1. A man got an injection of curarelike substance causing the relaxation of all skeletal muscles. What is its mechanism of action?

A. Block of cholinergic receptors of postsynaptic membrane
B. Disturbance of acetylcholine synthesis
C. Block of Ca^{2+}-channels of presynaptic membrane
D. Disturbance of cholinesterase synthesis
E. Disturbance of acetylcholine secretion

2. As a result of rocking a passenger has developed the sea sickness. The reflexes causing the development of this sickness are provoked by the excitement of the following receptors:

A. Vestibular
B. Visual
C. Tactile
D. Gustatory
E. Olfactory

3. Production of primary urine in kidneys is induced by filtration in renal corpuscles. What components of blood plasma are absent in the primary urine?

A. Proteins
B. Amino acids
C. Glucose
D. Urea
E. Ions

4. Microscopic examination of primary cortex of a root in its absorption zone revealed that it consisted mainly of multilayer loose living parenchyma with amyloid granules. It is called:

A. Mesoderm
B. Endoderm
C. Exoderm
D. Collenchyme
E. Phellogene

5. Morphological analysis of an inflorescence revealed that its flowers were attached to the same axis at different levels but due to the various length of peduncle they grew in the same plane. Such inflorescence is called:

A. *Corymb*
B. *Anthodium*
C. *Glomus*
D. *Umbel*
E. *Spike*

6. A patient has been administered a competitive inhibitor of cholinesterase. Name it:

A. Proserin
B. Aspirin
C. Sodium diclophenac
D. Indometacin
E. Allopurinol

7. A 30 year-old patient suffering from pulmonary tuberculosis has been prescribed isoniazid. Continuous taking of this drug may lead to the deficiency of the following vitamin:

A. Pyridoxine
B. Tocopherol
C. Cobalamin
D. Ergocalciferol
E. Retinol

8. Examination of the lower limbs of a 40-year-old patient with coronary artery disease and vascular disease of lower limbs (obliterating endarteritis) revealed skin pallor and dystrophy, local temperature decrease, sense shock, pain. The patient is likely to have the following disorder of the peripheral blood circulation:

A. Obstruction ischemia
B. Compression ischemia
C. Angiospastic ischemia
D. Venous hyperaemia
E. Arterial hyperaemia

9. A 45-year-old patient complains of nausea, foul-smelling eructation, periodic vomiting, meteorism. Fractional analysis of the secretory function of stomach revealed the absence of hydrochloric acids and some enzymes. The patient has the following pathology of the gastrointestinal tract:

A. Achylia
B. Hypochlorhydria
C. Hypoacidic state
D. Achlorhydria
E. Anacidic state

10. Particles of dispersed phase of an emulsion are deformed and look as polyhedrons. What emulsion is it?

A. High-concentrated
B. Concentrated
C. Diluted
D. Oil-in water
E. Water-in-oil

11. Oxidizing properties of free halogens increase in the following group:

A. I_2, Br_2, Cl_2, F_2
B. F_2, Cl_2, Br_2, I_2
C. Cl_2, F_2, I_2, Br_2
D. Br_2, F_2, I_2, Cl_2
E. I_2, Cl_2, Br_2, F_2

12. Dimethyl glyoxime entered into reaction with a solution that contained cations of the IV analytical group (acid-base classification). The deposition turned crimson. What cation caused this analytical effect?

A. Nickel cation (II)
B. Mercury cation (II)
C. Copper cation (II)
D. Cadmium cation (II)
E. Cobalt cation (II)

13. A child with evident hypotrophy got edemata on his lower extremities, ascites. What is the main mechanism of pathogenesis of cachectic edema?

A. Drop of oncotic pressure of blood plasma
B. Rise of hydrostatic blood pressure
C. Rise of oncotic pressure of intercellular fluid
D. Increased permeability of vascular wall
E. Disturbance of lymph outflow

14. Silver nitrate is used in ophthalmology as an antibacterial and anti-inflammatory agent. $AgNO_3$ can be produced as a result of interaction between the following substances:

A. $Ag + HNO_3$
B. $AgCl + NH_4NO_3$
C. $Ag + KNO_3$
D. $Ag_2O + KNO_3$
E. $AgCl + NaNO_3$

15. Solution of Trilon B is the titrant in chelatometry. It makes complex compounds with metal cations irrespective of their valency with the following proportion:

A. 1:1
B. 1:3
C. 1:2
D. 2:1
E. 3:1

16. High-grade deficit of the ascorbic acid causes development of scorbutus. This pathology develops due to the disturbed synthesis of the following connective tissue protein:

A. Collagen
B. Prothrombin
C. Fibrinogen
D. Albumin
E. Ceruloplasmin

17. It is known that infectious type B hepatitis is a systemic disease caused by the type B hepatitis virus and characterized by a predominant liver affection. Choose from the below given list the drugs for the etiotropic therapy of this infection:

A. Acyclovir
B. Penicillin
C. Tetracycline
D. Sulfanilamides
E. Fluoroquinolones

18. In compliance with the requirements of National Pharmacopoeia of Ukraine the following drugs should be sterile: eye drops, parenteral drugs as well as substances and additives used in their production. What method is applied for control of their sterility?

A. Membrane filtration
B. Filter paper discs
C. Serial dilution
D. Agar diffusion
E. Two-phase fermentative

19. What substance can act as both oxidant and reducer in oxidation-reduction reactions?

A. SO_2
B. SO_3
C. CO_2
D. PbO_2
E. CrO_3

20. Heparin is the direct-acting anticoagulant that reduces blood coagulation and prevents thrombosis. Its action is based upon the following phenomenon:

A. Protective power of colloids
B. Syneresis
C. Thixotropy
D. Micelle formation
E. Dialysis

21. Examination of a patient revealed an increase in low-density lipoprotein concentration in blood serum. The patient can be expected to have the following disease:

A. Atherosclerosis
B. Pneumonia
C. Glomerulonephritis
D. Acute pancreatitis
E. Gastritis

22. Nitrogen (I) oxide (N_2O) is applied for inhalation narcosis. It is obtained by heating of:

A. NH_4NO_3
B. NH_3
C. $Cu(NO_3)_2$
D. NH_4OH
E. $NaNO_3$

23. After examination a patient has been diagnosed with alkaptonuria. This pathology is caused by the deficit of the following enzyme:

A. Homogentisic acid oxidase
B. Diamine oxidase
C. Acetylcholinesterase
D. Thyroxin hydroxylase
E. Monoamine oxidase

24. Plant pathogenic microorganisms relate to various groups. Which of them causes diseases of medicinal plants most often?

A. Fungi
B. Viruses
C. Bacteria
D. Actinomycetes
E. Micoplasma

25. Calcium hydrogen sulphide hexahydrate is often used in the cosmetological practice. Specify the the formula of his salt:

A. $Ca(HS)_2 \cdot 6H_2O$
B. $CaS \cdot 6H_2O$
C. $CaSO_3 \cdot 6H_2O$
D. $Ca(HSO_3)2 \cdot 6H_2O$
E. $CaSO_4 \cdot 6H_2O$

26. Iodometric determination of formaldehyde in formaline can be done by the back titration. Iodine surplus is titrated with the standard solution of:

A. Sodium thiosulphate
B. Sodium nitrate
C. Sodium sulphate
D. Sodium carbonate
E. Sodium phosphate

27. As a result of spine injury a female patient has no voluntary movements of her lower limbs. This disorder is called:

A. Paraplegia
B. Tetraplegia
C. Monoplegia
D. Hemiplegia
E. Paraparesis

28. In course of an experiment the experimenters are stimulating a sympathetic nerve responsible for heart innervation. What changes in cardiac activity can be expected?

