial hypertension
e. Increased body mass
331. What is the vapor pressure of a liquid at its boiling point?
a. Maximum
b. Equal to saturated vapor pressure at 273 K
c. Equal to atmospheric pressure
d. Minimum
e. Equal to saturated vapor pressure at room temperature
332. What is the vapor pressure of a liquid at its boiling point?
a. Maximum
b. Equal to saturated vapor pressure at room temperature
c. Equal to atmospheric pressure
d. Equal to saturated vapor pressure at 273 K
e. Minimum
333. What pair of compounds can be classified as functional group isomers?
a. Benzene and methylbenzene
b. Propanal and propanone
c. Butane and isobutane
d. Hexane and cyclohexane
e. Pentene-1 and pentene-2
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a. Hexane and cyclohexane
b. Propanal and propanone
c. Butane and isobutane
d. Benzene and methylbenzene
e. Pentene-1 and pentene-2
335. What parameter takes into account the deviation of the properties of a real solution from an ideal one?
a. Degree of dissociation
b. Concentration
c. Fugacity
d. Isotonic coefficient
e. Activity
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a. Isotonic coefficient
b. Degree of dissociation
c. Concentration
d. Activity
e. Fugacity
337. What pharmacological effect of diazepam allows using it in the treatment of neuroses?
a. Analgesic
b. Diuretic
c. Anxiolytic
d. Antidepressant
e. Antipyretic
338. What pharmacological effect of diazepam allows using it in the treatment of neuroses?
a. Antidepressant
b. Anxiolytic
c. Diuretic
d. Analgesic
e. Antipyretic
339. What physico-chemical method is used to determine the pH of solutions for injections?
a. Potentiometry
b. Electrolysis

c. Conductometry
d. Polarography
e. Amperometry
340. What physico-chemical method is used to determine the pH of solutions for injections?
a. Amperometry
b. Potentiometry
c. Polarography
d. Electrolysis
e. Conductometry
341. What reaction can be classified as a pseudo-first-order reaction?
a. Etherification
b. Saponification
c. Neutralization
d. Hydrolysis of sucrose
e. Combustion
342. What reaction can be classified as a pseudo-first-order reaction?
a. Saponification
b. Combustion
c. Etherification
d. Neutralization
e. Hydrolysis of sucrose
343. What reaction occurs according to the free-radical (SR) mechanism?
a. $CH_3CH_2OH+HCl$
b. $C_2H_6+Cl_2$
c. $C_6H_6+Cl_2$
d. $CH_3–CH_3+O_2$
e. $CH_2=CH_2+Cl_2$
344. What reaction occurs according to the free-radical (SR) mechanism?
a. $CH_3CH_2OH+HCl$
b. $C_6H_6+Cl_2$
c. $C_2H_6+Cl_2$
d. $CH_3–CH_3+O_2$
e. $CH_2=CH_2+Cl_2$
345. What reagent can be used to distinguish maltose (a reducing disaccharide) from sucrose (a non-reducing disaccharide)?
a. Br_2
b. $FeCl_3$
c. Tollens reagent
d. $NaOH$
e. $K_4[Fe(CN_6)]$
346. What reagent can be used to distinguish maltose (a reducing disaccharide) from sucrose (a non-reducing disaccharide)?
a. $K_4[Fe(CN_6)]$
b. Tollens reagent
c. Br_2
d. $FeCl_3$
e. $NaOH$
347. What reagents produce a reaction that follows the free radical (SR) mechanism?
a. Benzene and chlorine in the presence of $AlCl_3$
b. Ethylene and chlorine
c. Ethane and chlorine in the light
d. Ethanol and hydrogen chloride
e. Ethane and oxygen
348. What reagents produce a reaction that follows the free radical (SR) mechanism?
a. Ethane and oxygen

