1. Microscopic analysis of human heart cells revealed some oval oganellas, their tunic being formed by two membranes: the external one is smooth, and the internal one forms crista. Biochemical analysis determined the presence of ATP-synthetase enzyme. What organellas were analysed?

a. Mitochondrions
b. Ribosomes
c. Centrosomes
d. Endoplasmic reticulum
e. Lysosomes

2. As a result of iodine deficiency in foodstuffs Transcarpathian people often have endemic goiter. This disease is caused by the following type of variability:

a. Mutational
b. Ontogenetic
c. Correlative
d. Modification
e. Combinatorial

3. During the examination of a two month boy a pediatrician noticed that the childs cry sounds like cats mewing; he revealed also microcephalia and valvular defect. By means of cytogenetic method he determined the childs karyotype - 46 XY, 5p-. At what stage of mitosis was the patients karyotype analyzed?

a. Prometaphase
b. Anaphase
c. Telophase
d. Metaphase
e. Prophase

4. In the vermiform appendix there was found a white helminth, 40 mm long with thin filiform forward end. Ecscrements contained oval eggs with plugs at the poles. Determine the kind of helminth:

a. Hookworm
b. Threadworm
c. Seatworm
d. Ascarid
e. Whipworm

5. Medical examination of some youths revealed in their axillary regions grey insects size of 1,0-1,5 mm, with short broad body covered with hair. What insects were revealed?

a. Itch mite
b. Pubic louse
c. Head louse
d. Flea
e. Bed bug

6. Examination of a man revealed a protozoan disease that affected brain and caused vision loss. Blood analysis revealed unicellular half-moon-shaped organisms with pointed end. The causative agent of this disease is:

a. Lamblia
b. Leishmania
c. Toxoplasma
d. Amoeba
e. Trichmonadas

7. Excessive hairiness of auricles (hypertrichosis) is determined by a gene which is localized in Y-chromosome. Father has this feature. What is the probability of the fact that the boy will be born with such anomaly?

a. 75%
b. 100%
c. 25%

d. 0%
e. 35%

8. There are trisome, translocational and mosaic forms of Downs Syndrome. What method of human genetics can be applied to differentiate the said forms of Downs syndrome?
a. Biochemical
b. Population-statistical
c. Gemellary
d. Genealogical
e. Cytogenetical

9. Very big teeth is an Y-linked sign. Mothers teeth are of normal size, and her sons teeth are very big. Probability of fathers having very large teeth is:
a. 75%
b. 25%
c. 12,5%
d. 100%
e. 50%

10. An 8 month child has non-closed palate, a number of eye defects, microcephaly, disorder of cardiovascular system. Cytogenetic analysis revealed 47 chromosomes with an additional 13th chromosome. What diagnosis can be made on the basis of clinical observations and cytogenetic examinations?
a. Pataus syndrome
b. Edwards syndrome
c. Klinefelters syndrome
d. Downs syndrome
e. Cat cry syndrome

11. A patient with suspected liver abscess was admitted to the surgical department. The patient had been staying for a long time on business in one of african countries and fell repeatedly ill with acute gastrointestinal disorders. What protozoal disease may the patient be now ill with?
a. Malaria
b. Toxoplasmosis
c. Trypanosomosis
d. Leishmaniasis
e. Amebiasis

12. Examination of a 7 year old child revealed the following symptoms: small height, broad roundish face, closely placed eyes with narrow palpebral fissures, half-open mouth. Valvular defect has been also diagnosed. These clinical presentations are most likely typical for Downs syndrome. Name the cause of such pathology:
a. Trisomy of the 13 chromosome
b. Partial monosomy
c. Nondisjunction of sexual chromosomes
d. Trisomy of the 21 chromosome
e. X-chromosome trisonomy

13. A child complains of having an itch in occipital and temporal region of head. After examination his mother found superficial ulcers as a result of scratching and white nits in the hair. Name the pathogenic organism:
a. Body louse
b. Screwworm fly
c. Pubic louse
d. Head louse
e. Human flea

14. The students studied pecularities of genetic code and found out that there are amino acids

corresponded by 6 codons, 5 amino acids - 4 different codons. Other amino acids are codified by three or two codons and only two amino acids are codified by one codon. What pecularity of genetic code did the students find out?