A. Increase in heart rate and force
B. Decrease in heart force
C. Decrease in heart rate
D. Deceleration of excitement conduction
E. Increase in heart rate

29. Sodium arsenate solution can be distinguished from the arsenite solution by means of the following reagent:

A. Magnesia mixture
B. Potassium sulphate
C. Potassium nitrate
D. Sodium chloride
E. Sodium fluoride

30. Passive and active transport of substances is realized through the cell membrane. Name the type of active transport by which the membrane changes its structure:

A. Endocytosis
B. Osmosis
C. Filtration
D. Diffusion
E. Facilitated diffusion

31. Disperse systems are widely used in the pharmaceutical practice. The evidence of colloidal state is the passing of light through the system. In this case the beam of light:

A. Is diffused in form of light cone
B. Is reflected
C. Is adsorbed
D. Is refracted
E. Penetrates into the particle

32. Qualitative determination of the following compound is accompanied by blue stain of the ether layer:

A. H_2O_2
B. Cl_2
C. Na_2HPO_4
D. $MnSO_4$
E. $FeSO_4$

33. Corolla of the origanum flower is zygomorphic, sympetalous and consists of

a tube and two limbs. The upper limb is bilobate and the lower is trilobate. Such corolla is called:

A. Bilabiate
B. Unilabiate
C. Lingulate
D. Thimble-like
E. -

34. Water-soluble vitamins take coenzyme form in an organism. Thiamine diphosphate is the coenzyme of the following vitamin:

A. B_1
B. B_2
C. C
D. B_6
E. B_{12}

35. Biochemical function of water-soluble vitamins depends on their ability to turn into the coenzymatic forms. Specify the coenzymatic form of the vitamin B_2 (riboflavin):

A. FMN (flavin mononucleotide)
B. NAD+ (nicotinamide adenine dinucleotide)
C. TMP (thiamine monophosphate)
D. TDP (thiamine diphosphate)
E. PALP (pyridoxal phosphate)

36. Enzymes (biological catalysts) are used as pharmacologic preparations. What is the mechanism of enzyme action in the biochemical reactions?

A. They reduce the energy of reaction activation
B. They increase the energy of reaction activation
C. They inhibit the reaction process
D. They change the constant of the reaction rate
E. They change the reaction order

37. Filter paper impregnated with solution of cobalt (II) nitrate and a solution under examination makes blue ash when burned down. This is the evidence of presence of the following ions:

A. Al^{3+}
B. Cr^{3+}
C. Ni^{2+}
D. Sb^{3+}
E. Zn^{2+}

38. A solution under examination was added to the solution of $FeSO_4$ in presence of concentrated H_2SO_4. Formation of a brown ring indicates presence of:

A. Nitrate ions
B. Acetate ions
C. Carbonate ions
D. Oxalate ions
E. Phosphate ions

39. A patient complains of pain behind the breastbone on the left, perspiration and palpitation. Which of the following enzymes should be found in blood in order to confirm the diagnosis of myocardium infarction?

A. AspAT, CPK, LDH-1
B. AlAT, aldolase, LDH-4
C. Amylase, alkaline phosphatase, AlAT
D. Acid phosphatase, LDH-5, LDH-4
E. α-fetoprotein, aldolase, CPK

40. For tuberculosis prevention the newborns got an injection of a vaccine. What vaccine was used?

A. BCG
B. Mantoux
C. DTaP vaccine
D. Anatoxin
E. Oral polio vaccine (Sabin vaccine)

41. Kinetic methods are used for determination of drug stability. What is the order of reaction if its rate constant equals to c^{-1}?

A. First
B. Zero
C. Fractional
D. Second
E. Third

42. Examination of a root revealed a tissue that has root fibrils and doesn't have stomata and cuticle. What tissue is it?

A. Epiblema
B. Epiderm
C. Periderm
D. Endoderm
E. Exoderm

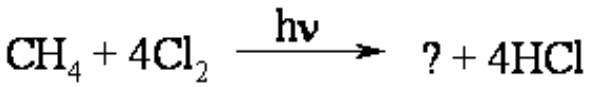
43. During identification of a perennial herb of *Ranunculaceae* family it was found to have: apical flowers of regular form up to 6 cm in diameter; 5 downy violet-and-green calyx lobes of irregular serrate form; up to 20 bright yellow glossy petals without nectarostigma. What plant is it?

A. *Adonis vernalis*
B. *Helleborus purpurascens*
C. *Ranunculus acris*
D. *Delphinium elatum*
E. *Aconitum napellus*

44. A section of beet root has several layers of cambium that form additional conducting bundles. What is the structure of the given root?

A. Secondary, polycambial
B. Secondary monocambial
C. Primary, polycambial
D. Primary, monocambial
E. Transitional, monocambial

45. What is the final product of methane chlorination?



A. Tetrachloromethane
B. Chloroform
C. Chloroethanol
D. Ethane
E. Chloromethane

46. A solution contaning anions of the second analytical group has been blended with the solution of argentum nitrate. This resulted in formation of black precipitate insoluble in the ammonia solution and soluble in the diluted nitric acid at heating. What anions are present in the solution?

A. Sulphide ions
B. Iodide ions
C. Chloride ions
D. Bromide ions
E. Arsenite ions

47. 0,1 M solution of potassium permanganate is used as a titrant in permanganatometry. The solution is prepared like the secondary standard solution and standardized according to:

A. Ammonia oxide
B. Potassium dichromate
C. Sodium chloride
D. Sodium carbonate
E. Calcium oxide

48. A patient has bradycardia, moderate hypotension, decrease of basal metabolism, edemata. What disorder can induce such syndrome?

A. Thyroid hypofunction
B. Parathyroid hypofunction
C. Thyroid hyperfunction
D. Parathyroid hyperfunction
E. Adrenal hypofunction

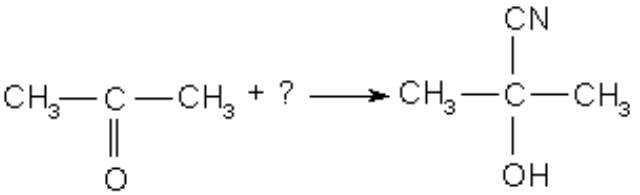
49. In compliance with the requirements of WHO and Pharmacopoeia of Ukraine the number of microorganisms in 1 ml of ear drops shoud not exceed the following number of microbial cells (bacteria and fungi):

A. 100
B. 10
C. 1000
D. 10 000
E. 100 000

50. Drug quality is estimated by a number of factors including the "microbiologic purity". What drugs are allowed to include a greater number of saprophytic bacteria as compared to other drug forms?