b. Ethane and chlorine in the light
c. Ethanol and hydrogen chloride
d. Ethylene and chlorine
e. Benzene and chlorine in the presence of $AlCl_3$
349. What reference electrode can be used in the potentiometric analysis of a medicinal substance?
a. Silver chloride electrode
b. Quinhydrone electrode
c. Zinc electrode
d. Antimony electrode
e. Glass electrode
350. What reference electrode can be used in the potentiometric analysis of a medicinal substance?
a. Glass electrode
b. Silver chloride electrode
c. Antimony electrode
d. Quinhydrone electrode
e. Zinc electrode
351. What solution is used to determine the mass-volume fraction of ammonia in a solution?
a. Iodine solution
b. Hydrochloric acid solution
c. Sulfuric acid solution
d. Sodium hydroxide solution
e. Potassium permanganate solution
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b. Hydrochloric acid solution
c. Iodine solution
d. Sulfuric acid solution
e. Potassium permanganate solution
353. What stage of chronic renal failure can be characterized by metabolic acidosis, azotemia, itching, ammonia breath, and impaired functioning of vital organs?
a. Nephrotic syndrome
b. Tubulopathy
c. Uremia
d. Acute renal failure
e. Renal colic
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a. Renal colic
b. Nephrotic syndrome
c. Uremia
d. Acute renal failure
e. Tubulopathy
355. What substance is used as an indicator in the back titration of an aqueous solution of acetic acid?
a. Diphenylcarbazone
b. Phenolphthalein
c. Murexide
d. Eriochrome black T
e. Diphenylamine
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a. Diphenylcarbazone
b. Diphenylamine
c. Murexide
d. Phenolphthalein

e. Eriochrome black T

357. What substances can be determined by means of substitution titration using the iodometric method?

a. Strong oxidizing agents

b. Unsaturated hydrocarbons

c. Saturated hydrocarbons

d. Weak reducing agents

e. Strong reducing agents

358. What substances can be determined by means of substitution titration using the iodometric method?

a. Strong reducing agents

b. Unsaturated hydrocarbons

c. Weak reducing agents

d. Strong oxidizing agents

e. Saturated hydrocarbons

359. What tissue can be characterized by permeable cells located within the root of the primary structure?

a. Endodermis

b. Mesodermis

c. Central axial cylinder

d. Pericycle

e. Exodermis

360. What tissue can be characterized by permeable cells located within the root of the primary structure?

a. Central axial cylinder

b. Endodermis

c. Mesodermis

d. Pericycle

e. Exodermis

361. What titrimetric method of analysis uses both external and internal indicators?

a. Alkalimetry

b. Permanganatometry

c. Nitritometry

d. Argentometry

e. Complexonometry

362. What titrimetric method of analysis uses both external and internal indicators?

a. Argentometry

b. Alkalimetry

c. Nitritometry

d. Permanganatometry

e. Complexonometry

363. What transformation is accompanied by an increase in entropy?

a. NH_4-NO_2-(solid) = N_2(gas) + 2H_2O(gas)

b. C_2H_2(gas) + H_2(gas) = C_2H_4(gas)

c. N_2(gas) + O_2(gas) = 2NO(gas)

d. 2H_2S (gas) + 3O_2(gas) = 2SO_2(gas) + 2H_2O(gas)

e. CaO(solid) + CO_2(gas) = CaCO_3(solid)

364. What transformation is accompanied by an increase in entropy?

a. N_2(gas) + O_2(gas) = 2NO(gas)

b. CaO(solid) + CO_2(gas) = CaCO_3(solid)

c. NH_4-NO_2-(solid) = N_2(gas) + 2H_2O(gas)

d. 2H_2S (gas) + 3O_2(gas) = 2SO_2(gas) + 2H_2O(gas)

e. C_2H_2(gas) + H_2(gas) = C_2H_4(gas)

365. What type of cardiac arrhythmia occurs as a result of simultaneous disruption of excitability and conduction functions?