a. Triplety
b. Redundancy
c. Collinearity
d. Versatility
e. Unidirectionality

15. A group of students has representatives of different races. One of the students has straight black hair and overhanging skin fold of superior eyelid - epicanthus. What race does this student most probably represent?

a. Europeoid
b. Negroid
c. Mongoloid
d. Australoid
e. Ethiopian

16. Tetracycline taking in the first half of pregnancy causes abnormalities of fetus organs and systems, including tooth hypoplasia and alteration of their colour. What type of variability is the childs disease related to?

a. Hereditary
b. Recombinant
c. Combinative
d. Mutational
e. Modification

17. Examination of a pregnant woman who has been taking alcohol revealed disturbed anlage of ectoderma during the fetal life. What derivatives of this leaf have defects?

a. Kidneys
b. Liver
c. Sexual glands
d. Neural tube
e. Bowels epithelium

18. In a genetical laboratory in course of work with DNA molecules of white rats of Wistars line a nucleotide was substituted for another one. At that only one amino acid was substituded in the peptide. This result is caused by the following mutation:

a. Transversion
b. Duplication
c. Translocation
d. Displacement of reading frame
e. Deletion

19. A 1,5 year old child was taken to the hospital. The examination revealed dementia, disorder of motor functions regulation, hypopigmentation of skin, high rate of phenylalanine in blood. What is the most probable diagnosis?

a. Mucoviscidosis
b. Phenylketonuria
c. Tyrosinosis
d. Galactosemia
e. Downs syndrome

20. A wide cleft between incisors of both mother and father is the dominant feature. They are both homozygous. What genetic regularity will their children have?

a. Linked inheritance
b. Uniformity of first generation hybrids
c. Independent inheritance of feature

d. Hybrid segregation by phenotype
e. Non-linked inheritance

21. Father bought some pork at the market. What disease may catch members of his family provided that this meat didnt pass the veterinary control?
a. Beef tapeworm infection
b. Echinococcosis
c. Liver fluke infection
d. Pork tapeworm infection
e. Hymenolepiasis

22. Examination of a patient with hepatolenticular degeneration revealed that synthesis of ceruloplasmin protein has a defect. What organelles is this defect connected with?
a. Agranular endoplasmic reticulum
b. Golgi complex
c. Lysosomes
d. Granular endoplasmic reticulum
e. Mitochondrions

23. During the postsynthetic period of mitotic cycle the synthesis of tubulin proteins was disturbed. These proteins take part in construction of division spindle. It can lead to the disturbance of:
a. Chromosomes disjunction
b. Cytokinesis
c. Mitosis duration
d. Despiralization of chromosomes
e. Spiralization of chromosomes

24. A newborn child has microcephalia. Doctors consider that this is the result of mothers taking actinomycin D during the pregnancy. What embryonal leaf was influenced by this teratogen?
a. Entoderma and mesoderma
b. Ectoderma
c. Entoderma
d. All leaves
e. Mesoderma

25. Pigmentation intensity of human skin is controlled by a few independent dominant genes. It is known that pigmentation is the more intensive, the bigger quantity of these genes. What is the type of interaction between these genes?
a. Epistasis
b. Pleiotropy
c. Polymery
d. Codominancy
e. Complementarity

26. A 35 y.o. patient diagnosed with sterility came to gynaecological department for diagnostic biopsy of endometrium. Microscopic examination revealed that mucous membrane is edematous, uterine glands are convoluted and filled with thick secreta. Such changes in the endometrium are caused by excess of the following hormon:
a. Testosterone
b. Estrogen
c. Progesterone
d. Somatotropin
e. ACTH

27. A chemical burn of esophagus caused its local constriction as a result of scar formation. What cells of loose connective tissue take part in scar formation?
a. Fibrocytes
b. Immature nonspecialized fibroblasts

c. Mature specialized fibroblasts
d. Miofibroblasts
e. Fibroclasts

28. During postembryonal haemopoiesis in the red bone marrow the cells of one of the cellular differons demonstrate a gradual decrease in cytoplasmic basophilia as well as an increase in oxyphilia, the nucleus is being forced out. Such morphological changes are typical for the following haemopoiesis type:
a. Lymphopoiesis
b. Eosinophil cytopoiesis
c. Basophil cytopoiesis
d. Erythropoiesis
e. Neutrophil cytopoiesis