A. Tinctures
B. Aerosols
C. Suppositories
D. Eye drops
E. Injection solutions

51. Choose the reagent that can be used for acetone cyanohydrin production:

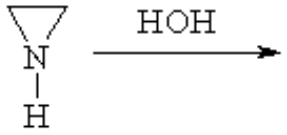


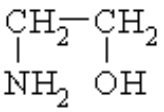
A. HCN
B. $H_2N–OH$
C. $H_2N–NH_2$
D. $H_2N-NH-C_6H_5$
E. H_2N-CH_3

52. Which reagent allows to distinguish propine $(CH_3-C\equiv CH)$ from propene $(CH_3-CH=CH_2)$?

A. $[Ag(NH_3)_2]OH$
B. Br_2
C. HCl
D. $Cu(OH)_2$
E. Cl_2

53. What compound is produced as a result of reaction:



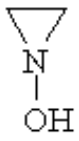


A.

B. $CH_3\text{-}CH_2\text{-}NH\text{-}OH$

C. $CH_3\text{-}NH\text{-}CH_2\text{-}OH$

D. 

E. 

54. Stable contraction of myofibrilla of muscle fibers takes place due to accumulation of the following ions in the cytoplasm:

A. Calcium
B. Potassium
C. Sodium
D. Magnesium
E. Hydrogen

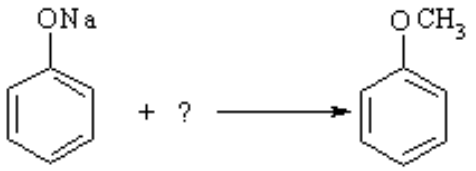
55. A 45-year-old woman has frequent uterine haemorrhages, she presents with general weakness, dyspnea, tachycardia, cardiac pain. In blood: erythrocytes - $3 \cdot 10^9$/l, haemoglobin - 70 g/l, colour index - 0,7. The smear contains mostly hypochromic erythrocytes, microcytes. Specify the type of anaemia accrding to its mechanism of development:

A. Iron-deficiency
B. B_{12}-folate-deficiency
C. Haemolytic
D. Minkowsky-Shauffard disease
E. Protein-deficiency

56. Single-oxygenase system of membranes of endoplasmic hepatocyte reticulum includes flavoprotein NADF-cytochrome, R-450-reductase and R-450-cytochrome. It stimulates inactivation of biologically active substances or neutralization of toxic compounds by catalyzing the reaction of:

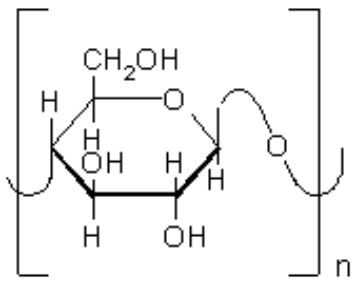
A. Hydroxylation
B. Oxidation
C. Methylation
D. Acetylation
E. Reduction

57. For production of phenol ether it is necessary to cause reaction of sodium phenoxide with:



A. CH_3Cl
B. CH_3OH
C. CH_4
D. CH_3NH_2
E. $CH_3C \equiv \text{N}$

58. Polysaccharide cellulose consists of the remains of the following monosaccharide:



A. β-D-glucopyranose
B. α-D-glucopyranose
C. β-D-fructopyranose
D. α-D-fructofuranose
E. β-D-glucofuranose

59. A higher nonvascular plant has distinct alternation of dominant sexual (gametophyte) and reduced asexual (sporophyte) generations. This indicates that the plant belongs to the following division:

A. Bryophyta
B. Lycopsida
C. Equisetophyta
D. Pteridophyta
E. Gymnospermae

60. It is known that a seed without endosperm and perisperm has its nutrients accumulated in:

A. Embryo cotyledons
B. Embryo root
C. Embryo stalk
D. Gemma
E. Seed coat

61. Specify the standardized solutions used for direct and back titration of reducing agents in the iodometric method:

A. I_2, $Na_2S_2O_3$
B. $K_2Cr_2O_7$, $Na_2S_2O_3$
C. I_2, KI
D. $KMnO_4$, KI
E. $K_2Cr_2O_7$, I_2

62. Determination of medications containing cations of magnesium and calcium is done by trilonometric titration. What type of chemical reaction takes place in this case?

A. Complexation
B. Oxidation-reduction
C. Electrophylic substitution
D. Alkylation
E. Precipitation

63. During the qualitative analysis under the influence of group reagent $NaOH$ upon the aluminium ions the following substance is produced:

A. Sodium hexahydroxoaluminate
B. Aluminium hydroxide
C. Sodium metaaluminate
D. Basic aluminium salts
E. Aluminium oxide

64. Presence of arsenic in the raw material used in pharmaceutical production can be detected by means of Marsh test. During the test tha compond of arsenic with hydrogen is produced. What is the oxidation number of arsenic in this compound?

A. –3
B. +3
C. +5
D. –5
E. +1

65. Most technological processes in pharmaceutics run in heterogenous systems. How many phases has an eutectic composition at the eutectic temperature in the two-component system?

A. 3
B. 2
C. 5
D. 4
E. 1

66. Aqueous-alcocholic mixtures are widely used in the medical and pharmaceutical practice. They relate to the azeotropes. What is the peculiarity of azeotropic mixtures?

A. They produce a vapor of the same composition as the mixture
B. They don't mix together
C. They interact with each other
D. They don't interact with each other
E. They mix together at a critical temperature

67. Iron (II) sulfate is a part of drugs used in treatment of iron deficiency anemia. $FeSO_4$ enters into reaction with one of the following compounds:

A. $KMnO_4$
B. HCl
C. CO_2
D. $FeCl_2$
E. $NaCl$

68. Micelle solutions of surfactants are applied in pharmaceutical production as stabilizers and solubilizers. What solution of colloidal surfactants will have the greatest value of critical concentration of micelle formation?

A. $C_9H_{19}SO_3Na$
B. $C_{14}H_{29}SO_3Na$
C. $C_{16}H_{33}SO_3Na$
D. $C_{12}H_{25}SO_3Na$
E. $C_{10}H_{21}SO_3Na$

69. During analysis of cations of the IV analytic group Zn cations can be detected under certain conditions with the following reagent:

A. Dithizone
B. Ammonia solution
C. Alkali
D. Alkali metal carbonates
E. Dimethylglyoxime

70. Choose the most stable complex ion on the ground of values of instability constants:

A. $[Fe(CN)_6]^{3-}$ **Кн** = $1 \cdot 10^{-31}$
B. $[Ag(CN)_2]^{-}$ **Кн** = $1 \cdot 10^{-21}$
C. $[Ag(NH_3)_2]^{+}$ **Кн** = $5,89 \cdot 10^{-8}$
D. $[Ni(CN)_4]^{2-}$ **Кн** = $1 \cdot 10^{-22}$
E. $[Co(NH_3)_6]^{2+}$ **Кн** = $4,07 \cdot 10^{-5}$

71. Presence of which ion of d-elements in the solutions can be detected by means of $K_4[Fe(CN)_6]$?

A. Fe^{3+}
B. Fe^{2+}
C. Zn^{2+}
D. Cr^{3+}
E. Cu^{2+}

72. What gas is produced as a result of interaction of concentrated nitric acid with sulphur?

A. NO_2
B. H_2
C. N_2
D. N_2O
E. NH_3

73. Early pregnancy test involves analysis of a woman's urine. Pregnancy is ascertained by presence of the following hormone:

A. Chorionic gonadotropin
B. Estriol
C. Aldosterone
D. Testosterone
E. Progesterone

74. While detecting Co^{2+} ions in presence of Fe^{3+} the following ions should be added to the solution in order to mask Fe^{3+} ions:

A. Fluoride ions
B. Chloride ions
C. Bromide ions
D. Nitrite ions
E. Sulphate ions

75. This substance can be produced from the calcium carbide. It discolours bromine water and makes metal derivatives. What compound is it?