a. Sinus tachycardia
b. Atrial fibrillation
c. Respiratory arrhythmia
d. Extrasystole
e. Atrioventricular block
366. What type of fruit is characteristic of Atropa belladonna?
a. Berry
b. Hesperidium
c. Capsule
d. Silique
e. Legume
367. What type of fruit is characteristic of Atropa belladonna?
a. Hesperidium
b. Capsule
c. Legume
d. Berry
e. Silique
368. What type of indicators is used in the acid-base method of quantitative analysis?
a. Chemiluminescent indicators
b. pH indicators
c. Redox indicators
d. Metallochromic indicators
e. Adsorption indicators
369. What type of indicators is used in the acid-base method of quantitative analysis?
a. Chemiluminescent indicators
b. Metallochromic indicators
c. Redox indicators
d. pH indicators
e. Adsorption indicators
370. What value determines the degree to which foreign ions can influence the potential of an ion-selective electrode?
a. Selectivity coefficient
b. Electrical conductivity \\ coefficient
c. Diffusion coefficient
d. Activity coefficient
e. Osmotic coefficient
371. What value determines the degree to which foreign ions can influence the potential of an ion-selective electrode?
a. Diffusion coefficient
b. Osmotic coefficient
c. Electrical conductivity \\ coefficient
d. Activity coefficient
e. Selectivity coefficient
372. When a galvanic cell operates under standard conditions, the chemical energy of the redox process transforms into the following type of energy:
a. Mechanical energy
b. Electromagnetic energy
c. Electrical energy
d. Thermal energy
e. Nuclear energy
373. When a galvanic cell operates under standard conditions, the chemical energy of the redox process transforms into the following type of energy:
a. Thermal energy
b. Nuclear energy
c. Electrical energy

d. Mechanical energy
e. Electromagnetic energy
374. When harvesting herbal raw material of calendula and chamomile, their inflorescences are being collected. What type of inflorescence is it?
a. Round capitulum
b. Umbel
c. Spike
d. Corymb
e. Flat capitulum
375. When harvesting herbal raw material of calendula and chamomile, their inflorescences are being collected. What type of inflorescence is it?
a. Umbel
b. Flat capitulum
c. Spike
d. Round capitulum
e. Corymb
376. Which compound of those listed below is an alicyclic hydrocarbon?
a. Cyclohexene
b. Phenanthrene
c. Anthracene
d. Benzene
e. Naphthalene
377. Which compound of those listed below is an alicyclic hydrocarbon?
a. Anthracene
b. Cyclohexene
c. Benzene
d. Phenanthrene
e. Naphthalene
378. Which of the listed plants is a bush with imparipinnate leaves, decussate leaf arrangement, and juicy black fruits?
a. Chelidonium majus
b. Sambucus nigra
c. Ledum palustre
d. Arctostaphylos uva-ursi
e. Urtica dioica
379. Which of the listed plants is a bush with imparipinnate leaves, decussate leaf arrangement, and juicy black fruits?
a. Urtica dioica
b. Chelidonium majus
c. Ledum palustre
d. Arctostaphylos uva-ursi
e. Sambucus nigra
380. Which of the listed species of medicinal plants is considered to be a weed?
a. Plantago major
b. Salvia officinalis
c. Mentha piperita
d. Convallaria majalis
e. Papaver somniferum
381. Which of the listed species of medicinal plants is considered to be a weed?
a. Mentha piperita
b. Salvia officinalis
c. Plantago major
d. Convallaria majalis
e. Papaver somniferum
382. Which one of the listed compounds belongs to conjugated dienes?