29. Examination of uterine cavity revealed an embryonated ovum that wasnt attached to the endometrium. The embryo is in the following stage of development:
a. Gastrula
b. Neurula
c. Zygote
d. Morula
e. Blastocyst

30. During embryogenesis trophoblast develops into an organ rudiment that has endocrinal function. What rudiment is it?
a. Yolk sac
b. Amnion
c. Villous chorion
d. Allantois
e. Umbillical cord

31. A 30-year-old woman has subnormal concentration of enzymes in the pancreatic juice. This might be caused by the hyposecretion of the following gastrointestinal hormone:
a. Gastro-inhibiting peptide
b. Vaso-intestinal peptide
c. Somatostatin
d. Secretin
e. Cholecystokinin-pancreozymin

32. It is known that people who permanently live in highland have an increased concentration of erythrocytes per each blood volume unit. Owing to this fact blood can optimally fulfil the following function:
a. Haemostasis participation
b. Amino acid transport
c. Gas transport
d. Maintenance of acid-base balance
e. Maintenance of ionic equilibrium

33. A mountain climber spent a long time in the mountains. Erythrocyte number has risen from 5,0*10^12/l up to 6,0*10^12/l. What factor stimulated erythropoiesis?
a. Decrease of O2 in the arterial blood
b. Decrease of O2 in the venous blood
c. Increase of O2 in the cells
d. Increase of O2 in the venous blood
e. Increase of O2 in the arterial blood

34. While exercising on a bicycle ergometer a sportsman was trying to choose such a load that would allow him to achieve the maximal performance of his muscles. What load intensity is required in this case?

a. Continuous minimal
b. Middle
c. Minimal
d. Maximal
e. Alternating minimal and maximal

35. Examination of a patient who has recently had a hepatic disease revealed low concentration of prothrombin in blood. First of all this will cause disturbance of:
a. Fibrinolysis
b. Anticoagulative blood properties
c. First phase of coagulation haemostasis
d. Vasculothrombocytic haemostasis
e. Second phase of coagulation haemostasis

36. Researchers studied speed of excitement conduction in different areas of an isolated heart. Which area demonstrated the lowest speed?
a. Purkinjes fibers
b. His bundle
c. Atrioventricular node
d. Atrial myocardium
e. Ventricular myocardium

37. A 20 y.o. patient complains about morbid thirst and profuse urination (up to 10 l a day). Glucose concentration in blood is normal, urine contains no glucose. Such condition may be caused by deficiency of the following hormone:
a. Triiodothyronine
b. Cortisol
c. Oxytocin
d. Insulin
e. Vasopressin

38. Dentists widely apply local anaesthesia adding adrenalin to an anaesthetic solution. What is the purpose of this method?
a. Microcirculation improvement
b. Local vasoconstriction
c. Lowering of arterial pressure
d. Local vasodilatation
e. Local reduction of vascular resistance

39. A patient had a cranial trauma that resulted in sight loss. What area of cerebral cortex was damaged?
a. Occipital
b. Parietal
c. Parietal and temporal
d. Temporal
e. Frontal

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

41. Deglutition of a patient is disturbed as a result of a trauma. The most probable cause of this disturbance is affection of the following part of CNS:
a. Spinal cord, C V-VI

b. Spinal cord , Th II-IV
c. Medulla oblongata
d. Mesencephalon
e. Hypothalamus

42. A patient has hyperkaliemia and hyponatremia. Such changes might be caused by hyposecretion of the following hormone:
a. Parathormone
b. Natriuretic
c. Vasopressin
d. Cortisol
e. Aldosterone

43. A patient ill with chronic glomerulonephritis has a disturbed incretory function of kidneys. It will result in the deficit of the following blood corpuscles:
a. Thrombocytes
b. Leukocytes
c. Erythrocytes
d. Leukocytes and thrombocytes
e. Erythrocytes and leukocytes

44. Analysis of a patients saliva revealed high concentration of lactate. This is most probably caused by activation of the following process:
a. Glucose-lactate cycle
b. Anaerobic glucose breakdown
c. Glycogen breakdown
d. Aerobic glucose breakdown
e. Carbohydrate hydrolysis