A. Acetylene
B. Ethylene
C. Ethane
D. Orenol
E. Aniline

76. The compound C_7H_8O relates to the derivatives of aromatic hydrocarbons, doesn't stain with $FeCl_3$, the product of its oxidation is benzoic acid. What compound is it?

A. Benzyl alcohol
B. Methylphenyl alcohol
C. o-cresol
D. m-cresol
E. p-cresol

77. During examination of a plant cell under the electron microscope some structures in form of a stack of flattened membrane cisterns and vesicles were found. What organelles are these?

A. Golgi apparatus
B. Endoplasmic reticulum
C. Plastids
D. Mitochondrions
E. Microbodies

78. The particles of dispersed phase of a ready drug emulsion are sized 10^{-6} m. The given drug form relates to the following type of disperse systems (according to the dispersion degree classification):

A. Microheterogeneous system
B. Heterogeneous system
C. Coarse-dispersion system
D. Colloidal disperse system
E. Ultramicroheterogeneous system

79. In oxidation-reduction reactions potassium permanganate $KMnO_4$ acts only as an oxidizer. When the reaction takes place in the acidic medium, the crimson solution becomes discoloured. Specify the product of MnO_4^--ion reduction in the acidic medium:

A. Mn^{2+}
B. MnO_2
C. MnO_4^{2-}
D. $[Mn(OH)_2]$
E. $[Mn(OH)_4]$

80. Under certain conditions high-molecular substances make gellies that are widely used in drug production. What process takes place during jelly ageing?

A. Syneresis
B. Thixotropy
C. Swelling
D. Solvatation
E. Diffusion

81. Decarboxylation of the amino acid histidine results in formation of histamine in the cells. Neutralization of this biogenic amine takes place due to the following enzyme:

A. Diaminooxidase (DAO)
B. Monoaminooxidase (MAO)
C. Catalase
D. Aminotransferase
E. Aminopeptidase

82. Chlorophyll, the green pigment of plants, is a chelate compound. Specify the chelating ion in the chlorophyll:

A. Mg^{2+}
B. Fe^{3+}
C. Mn^{2+}
D. Fe^{2+}
E. Ni^{2+}

83. A flower has the androecium consisting of two long and two short stamens. Therefore the flower's androecium is:

A. Didynamous
B. Tetradynamous
C. Diadelphous
D. Tetradelphous
E. Polyadelphous

84. Potassium dichromate $K_2Cr_2O_7$ is applied as oxidant in acidic medium. What is the product of reduction of dichromate-ion $Cr_2O_7^{2-}$ under these conditions?

A. Cr^{3+}
B. $Cr(OH)_3$
C. $Cr(OH)_2$
D. $[Cr(OH)_6]^{3-}$
E. Cr_2O_3

85. In course of an experiment a dog has been injected a preparation that reduces secretory and motor activity of stomach. What preparation is it?

A. Atropine
B. Histamine
C. Secretin
D. Acetylcholine
E. Gastrin

86. What ion mechanism is responsible for the development of depolarization phase of action potential?

A. Sodium influx into the cell
B. Sodium outflux
C. Potassium influx into the cell
D. Potassium outflux
E. Calcium influx into the cell

87. Study of an isolated heart shows that it keeps on contracting even after removal from the body. This effect owes to the following peculiarity of the myocardium:

A. Automatism
B. Excitability
C. Conductivity
D. Contractility
E. Adiaphoria

88. What product is obtained in Wagner reaction during oxidation of alkenes with potassium permanganate in the aqueous medium?

A. Glycol
B. Ketone
C. Carboxylic acid
D. Aldehyde
E. Epoxide

89. Study of the antibioticogram of the pure salmonella culture revealed multiple antibiotic resistance. What factor might have caused this effect?

A. R-plasmids
B. Chromosomal mutations
C. F-plasmids
D. Temperate phages
E. Transposons

90. After a 5-year-old child has been brought home from the kindergarten he presented with weakness, headache, body temperature rise up to $37,5^oC$. What period of disease develompent is the case?

A. Prodromal
B. Latent
C. Incubative
D. Recovery
E. Fastigium

91. It is required to determine the amount of sodium salicylate in a solution. What titrimetric method can be applied for the quantitative determination of aromatic compounds?

A. Bromometry
B. Mercurimetry
C. Cerimetry
D. Argentometry
E. Chelatometry

92. When copper (II) hydroxide enters into reaction with alkali, complex compounds are produced. What is the coordination number of copper in such compounds?

A. 4
B. 5
C. 6
D. 3
E. 2

93. Interaction of aniline with excess of bromine water resulted in formation of white precipitate. What substance was produced?

A. 2,4,6-tribromaniline
B. 2,4-dibromaniline
C. 2,6-dibromaniline
D. 2-bromaniline
E. 4-bromaniline

94. For treatment of the psychosis a patient was administered the neuroleptic aminazine. The main way of its biotransformation in the organism is induction of microsomal oxidation. Specify the principal component of this system:

A. Cytochrome R-450
B. Cytochrome C
C. Cytochrome oxidase
D. NAD-dehydrogenase
E. CoQ-reductase

95. Every year during the plant blossoming a female patient develops acute catarrhal inflammation of conjunctiva and nasal mucosa that is the clinical presentation of an allergy. These symptoms relate to the following type of allergic reactions:

A. Anaphylactic
B. Cytotoxic
C. Immune complex
D. Cell-mediated
E. Cellular dysfunction

96. A patient is suspected to have the typhoid fever. What method of laboratory diagnostics would be the most appropriate for confirmation of this diagnosis in the first week of disease?

A. Hemoculture identification
B. Urine culture identification
C. Myeloculture identification
D. Biliculture identification
E. Coproculture identification

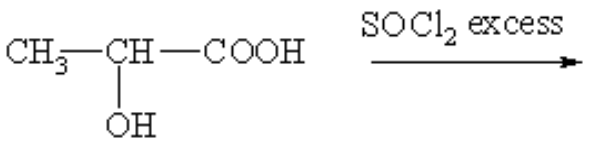
97. Inoculation of hen's embryos is the main method of detection of influenza virus. In order to neutralize associated bacterial flora in the material under examination (nasopharyngeal lavage) it is necessary to add beforehand:

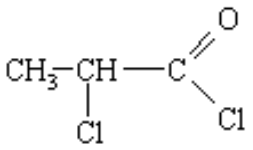
A. Antibiotics
B. Eubiotics
C. Fluorescent serum
D. Leukocytic interferon
E. Ant-influenza gamma globulin

98. Choose the initial compound for one-stage synthesis of phthalic acid:

A. o-xylol
B. Salicylic acid
C. 1,2-dichlorobenzene
D. 2-chlorobenzoic acid
E. m-xylol

99. Interaction of lactic acid with $SOCl_2$ excess will result in production of the following compound:



A.