a. CH_2=CH-C(CH_3)_2-CH=CH_2
b. CH_2=CH-CH_2-CH=CH_2
c. CH_2=C=CH-CH_2-CH_3
d. CH_2=CH-CH=CH-CH_3
e. CH_2=C=CH_2
383. Which one of the listed compounds belongs to conjugated dienes?
a. CH_2=CH-CH_2-CH=CH_2
b. CH_2=CH-C(CH_3)_2-CH=CH_2
c. CH_2=C=CH-CH_2-CH_3
d. CH_2=C=CH_2
e. CH_2=CH-CH=CH-CH_3
384. You are studying the silvery downy plant of Asteraceae family, which is rich with essential oils and bitters. Harvested are apical sprouts with panicle of small round flower heads. This plant is:
a. Artemisia absinthium
b. Arctium lappa
c. Bidens tripartita
d. Calendula officinalis
e. Chamomilla recutita
385. You are studying the silvery downy plant of Asteraceae family, which is rich with essential oils and bitters. Harvested are apical sprouts with panicle of small round flower heads. This plant is:
a. Chamomilla recutita
b. Arctium lappa
c. Bidens tripartita
d. Artemisia absinthium
e. Calendula officinalis
386. В яких структурах рослинних клітин накопичується вторинний крохмаль?
a. Мітохондріях
b. Амілопластах
c. Олеопластах
d. Протеопластах
e. Вакуолях
387. В яких структурах рослинних клітин накопичується вторинний крохмаль?
a. Мітохондріях
b. Вакуолях
c. Олеопластах
d. Протеопластах
e. Амілопластах
388. Від якого показника залежть коагулююча здатність електроліту?
a. Об’єму золю
b. Густини золю
c. Концентрації електроліту
d. Заряду іона-коагулятора
e. Ступеня дисперсності золю
389. Від якого показника залежть коагулююча здатність електроліту?
a. Ступеня дисперсності золю
b. Об’єму золю
c. Густини золю
d. Заряду іона-коагулятора
e. Концентрації електроліту
390. Для представників якої родини характерні такі ознаки: плівчасті прилистки зростаються в розтруб, плід псевдомонокарпний горіхоподібний?
a. Brassicaceae
b. Rosaceae
c. Lamiaceae
d. Fabaceae

e. Polygonaceae

391. Для представників якої родини характерні такі ознаки: плівчасті прилистки зростаються в розтруб, плід псевдомонокарпний горіхоподібний?

a. Lamiaceae
b. Rosaceae
c. Fabaceae

d. Polygonaceae

e. Brassicaceae

392. Для яких систем характерна седиментація?

a. Розчинів неелектролітів

b. Суспензій

c. Розчинів електролітів
d. Розчинів ВМР
e. Золів

393. Для яких систем характерна седиментація?

a. Розчинів неелектролітів
b. Розчинів ВМР

c. Суспензій

d. Розчинів електролітів
e. Золів

394. До якого виду хроматогафії відносять метод газорідинної хроматографії?

a. Розподільної

b. Гель-хроматографії
c. Адсорбційної
d. Іоннобмінної
e. Афінної

395. До якого виду хроматогафії відносять метод газорідинної хроматографії?

a. Адсорбційної
b. Іоннобмінної
c. Афінної
d. Гель-хроматографії

e. Розподільної

396. До якого класу сполук належить Цитохром Р450?

a. Піридинопротеїн

b. Гемопротеїн

c. Флавопротеїн
d. Нуклеопротеїн
e. Ліпопротеїн

397. До якого класу сполук належить Цитохром Р450?

a. Флавопротеїн
b. Нуклеопротеїн
c. Ліпопротеїн

d. Гемопротеїн

e. Піридинопротеїн

398. За яким механізмом відбувається приєднання Br_2 до пропену?

a. S_E

b. A_E

c. S_R
d. S_N
e. A_N

399. За яким механізмом відбувається приєднання Br_2 до пропену?

a. S_R
b. S_N
c. A_N
d. S_E

e. A_E

400. Первинні та вторинні нітроалкани є таутомерними сполуками. Яка таутомерія характерна для них?

a. Аци-нітротаутомерія

b. Аміно-імінна

c. Кето-енольна

d. Азольна

e. Лактам-лактимна

401. Первинні та вторинні нітроалкани є таутомерними сполуками. Яка таутомерія характерна для них?

a. Аци-нітротаутомерія

b. Лактам-лактимна

c. Кето-енольна

d. Азольна

e. Аміно-імінна

402. У чоловіка з діагнозом: цукровий діабет виявили такі показники артеріальної крові: pH крові – 7,25, pCO2 – 37 мм рт. ст., SB – 19,5 ммоль/л, BB – 39 ммоль/л, BE – (-7) ммоль/л, кетонові тіла крові – 1,9 ммоль/л, титраційна кислотність сечі – 50 ммоль/добу. Яке порушення кислотно-основного стану у пацієнта?