45. A patient consulted a doctor about the intensive skin itch, especially between fingers, in axillary creases, in the inferior part of belly. During the skin examination there were found twisting whitish tracts with speckles at the end of them. What disease are these clinical presentations typical for?
a. Demodicosis
b. Miasis
c. Pediculosis
d. Dermatotropic leishmaniosis
e. Scabies

46. Blood of a child and putative father was referred to forensic medical examination for affiliation. What chemical components should be identified in the blood under study?
a. Ribosomal RNA
b. Transfer RNA
c. DNA
d. Messenger RNA
e. SnRNA

47. What substance makes the saliva viscous and mucous and performs protective function, including protection from mechanical injury of mouth mucous membrane?
a. Amylase
b. Lysozyme
c. Glucose
d. Kallikrein
e. Mucin

48. A patient has been diagnosed with alkaptonuria. This pathology is caused by deficiency of the following enzyme:
a. Glutamate dehydrogenase
b. Phenylalanine hydroxylase

c. Oxidase of homogentisic acid
d. Pyruvate dehydrogenase
e. DOPA decarboxylase

49. At an altitude of 14000 m an aircraft experienced a sudden loss of cabin pressure. The pilot must have developed the following type of embolism:
a. Fat embolism
b. Gaseous
c. Thromboembolism
d. Foreign body embolism
e. Air embolism

50. Examination of puncture biopsy material of liver revealed dystrophy of hepatocytes, their necrosis and sclerosis along with disturbance of beam and lobulous structure and formation of pseudolobules of regeneration nodes. What is the most probable diagnosis?
a. Chronic hepatosis
b. Progressing massive liver necrosis
c. Acute hepatitis
d. Liver cirrhosis
e. Chronic hepatitis

51. A 58 year old female patient had to be prepared to cholecystectomy. Complex of premedication drugs included benzohexonium. What is the function of this drug in anaesthesia?
a. Intensification of retrograde amnesia
b. Functional block of visceral reflexes
c. Relaxation of smooth muscles
d. Relaxation of skeletal muscles
e. Reduction of excitement phase

52. A 65-year-old patient with chronic heart failure has been taking digitoxin in self-administered dosages for a long time. She was admitted to the hospital for general health aggravation, arrhythmia, nausea, reduced diuresis, insomnia. What is the primary action to be taken?
a. To withhold digitoxin
b. To administer strophanthine intravenously
c. To give an intravenous injection of calcium gluconate solution
d. To administer digoxin
e. To reduce digitoxin dosage

53. In a surgical department of a stomatological polyclinic a patient is being prepared for tooth extraction. What drug should be added to the solution of a local anaesthetic in order to prolong its action?
a. Isadrine
b. Noradrenaline hydrotartrate
c. Adrenalin hydrochloride
d. Salbutamol
e. Octadine

54. A patient had an attack of bronchial asthma in the dentists office. The attack was arrested by salbutamol. This drug relates to the following group of therapeutic agents:
a. ?-?-adrenomimetics
b. ?2-adrenomimetics
c. ?1-?2-adrenomimetics
d. ?-adrenomimetics
e. Sympatholytics

55. All nonsteroidal anti-inflammatory drugs can be harmful for stomach mucous membrane. In order to find substances that dont cause such complication it is necessary to know factors it is connected with. What molecular substrate should be less affected in order to reduce intensity of this

complication?

a. Adenylate cyclase

b. Cyclooxygenase 1

c. Kallikrein

d. Cyclooxygenase 2

e. Lysosomal enzymes

56. In a cell the mutation of the first exon of structural gene took place. The number of nucleotide pairs has decreased - 250 pairs instead of 290. Determine the type of mutation:

a. Inversion

b. Translocation

c. Nonsense-mutation

d. Deletion

e. Duplication

57. A patient with acute duodenal ulcer was admitted to the hospital. Analysis of gastric juice revealed hyperfunction of secretion and acid-forming in stomach. Choose a drug that can reduce secretory function of stomach due to inhibition of H2-receptors:

a. Platyphyllin

b. Ranitidine

c. Atropine

d. Extract of dry belladonna

e. Methacin

58. A patient complains about shin pain which is getting worse during walking. Objectively: there is an edema and reddening along the vein. A doctor administered a direct coagulant to be applied topically. What drug can be applied for this purpose?