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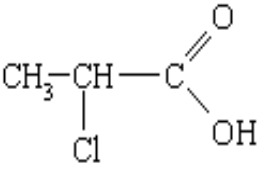

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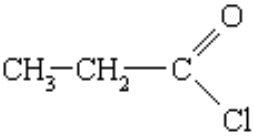

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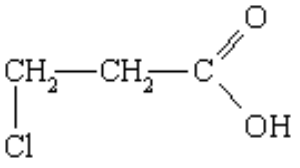

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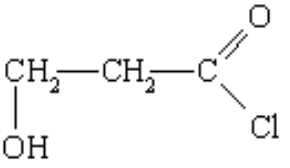


100. A group of alpinists climbing to the top had their blood tested. The test revealed erythrocytosis and increase in hemoglobin rate. What type of hypoxia caused the stimulation of erythropoiesis in the bone marrow?

A. Hypoxic
B. Combined
C. Hemic
D. Circulatory
E. Tissue

101. A 42-year-old patient suffering from

chronic calculous cholecystitis complains of acute pain in the right subcostal area, itching and skin icteritiousness, multiple petechial haemorrhages, saponified and light-coloured feces (steatorrhea). What type of icterus is it?

A. Mechanic
B. Hemolytic
C. Parenchymatous
D. Cythemolytic
E. Hepatocellular

102. Microscopic examination of leaf serration revealed secretory structures secreting some liquid. What are these structures called?

A. Hydatodes
B. Nectaries
C. Stomata
D. Glandules
E. Osmophores

103. In pharmaceutical synthesis both simple and complex reactions are applied. Specify the order of the simple reaction of type $2A + B = 3D$:

A. 3
B. 2
C. 1
D. 0
E. 0,5

104. Choose a reduction-oxidation method for the quantitative determination of iron (II) salts in a solution that contains hydrochloric acid:

A. Dichromatometry
B. Iodometry
C. Permanganatometry
D. Nitritometry
E. Ascorbinometry

105. In order to prevent adipose degeneration of liver after the viral hepatitis a patient should be administered lipotropins. Name one of them:

A. Choline
B. Tryptophan
C. Allopurinol
D. Contrykal
E. Vicasol

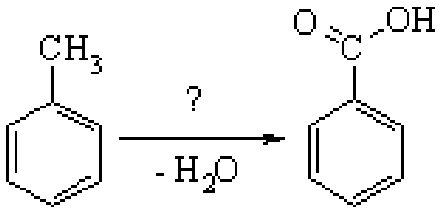
106. Pharmaceutical practice widely applies isotonic solution of sodium chloride. How much sodium chloride is to be takenin order to prepare 100 g of the isotonic solution?

A. 0,85 g
B. 8,5 g
C. 4,5 g
D. 0,45 g
E. 5,0 g

107. Which element has the same valence in both hydrogen compound and higher oxide?

A. Carbon
B. Phosphorus
C. Selenium
D. Bromine
E. Argon

108. Toluol is converted to the benzoic acid under the following conditions:



A. Oxidation with potassium permanganate
B. Heating with sulphuric acid
C. Hydrogen peroxide action at a room temperature
D. Sodium hydroxide action at a room temperature
E. Boiling in the open air

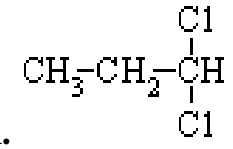
109. Some drugs are colloid solutions. Colloidal disperse systems are the systems whose particles are sized within the range of:

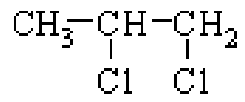
A. 10^{-9} - 10^{-7} m
B. 10^{-7} - 10^{-4} m
C. 10^{-4} m
D. 10^{-9} m
E. 10^{-9} - 10^{-4} m

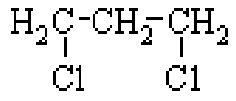
110. The thyroid gland synthesizes a hormone that lowers the rate of Ca^{2+} concentration in blood thus facilitating its deposition in bones. What hormone is it?

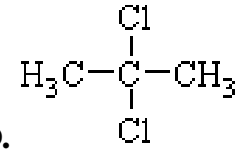
A. Calcitonin
B. Thyroxin
C. Triiodthyronine
D. Adrenaline
E. Parathormone

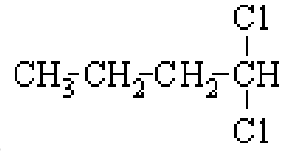
111. Which of the following compounds forms a propionic aldehyde as a result of alkaline hydrolysis (H_2O, OH^-)?

A. 

B. 

C. 

D. 

E. 

112. In order to choose an indicator during the acid-bace titration a titration curve is made which is the dependence of:

A. pH solution from the volume of the added titrant
B. pH solution from the concentration of the added titrant
C. pH solution from the volume of the solution under analysis
D. Concentration of the solution under analysis from pH solution
E. pH solution from the temperature

113. Nephron is the structural and functional unit of the kidneys. The process of filtration takes place in the following part of it:

A. Bowman's capsule
B. Henle's loop
C. Collecting tubule
D. Proximal tubule
E. Distal tubule

114. Inflammatory processes in the gall bladder exert negative influence on the colloidal properties of bile. This may lead to gallstone formation. One of the causes of their formation is the crystallization of the following substance:

A. Cholesterol
B. Albumine
C. Haemoglobin
D. Urates
E. Oxalates

115. What method of titrimetric analysis can be applied for the quantitative determination of sulphuric acid by means of the potassium hydroxide solution?

A. Alkalimetry
B. Acidimetry
C. Oxidation-reduction
D. Precipitation
E. Complexation

116. Ions of which chemical element have an impact on the electrolytic balance of cerebral tissues. What salt of this element is used for treating the psychic disorders?

A. Li, Li_2CO_3
B. Cl, $NaCl$
C. I, KI
D. Ca, $CaCl_2$
E. Mg, $MgSO_4$

117. Drug production commonly involves the processes of adsorption and ion exchange. What ion is selectively adsorbed from the aqueous solution based on silver chloride crystal?

A. Ag^+
B. H^+
C. NO^{3-}
D. Cu^{2+}
E. OH^-

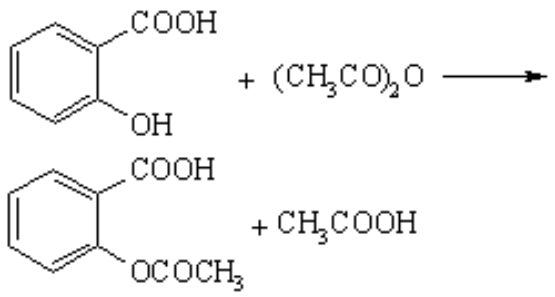
118. Osmotic pressure is an important characteristic of biologic fluids. Osmotic pressure variates with time in the following solution:

A. Silver chloride sol
B. Glucose
C. Calcium sulphate
D. Sodium chloride
E. Magnesium sulphate

119. 3-aminopropane acid is included in pantothenic acid which is a component of coenzyme A. What reaction takes place in course of heating of this acid?

A. Elimination (detachment)
B. Substitution
C. Addition
D. Rearrangement
E. Reduction

120. The given reaction is called:



A. Acylation
B. Esterification
C. Addition
D. Removal
E. Regrouping

121. A patient diagnosed with acute abdomen was delivered to the hospital. A doctor suspected acute appendicitis and ordered urgent blood test. What factor would be the evidence of acute inflammation in this patient?