a. Метаболічний ацидоз

b. Змішаний алкалоз

c. Газовий алкалоз

d. Змішаний ацидоз

e. Газовий ацидоз

403. У чоловіка з діагнозом: цукровий діабет виявили такі показники артеріальної крові: pH крові – 7,25, pCO2 – 37 мм рт. ст., SB – 19,5 ммоль/л, BB – 39 ммоль/л, BE – (-7) ммоль/л, кетонові тіла крові – 1,9 ммоль/л, титраційна кислотність сечі – 50 ммоль/добу. Яке порушення кислотно-основного стану у пацієнта?

a. Змішаний алкалоз

b. Газовий алкалоз

c. Метаболічний ацидоз

d. Газовий ацидоз

e. Змішаний ацидоз

404. Як називаються реакції в яких багаторазово повторюється цикл елементарних актів за участю активних частинок?

a. Ланцюгові

b. Послідовні

c. Пов'язані

d. Паралельні

e. Фотохімічні

405. Як називаються реакції в яких багаторазово повторюється цикл елементарних актів за участю активних частинок?

a. Паралельні

b. Пов'язані

c. Фотохімічні

d. Ланцюгові

e. Послідовні

406. Який вид лікарських речовин належить до групи бур'янів?

a. Plantago major

b. Papaver somniferum

c. Salvia officinalis

d. Convallaria majalis

e. Mentha piperita

407. Який вид лікарських речовин належить до групи бур'янів?

a. Salvia officinalis

b. Papaver somniferum
c. Mentha piperita
d. Convallaria majalis
e. Plantago major
408. Який збудник викликає захворювання сифіліс?
a. Corynebacterium diphtheriae
b. Mycobacterium tuberculosis
c. Salmonella typhi
d. Borrelia recurrentis
e. Treponema pallidum
409. Який збудник викликає захворювання сифіліс?
a. Mycobacterium tuberculosis
b. Corynebacterium diphtheriae
c. Borrelia recurrentis
d. Treponema pallidum
e. Salmonella typhi
410. Який механізм передачі захворювання епідемічного висипного тифу?
a. Парентеральний
b. Фекально-оральний
c. Трансмісивний
d. Повітряно-крапельний
e. Вертикальний
411. Який механізм передачі захворювання епідемічного висипного тифу?
a. Повітряно-крапельний
b. Парентеральний
c. Вертикальний
d. Фекально-оральний
e. Трансмісивний
412. Який механізм інгібіторної дії неостигміну (прозерину)?
a. Ковалентне зв'язування з субстратом ферменту
b. Ковалентне зв’язування поза активним центром фермента
c. Окиснення іона заліза в активном у центрі фермента
d. Денатурація фермента
e. Конкуренція з ацетилхоліном за активний центр фермента
413. Який механізм інгібіторної дії неостигміну (прозерину)?
a. Окиснення іона заліза в активном у центрі фермента
b. Конкуренція з ацетилхоліном за активний центр фермента
c. Денатурація фермента
d. Ковалентне зв’язування поза активним центром фермента
e. Ковалентне зв'язування з субстратом ферменту
414. Який основний метод лабораторної діагностики ВІЛ інфекції?
a. Реакція коаглютинації
b. Реакція пасивної гемаглютинації
c. Імуноферментний аналіз
d. Радіоімунний аналіз
e. Імунофлуоресцентний
415. Який основний метод лабораторної діагностики ВІЛ інфекції?
a. Реакція коаглютинації
b. Реакція пасивної гемаглютинації
c. Імунофлуоресцентний
d. Імуноферментний аналіз
e. Радіоімунний аналіз
416. Який патогенез розвитку цукрового діабету 1-го типу?
a. Гіперпродукція глюкагону
b. Гіперпродукція кортизолу