a. Butadion ointment

b. Thrombin

c. Salicylic ointment

d. Troxevasin ointment

e. Heparin ointment

59. A patient was administered clonidine to be taken parenterally in case of abrupt rise of arterial pressure. What is its mechanism of action?

a. Block of ?1- and ?2-adrenoreceptors

b. Block of nicotinic cholinoreceptors of ganglia

c. Stimulation of central ?2-adrenoreceptors

d. Block of ?1-adrenoreceptors

e. Stimulation of central imidazole1-receptors

60. A patient complains about retrosternal pain, dyspnea and palpitation. After examination he was diagnosed with coronary heart disease and prescribed verapamil. What is the mechanism of its action?

a. It blocks sodium channels

b. It blocks calcium channels

c. It blocks β-adrenoreceptors

d. It blocks α-adrenoreceptors

e. It blocks potassium channels

61. A patient who attempted suicide in a state of serious depression was delivered to a hospital by an ambulance. What drugs should be administered?

a. Neuroleptics

b. Sedative

c. Antidepressants

d. Tranquillizers

e. Lithium salts

62. A patient has acute cardiac insufficiency resulting from essential hypertension. What drug is the most appropriate in this case?

a. Digoxin
b. Caffeine
c. Cordiamin
d. Corglycon
e. Cardiovalene

63. A patient was prescribed a drug with apparent lipophilic properties. What is the main mechanism of its absorption?

a. Binding with transport proteins
b. Passive diffusion
c. Active transport
d. Filtration
e. Pinocytosis

64. A patient noticed symptoms of approaching attack of bronchial asthma and took several tablets one by one at short intervals out of the doctors control. Short-term improvement of his condition came only after taking the first two tablets. Next intakes of a drug didnt improve his condition. Reduction of the drug effectiveness was caused by:

a. Cumulation
b. Dependence
c. Idiosyncrasy
d. Tachyphylaxis
e. Addiction

65. A patient consulted a dentist about the temporomandibular joint arthritis. The dentist administered an ointment containing diclofenac sodium. What is its mechanism of action?

a. Opiate receptor activation
b. Phospholipase inhibition
c. Cyclooxigenase inhibition
d. Opiate receptor block
e. Cyclooxigenase activation

66. It was necessary to determine absolute gustation thresholds of a healthy man for different substances. The lowest threshold will be observed for the following substance:

a. Citric acid
b. Quinine
c. Glucose
d. Sodium chloride
e. Saccharose

67. While being at the dentists a patient had an attack of bronchial asthma. The dentist applied a ?-adrenomimetic drug in form of inhalations. What drug was applied?

a. Adrenaline hydrochloride
b. Aminophylline
c. Salbutamol
d. Atropine sulfate
e. Ephedrine hydrochloride

68. A patient with closed fracture of humeral bone was bandaged with plaster. The next day the injured hand became swollen, cyanotic and cold. What disorder of peripheral blood circulation are these symptoms typical for?

a. Thrombosis
b. Embolism
c. Arterial hyperemia
d. Ischemia
e. Venous hyperemia

69. The air in a room has increased concentration of carbonic acid. What respiratory changes (depth and rate) will be observed in a person after entering this room?

a. Decrease in rate
b. Increase in rate
c. Decrease in depth
d. Increase in depth
e. Increase in depth and rate

70. An electronic microphotography represents a cell of neural origin that is a component of mucous membrane epithelium. Distal part of its peripheral process has a clavate thickening with 10-12 cilia sprouting from it. What cell is it?

a. Bipolar neuron of spinal ganglion
b. Rod cell of retina
c. Cone cell
d. Olfactory
e. Sensory epithelial cells of a gustatory organ

71. Rheography of an 18 year old student during exercise showed redistribution of blood flow between organs. The peak blood flow will be observed in the following vessels:

a. Liver
b. Kidneys
c. Gastrointestinal tract
d. Skeletal muscles
e. Cerebrum

72. Examination of a 35-year-old patient included histological analysis of the red bone marrow punctate that revealed a significant increase in the megakaryocyte number. This will cause the following alterations in the peripheral blood:

a. Agranulocytosis
b. Leukopenia
c. Leukocytosis
d. Thrombocytosis
e. Thrombocytopenia