A. Leukocytosis
B. Leukopenia
C. Eosinophilia
D. Erythrocytosis
E. Erythropenia

122. Bacteria may contain not only chromosomal but also nonchromosomal hereditary elements called plasmids. Presence of plasmid genes can show itself by:

A. Multiple drug resistance
B. Stain resistance
C. Physical factor resistance
D. Sporogenesis ability
E. Mobility

123. The method of "accelerated drug ageing"used for determination of drug shelf life is based upon:

A. Van't Hoff's rule
B. Fajans' rule
C. Planck's postulate
D. Ostwald law
E. Raoult law

124. Transamination is the biochemical process in which amino groups of different amino acids take form of one of the amino acids. What amino acid is it?

A. Glutamic
B. Glycine
C. Valine
D. Leucine
E. Arginine

125. Microscopic examination of ground tissue of a small branch revealed cork and felloderm. These are the derivates of:

A. Phellogen
B. Cambium
C. Procambium
D. Protoderm
E. Pericycle

126. Aetiological factors for the infectious diseases are often microorganisms with various ultrastructure. Which of the following microorganism groups relates to the eucariots?

A. Protozoa
B. Viruses
C. Viroids
D. Prions
E. Scotobacteria

127. For the technology of drug production the pressure, temperature and concentration are of great importance. What process is accelerated in case of temperature decrease?

A. Exothermic
B. Endothermic
C. Adiabatic
D. Isochoric
E. Isobaric

128. Before nitration of aniline it is usually acidified in order to protect amino groups from oxidation. Which of the following reagents is used for this purpose?

A. $(CH_3CO)_2O$
B. CH_3CHO
C. C_2H_5Cl
D. HNO_2
E. $CHCl_3 + NaOH$

129. Amides are weak NH-acids. They make salts as a result of interaction with one of the given reagents:

A. $NaNH_2\ (Na\ met.)$
B. $NaOH\ (H_2O)$
C. $P_2O_5\ (t^o)$
D. $NaOBr\ (Br_2 + NaOH)$
E. $LiAlH_4$

130. Six-membered nitrogen-containing heterocyclic compounds exhibit basic properties. Which compound has the strongest basic properties?

A. Piperazine
B. Pyridine
C. Pyrimidine
D. Pyrazine
E. Pyridazine

131. Microscopic examination of a ficus leaf revealed in some cells of its epidermis a protrusion of the cell membrane with an accumulation of crystals that dissolve in the hydrochloric acid and release carbonic acid gas. This structure is called:

A. Cystolith
B. Raphide
C. Druse
D. Single crystal
E. Styloid

132. Aminotransferases are the enzymes that transfer an amino group from one compound to another. What compound is the acceptor of amino groups?

A. α-ketoglutaric acid
B. Acetone
C. Lactic acid
D. Succinic acid
E. Butyric acid

133. A composition under examination contains ions of Cl^-, Br^- and I^- in equimolar quantities. The sequence of precipitate formation in course of argentometric titration will be determined by:

A. Solubility product of the corresponding silver halogenides
B. Value of oxidation-reduction potentials
C. Way of titration - either back or direct
D. Value of corresponding ion mobility
E. Ionic strength of solution

134. When chlorine is passed through the cold solution of potassium hydroxide the following compound are produced:

A. KCl, $KClO$, H_2O
B. KCl, $KClO_2$, H_2O
C. KCl, H_2O
D. $KClO_3$, $KClO$, H_2O
E. $KClO_3$, H_2O

135. A 37-year-old man was admitted to a hospital with an attack of bronchial asthma. What respiration type will be observed in this patient?

A. Expiratory dyspnea
B. Inspiratory dyspnea
C. Apnoea
D. Gasping respiration
E. Hyperpnoea

136. It is required to measure the nitrogen metabolism in a person under observation who is recovering from continuous starvation. What result is most likely to be expected?

A. Decrease in nitrogen secretion
B. Nitrogen equilibrium
C. Negative nitrogen balance
D. Acetonemia
E. -

137. It is required to increase the secretion of gastric juice in an experimental dog with stomach fistula. What should be introduced into the stomach?

A. Meat broth
B. White bread
C. Milk
D. Dried bread
E. Sour cream

138. After a bacteriological analysis a tableted medication has been found to be inapplicable, though its general microbial contamination was within the norm. The reason for such a conclusion was the presence of the following microorganisms:

A. Enterobacteria
B. Mold fungi
C. Actinomycetes
D. Micrococci
E. Sarcinae

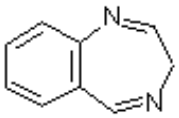
139. From a medicinal herb a certain phytopathogenic microorganism was secured. In the nutrient medium it forms "fried egg"colonies. What is the most likely agent?

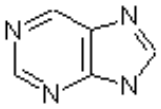
A. Mycoplasma
B. Yeast fungi
C. Actinomycetes
D. Nocardia
E. Pseudomonades

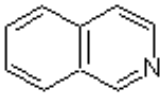
140. While examining structure of a root the students payed attention to an area where the superficial cells formed root fibrils. What root zone is it?

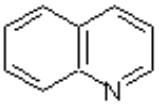
A. Suction
B. Cell division
C. Extension
D. Conduction
E. Pileorhiza

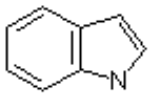
141. Choose benzo-1,4-diazepine from the given heterocyclic compounds:

A. 

B. 

C. 

D. 

E. 

142. What is the osmotic pressure of medicinal solutions used as blood isotonics?

A. 740 - 780 kPa
B. 420 - 448 kPa
C. 900 - 960 kPa
D. 600 - 670 kPa
E. 690 - 720 kPa

143. Under what conditions the limited swelling of gelatine turns into the unlimited one?

A. Heating
B. Cooling
C. In presence of PO_4^{3-} ions
D. In presence of Cl^- ions
E. In presence of H^+ ions whose concentration is equal to their concentration in the isoelectric point

144. A 57-year-old worker at an asphalt plant complains of weakness, cough with blood-streaked sputum, chest pain. He has been diagnosed with lung cancer. What is the first stage of carcinogenesis?

A. Transformation
B. Promotion
C. Activization
D. Progression
E. Induction

145. Choose a pair of titrants for the qualitative determination of ammonia in a solution by the method of back titration:

A. HCl, $NaOH$
B. HCl, H_2SO_4
C. KOH, $NaOH$
D. $NaOH$, KCl
E. H_2SO_4, K_2SO_4

146. Nitritometric determination of compounds containing primary aromatic amino group can be carried out under the following conditions:

A. With observation of all the mentioned conditions
B. At a temperature up to 10^oC
C. With adding of the crystalline KBr (catalyst)
D. Chloric acid excess
E. Slow titration

147. Under anaerobic conditions during glycolysis ATP is synthesized by the way of substrate phosphorylation. This process uses energy of other high-energy compounds. Specify one of such compounds:

A. Phosphoenol pyruvate
B. Glucose 6-phosphate
C. Lactate
D. Pyruvate
E. Glucose

148. A patient with acute pneumonia has an edema and hardening of pulmonary tissue. What cells are the first to infiltrate the inflammation zone and provide the effective protection from the bacterial infection?