c. Інсулінорезистентність жирової тканини
d. Гіперпродукція соматотропіну
e. Аутоімунне ушкодження В-клітин
417. Який патогенез розвитку цукрового діабету 1-го типу?
a. Гіперпродукція кортизолу
b. Гіперпродукція глюкагону
c. Гіперпродукція соматотропіну
d. Аутоімунне ушкодження В-клітин
e. Інсулінорезистентність жирової тканини
418. Який препарат належить до групи антихолінестеразних засобів?
a. Дипіроксим
b. Прозерин (неостигмін)
c. Ацетилхолін
d. Дитилін (суксаметонію хлорид)
e. Ізонітрозин
419. Який препарат належить до групи антихолінестеразних засобів?
a. Дипіроксим
b. Ацетилхолін
c. Дитилін (суксаметонію хлорид)
d. Ізонітрозин
e. Прозерин (неостигмін)
420. Який препарат належить до групи блокаторів Н2 – гістамінових рецепторів?
a. Гастроцепін
b. Альмагель
c. Фамотидин
d. Омепразол
e. Алохол
421. Який препарат належить до групи блокаторів Н2 – гістамінових рецепторів?
a. Омепразол
b. Альмагель
c. Фамотидин
d. Алохол
e. Гастроцепін
422. Який препарат із групи психотропних засобів блокує дофамінові рецептори?
a. Амітриптилін
b. Анальгін (метамізол натрію)
c. Аміназин (хлорпромазин)
d. Кофеїн-бензоат натрію
e. Діазепам
423. Який препарат із групи психотропних засобів блокує дофамінові рецептори?
a. Анальгін (метамізол натрію)
b. Діазепам
c. Амітриптилін
d. Кофеїн-бензоат натрію
e. Аміназин (хлорпромазин)
424. Який пігмент утворюється в реакції окиснення гему?
a. Білівердин
b. Стеркобіліноген
c. Хлорофіл
d. Каротин
e. Уробіліноген
425. Який пігмент утворюється в реакції окиснення гему?
a. Каротин
b. Білівердин
c. Уробіліноген

d. Хлорофіл
e. Стеркобіліноген

426. Який спосіб титрування використовують, якщо до розчину досліджуваної речовини додають точно виміряний надлишок допоміжного титранта?
a. Титрування за залишком
b. Замісникове титрування
c. Пряме титрування
d. Неводне титрування
e. Будь-яке титрування

427. Який спосіб титрування використовують, якщо до розчину досліджуваної речовини додають точно виміряний надлишок допоміжного титранта?
a. Пряме титрування
b. Титрування за залишком
c. Будь-яке титрування
d. Неводне титрування
e. Замісникове титрування

428. Який із нижченаведених антигіпертензивних препаратів призначається пацієнтам із бронхіальною астмою?
a. Анаприлін
b. Надолол
c. Лабеталол
d. Метопролол
e. Фармадипін

429. Який із нижченаведених антигіпертензивних препаратів призначається пацієнтам із бронхіальною астмою?
a. Лабеталол
b. Фармадипін
c. Надолол
d. Метопролол
e. Анаприлін

430. Який із патогенетичних факторів відіграє провідну роль у розвитку набряків у пацієнтів після тривалого голодування?
a. Підвищення онкотичного тиску в тканинах
b. Зниження онкотичного тиску крові
c. Зниження осмотичного тиску крові
d. Підвищення осмотичного тиску інтерстиціальної рідини
e. Зниження гідростатичного тиску крові

431. Який із патогенетичних факторів відіграє провідну роль у розвитку набряків у пацієнтів після тривалого голодування?
a. Підвищення онкотичного тиску в тканинах
b. Підвищення осмотичного тиску інтерстиціальної рідини
c. Зниження осмотичного тиску крові
d. Зниження онкотичного тиску крові
e. Зниження гідростатичного тиску крові

432. Яким методом здійснюють кількісне визначення вісмуту в препараті?
a. Йодометрії
b. Меркуриметрії
c. Перманганатометрії
d. Комплексонометрії
e. Аргентометрії

433. Яким методом здійснюють кількісне визначення вісмуту в препараті?
a. Перманганатометрії
b. Аргентометрії
c. Комплексонометрії
d. Меркуриметрії

е. Йодометрії