73. While under barbituric anaesthesia a 65-year-old male patient developed respiratory inhibition. Anesthesiologist made him a 10 ml intravenous injection of 0,5% bemegride solution. The patients condition got better, the pulmonary ventilation volume increased. What phenomenon underlies the interaction of these medivcations?

a. Direct antagonism
b. Unilateral antagonism
c. Indirect synergism
d. Direct synergism
e. Indirect antagonism

74. A patient suffers from bradyarrhythmia caused by hypertension. What drug should be administered?

a. Clonidine
b. Reserpine
c. Methyldopa
d. Platyphyllin hydrotartate
e. Papaverine hydrochloride

75. A female patient suffering from acute bronchitis complains about respiratory obstruction and cough with thick viscous sputum. She was prescribed a mucolytic agent that stimulates surfactant synthesis. What mucolytic agent was prescribed?

a. Sodium hydrocarbonate
b. Glaucin
c. Theophylline

d. Ambroxolum
e. Morphine hydrochloride

76. A 60-year-old patient consulted a doctor about retrosternal pain arising immediately after physical exercise. He was prescribed nitroglycerin. The medication relieved retrosternal pain but the patient got acute headache. What is the likely mechanism of this side effect?
a. Inhibited formation of mediators in brain
b. Intracranial pressure rise
c. Phosphodiesterase block
d. ?-adrenoreceptor block
e. Reduced accumulation of calcium ions

77. A patient with toxic paralysis of respiratory centre was given several cordiamin injections intended to stimulate the respiratory centre. What side effect may arise?
a. Tonic convulsions
b. Collapse
c. Bronchiospasm
d. Clonic convulsions
e. Arrhythmia

78. A mans heart rate was measured according to his pulse. It equaled 120 bpm. What is the duration of cardiac cycle?
a. 0,8 s
b. 0,7 s
c. 0,5 s
d. 0,9 s
e. 1,0 s

79. After parenteral introduction of a medication a patient fell into a coma. He had Cheyne-Stokes respiration, apparently miotic pupils. The patellar reflex was preserved. What medication might have caused the intoxication?
a. Phenobarbital
b. Morphine hydrochloride
c. Diazepam
d. Aminazine
e. Analgine

80. Microscopic study of an endocrine gland revealed that its parenchyma consisted of follicular structures. Their wall was formed by monolayer cubic epithelium, and their cavity was filled up with oxyphilic substance. What hormon is secreted by this gland?
a. Cortisol
b. Aldosterone
c. Thyroxin
d. Parathyrin
e. Oxytocin

81. What chnges will be observed in an isolated heart after introduction of adrenaline into the perfusion solution?
a. Increase of heart force
b. Decrease of heart force
c. Increase of heart rate and force
d. Diastolic arrest
e. Increase of heart rate

82. An embryon has signs of disturbed process of dorsal mesoderm segmentation and somite generation. What part of skin is most likely to have developmental abnormalities?
a. Hair
b. Epidermis

c. Sudoriferous glands
d. Derma
e. Sebaceous glands

83. A patient has coronary heart disease. For its treatment he was prescribed an antianginal drug that activates guanylate cyclase and accumulates cyclic guanosine monophosphate in the miocardium cells. What drug is it?
a. Panangine
b. Dipiridamol
c. Isosorbide mononitrate
d. Validol
e. Verapamil

84. A patient with ventricular arrhythmia was admitted to the cardiological department. What drug should be administered?
a. Proserin
b. Amiodarone
c. Drotaverine
d. Amlodipine
e. Aminazine

85. A patient with essential hypertension was admitted to the cardiological department. In order to lower arterial pressure a doctor prescribed a drug that blocks beta1 and beta2-adrenoreceptors. What drug is it?
a. Propranolol
b. Celecoxib
c. Indometacin
d. Prednisolone
e. Proserin

86. A patient with myocardium infarction was delivered to the resuscitation department. What drug should be injected to the patient for prophylaxis of pain shock?
a. Analgin
b. Celecoxib
c. Naloxone
d. Promedol
e. Paracetamol