A. Neutrophils
B. Monocytes
C. Thrombocytes
D. Eosinophils
E. Basophils

149. Heart automatism is possible due to the atypical cardiomyocytes forming the cardiac conduction system. What part of this system is the primary cardiac pacemaker?

A. Sinoatrial node
B. Purkinje's fibers
C. Atrioventricular node
D. His' bundle
E. His' bundle branches

150. Examination of a patient revealed reddening of oral mucosa, cracks on the lips and mouth corners, face skin dryness and desquamation, conjunctiva inflammation, vasculature invasion into the cornea. The possible cause of this

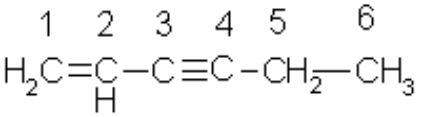
pathology is the deficit of the following vitamin:

A. B_2
B. C
C. E
D. K
E. D

151. During the practical training the students placed the isolated frog's heart into a solution. This caused the cardiac arrest in diastole. What solution was the heart placed into?

A. 3% solution of KCl
B. 1% solution of $NaCl$
C. 3% solution of $NaCl$
D. 1% solution of $CaCl_2$
E. 0,1% solution of $MgCl_2$

152. Which atoms of carbon in the given compound



are in the second valence state (sp^2-hybridization)?

A. 1 and 2
B. 1 and 3
C. 2 and 3
D. 3 and 4
E. 5 and 6

153. To relax skeletal muscles during complex surgeries, curarelike substances are applied. These substances block the following structure:

A. Neuromuscular synapses
B. Basal ganglions
C. Red nuclei of the mesencephalon
D. Synaptic structures of the spinal cord
E. Vegetative ganglions

154. It is known that the digestion of proteins, fats and carbohydrates is possible due to the protease, lipase and amylase respectively. What digestive juice contains the enough supply of all the groups of enzymes?

A. Pancreatic
B. Saliva
C. Gastric
D. Bile
E. Gastric juice and bile

155. Lligation of the common bile duct in an experimental animal results in block of bile inflow to the duodenum. This will cause the failure of hydrolysis of the following substances:

A. Fats
B. Carbohydrates
C. Proteins
D. Fats and carbohydtares
E. Proteins and carbohydrates

156. As a result of sulfonation of naphthalene with concentrated sulfuric acid at a temperature over 160^oC the following substance is produced:

A. 2-naphthalensulfonic acid
B. 1-naphthalensulfonic acid
C. 3-naphthalensulfonic acid
D. 4-naphthalensulfonic acid
E. 5-naphthalensulfonic acid

157. One of the plants under examination has a zygomorphic flower and papilionaceous corolla. This plant is called:

A. *Melilotus officinalis*
B. *Mentha piperita*
C. *Valeriana officinalis*
D. *Urtica dioica*
E. *Rosa canina*

158. An elderly woman complains of twilight vision impairment. Which of the following vitamins should be administered in this case?

A. A
B. C
C. E
D. D
E. PP

159. A patient is 50 years old. Ad a result of continuous improper diet he has developed hypovitaminosis C. Lesion of connective tissue is caused by low activity of the following enzyme:

A. Proline hydroxylase
B. Alanine aminotransferase
C. Pyruvate carboxylase
D. Tryptophane hydroxylase
E. Glutaminase

160. Before diving experienced divers first take several deep breaths. They do it in order to:

A. Remove as much as possible CO_2
B. Reduce functional residual capacity of lungs
C. Increase lung vital capacity (LVC)
D. Increase total lung capacity (TLC)
E. Increase respiratory volume (RV)

161. During the preventive medical examination a doctor revealed a significant weakening of patellar reflex in one of the patients. What part of the central nervous system is likely to be affected?

A. Spinal cord
B. Hindbrain
C. Midbrain
D. Interbrain
E. Cerebellum

162. Systematic and intensive physical exercise causes reduction of fat concentration in the adipose tissues. It is released from the cells into the blood in form of:

A. Free fatty acids and glycerine
B. Chylomicrons
C. Lipoproteins
D. Ketone bodies
E. Glucose

163. Production of a number of drugs requires sterile isotonic solution. Choose the optimal method of its sterilization:

A. Steam under pressure sterilization
B. Dry heat sterilization
C. Boiling
D. Direct flame sterilization
E. Pasteurization

164. Manganese tetrachloride is very unstable. It can be easily decomposed into:

A. $MnCl_2 + Cl_2$
B. $Mn + Cl_2$
C. Cl_2
D. Mn
E. $MnCl_3 + Cl_2$

165. Glass electrode is commonly used for pH measurement in the biologic media, fluid drug forms etc. What type does the glass electrode relate to?

A. Ion selective electrode
B. I type electrode
C. Reduction-oxidation electrode
D. II type electrode
E. Gas electrode

166. A patient suffering from the essential hypertension presents with an increase in the arterial pressure up to 180/110 mm Hg; dyspnea, cyanosis, tachycardia; heart borders are dilated to the left, in lungs moist rales are present. What signs of urgent compensation for cardiac failure are observed?

A. Tachycardia
B. Arterial pressure rise
C. Cyanosis
D. Dyspnea
E. Myogenic dilatation

167. A medicinal herb under examination has the capsule fruit with lacticifers and small openings. This herb is called:

A. *Papaver somniferum*
B. *Chelidonium majus*
C. *Zea mays*
D. *Mentha piperita*
E. *Sanquisorba officinalis*

168. When a smear is stained by Burry-Gins method a mucous structure that is tightly bound with the cellular wall of bacteria and has well-defined outer boundaries can be detected. This element of a bacteria cell is called:

A. Capsule
B. Spore
C. Filaments
D. Ribosomes
E. Episomes

169. Sanitary-biologic examination of air in a drugstore revealed a sanitary-indicative microorganism. Name it:

A. Staphylococcus aureus
B. Colon bacillus
C. Fecal enterococcus
D. Alpha-haemolytic streptococcus
E. Citrobacter

170. A patient presents with fever, chill and cough. From his sputum the ovoid Gram-negative bipolar-stained bacilli with a delicate capsule were secured. What is the most likely diagnosis?

A. Plague
B. Tuberculosis
C. Leptospirosis
D. Brucellosis
E. Toxoplasmosis

171. A drugstore received a supply of a drug that is widely used for treatment of many virus diseases since it is not virus specific. What drug is it?

A. Interferon
B. Remantadin
C. Metisazone
D. Immunoglobulin
E. Vaccine

172. A patient was administered an antibiotic of animal origin for the corneal ulcer treatment. What is it called?

A. Lysozyme
B. Chlorophyllipt
C. Nystatin
D. Imanin
E. Gramicidin

173. What kind of isomerism is typical for the oleic acid?

A. Cis-trans-stereoisomerism
B. Optic
C. Keto-enol tautomerisn
D. Enantiomerism
E. Lactim-lactam tautomerism

174. As a result of hyperventilation a student has developed dizziness. What blood changes are the primary cause of this effect?

A. Decrease in CO_2 concentration
B. pH increase
C. Increase in CO_2 concentration
D. Increase in O_2 concentration
E. Decrease in O_2 concentration

175. A Rh-positive child of a Rh-negative woman (secundapara) has yellow skin, pathologic reflexes, convulsions. The child has an increased rate of indirect bilirubin in blood. What type of jaundice is it?

A. Haemolytic
B. Hepatic with violation of bilirubin capture
C. Hepatic with violation of bilirubin conjugation
D. Hepatic with violation of bilirubin excretion
E. Mechanic

176. After a road accident a patient has the arterial pressure at the rate of 70/40 mm Hg and daily diuresis at the rate of about 300 ml. What is the mechanism of oliguria development in this case?

A. Decrease in glomerular filtration
B. Increase in glomerular filtration
C. Decrease in tubular reabsorption
D. Increase in tubular reabsorption
E. Decrease in tubular secretion

177. A citrus fruit is characterized by the glandular exocarp, spongiose mesocarp and overgrown endocarp consisting of juice sacs. Such fruit is called:

A. Hesperidium
B. Legume
C. Pod
D. Drupe
E. Bacca

178. You need to specify a monocarpous one-seeded fruit with hard scleroid endocarp and soft mesocarp. This fruit is:

A. *Drupe*
B. *Legume*
C. *Silique*
D. *Capsule*
E. *Bacca*

179. One of the herbarium specimens of medicinal plants relates to the *Asteraceae* family. This plant is:

A. *Arctica lappa*
B. *Atropa belladonna*
C. *Cassia acutifolia*
D. *Urtica dioica*
E. *Rubus idaeus*

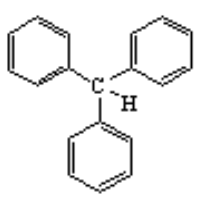
180. The section of a sunflower seed has been treated with *Sudan III* solution that caused pink-and-orange staining. This is the evidence of presence of:

A. Fatty oil
B. Protein
C. Starch
D. Inulin
E. Cellulose

181. Determination of sodium chloride by Folgard's method involves the following techniques:

A. Back titration, argentometry
B. Direct titration, argentometry
C. Substitute titration
D. Back titration, mercurimetry
E. Direct titration, mercurimetry

182. Tritane relates to:



A. Multinuclear arenes with isolated benzene cycles
B. Multinuclear arenes with condensated benzene cycles
C. Mononuclear arenes
D. Alkanes
E. Alkenes

183. Specify the reagent that allows to produce liquid soap as a result of alkaline fat hydrolysis (saponification):

A. K_2CO_3
B. $NaOH$
C. CaO
D. PbO
E. $NaHCO_3$

184. Many elements have allotropic modifications. Specify the allotropic modification of oxygen:

A. Ozone
B. Phosgene
C. Quartz
D. Corundum
E. Diamond

185. What substance can be identified by method of acid-base titration and oxidation-reduction titration?

A. Oxalate acid
B. Sodium sulphate
C. Calcium nitrate
D. Sodium hydroxide
E. Ammonium chloride

186. The pancreas secretes an enzyme that is able to hydrolyze α-1,4-glycosidic linkages in a glycogen molecule. Specify this enzyme:

A. α-amylase
B. Phosphatase
C. Enterokynase
D. Chemotrypsin
E. Lysozyme

187. A 6-month old child has been administered a peroral drug. What is the maximal number of bacteria and fungi that is permissible in 1 g of this drug in compliance with the requirements of WHO and Pharmacopoeia?

A. No more than 50 bacteria and fungi in total
B. No more than 500 bacteria and fungi in total
C. No more than 1000 bacteria and fungi in total
D. No more than 1000 bacteria and 100 fungi
E. No more than 500 bacteria and 50 fungi

188. A warmly dressed child has spent a considerably long time out of doors. This resulted in body temperature elevation and general weakness development. What form of thermoregulation disorder is observed in this case?

A. Exogenous hyperthermia
B. Endogenous hyperthermia
C. Fever
D. Heat shock
E. Centrogenous hyperthermia

189. A patient with pneumosclerosis has blood pH at the rate of 7,34. Analysis of gas formula of blood showed hypercapnia. Urine analysis revealed the increase in its acidity. What form of acid-base disbalance is the case?

A. Gaseous acidosis
B. Secretory alkalosis
C. Gaseous alkalosis
D. Non-gaseous alkalosis
E. Non-gaseous acidosis

190. Specify the different-ligand complex compound that is used as an antitumour drug:

A. $[Pt(NH_3)_2Cl_2]$
B. $[Co(NH_3)_5NO_3]Cl_2$
C. $Na_4[Sn(OH)_3Cl_3]$
D. $[Cu(NH_3)_4(SCN)_2]$
E. $K_2Na[Co(NO_2)_6]$

191. A solution containing the cations of the V analytic group (acid-base classification) has been taken for the analysis. The solution of sodium hydroxostannite has been added to the composition which resulted in formation of black deposition. This is the evidence of presence of the following cation:

A. Bi^{3+}
B. Fe^{2+}
C. Sb^{3+}
D. Fe^{3+}
E. Mg^{2+}

192. If the amount of a high-molecular substance added to a sol is very small,

then the decrease in stability is possible. This phenomenon is called:

A. Sensibilization
B. Solubilization
C. Mutual coagulation
D. Protective power of colloids
E. Colloid coagulation

193. Which of the following adsorbents is the most effective for adsorption of a substance from the aqueous solution?

A. Activated carbon
B. Silica gel
C. Quartz
D. Bolus alba
E. Gypsum

194. Characteristic peculiarity of mechanic plant tissues is that they consist mainly of dead cells, but there is one type of mechanic tissues consisting of living cells. Which of the listed mechanic tissues contains the living protoplast?

A. Collenchyme
B. Scleroids
C. Libriform
D. Perivascular fibers
E. Phloem fibers

195. What cations relate to the I analytic group according to the acid-base classification?

A. Sodium, potassium, ammonium
B. Calcium, strontium, barium
C. Silver, lead, nickel
D. Aluminium, magnesium, zinc
E. Potassium, barium, bismuth

196. Which of the following substances does the concentrated sulphuric acid react with along with production of SO_2?

A. Ag
B. CuO
C. $NaCl$
D. Ca
E. $[Mg(NO_3)_2]$

197. Choose a plant whose apical sprouts are used in medical practice for sedative drug production:

A. *Leonurus cardiaca*
B. *Glycyrrhiza glabra*
C. *Digitalis purpurea*
D. *Ledum palustre*
E. *Fagopyrum sagittatum*

198. In course of the systematic analysis separation of cations of the V and VI analytic groups (according to the acid-base classification) is carried out under the action of excess of:

A. Concentrated ammonia solution
B. Sodium hydroxide solution
C. Hydrochloric acid solution
D. Potassium hydroxide solution
E. Sulphuric acid solution

199. Transport form of lipids in blood are lipoproteins. Cholesterol is transported to the liver mostly in form of:

A. High-density lipoproteins
B. Low-density lipoproteins
C. Very-low-density lipoproteins
D. Interferons
E. Albumins

200. Nonsteroid anti-inflammatory drugs are used in medical practice for treating the rheumatoid arthritis, osteoporosis, inflammatory dseases of the connective tissue. These preparations inhibit the activity of the following enzyme:

A. Cyclooxygenase
B. Hexokinase
C. Succinate dehydrogenase
D. Aminotransferase
E. Xanthine oxidase