87. A patient with myocardium infarction was admitted to the resuscitation department. What drug should be injected to the patient in order to prevent thrombosis?
a. Dimedrol
b. Heparin
c. Thyroxine
d. Chingamin
e. Biseptol-480

88. A patient suffers from chronic left-ventricular insufficiency. What drug should be prescribed?
a. Pyracetam
b. Digoxin
c. Etimizol
d. Bemegride
e. Vinpocetine

89. A patient suffering from non-insulin-dependent diabetes mellitus was prescribed glibenclamid internally. What is the mechanism of its hypoglycemic action?
a. It inhibits gluconeogenesis in liver
b. It inhibits glucose absorption in the bowels
c. It inhibits alpha glucosidase and polysaccharide breakdown

d. It stimulates generation of endogenous insulin by beta cells
e. It intensifies utilization of glucose by peripheral tissues

90. A patient with gastric ulcer underwent a course of treatment, which led to digestion normalization, pain relief, better mood. However in a few weeks the epigastric pain as well as heartburn and sour eructation recurred. Such course of the disease can be characterized as:
a. Prodromal period
b. Latent period
c. Remission period
d. Complication
e. Relapse

91. A man has an accelerated heart rate, mydriatic pupils, dry mouth. It is caused by activation of the following function regulating system:
a. Vagoinsular
b. Hypothalamo-pituitary-adrenal
c. Parasympathetic
d. Metasympathetic
e. Sympathetic

92. After mouth opening the mouth closed reflectory. What receptors initiate this reflex?
a. Proprioceptors of elevator muscles of mandible
b. Gustatory receptors
c. Mechanoreceptors of oral mucous membrane
d. Periodontium receptors
e. Proprioceptors of depressor muscles of mandible

93. After mouth closing and teeth clenching the mouth opens reflectory. What receptots initiate this reflex?
a. Proprioceptors of depressor muscles of lower jaw
b. Gustatory receptors
c. Mechanoreceptors of oral mucous membrane
d. Receptors of periodontium
e. Proprioceptors of elevator muscles of lower jaw

94. Cystinuria in humans shows itself in form of cystine stones in kidneys (homozygotes) or else an increased rate of cystine in urine (heterozygotes). Cystinuria is a monogenic disease. Specify the type of interaction between cystinuria genes and normal rate of cystine in urine:
a. Epistasis
b. Complementarity
c. Codomination
d. Semidominance
e. Complete dominance

95. A child has physical and mental retardation, serious abnormalities in connective tissue of internal organs; urine contains keratan sulfates. This is caused by metabolic disorder of the following substance:
a. Glycosaminoglycan
b. Elastin
c. Hyaluronic acid
d. Fibronectin
e. Collagen

96. An electrical cardiostimulator was implanted to a 75 y.o. man with heart rate of 40 bpm. After that heart rate rose up to 70 bpm. Cardiostumulator assumed the function of the following heart part:
a. Purkinjes fibers
b. Sinoatrial node
c. His bundle branches

d. Atrioventricular node
e. His bundle fibers

97. A 60-year-old female patient presents with hypoactivity of the principal digestive enzyme of saliva. This is usually accompanied by disturbed primary hydrolysis of:
a. Fats
b. Cellulose
c. Lactose
d. Carbohydrates
e. Proteins

98. A patient who has been taking a certain drug for a long time cannot discontinue the use of it because this causes psychic and somatic disfunctions. The syndrome occuring at refraining from the use of a drug is called:
a. Idiosyncrasy
b. Sensitization
c. Abstinence
d. Tachyphylaxis
e. Cumulation

99. A 49-year-old woman spent a lot of time standing. As a result of it she got leg edema. What is the most likely cause of the edema?
a. Increase in hydrostatic pressure of blood in veins
b. Decrease in hydrostatic pressure of blood in arteries
c. Increase in systemic arterial pressure
d. Increase in oncotic pressure of blood plasma
e. Decrease in hydrostatic pressure of blood in veins

100. A man who has been staying in a stuffy room for a long time lost consciousness. He regained consciousnes after inhalation of ammonia spirit vapour. This substances effect is connected with direct influence upon the following structures:
a. Capacitive vessels
b. Receptors of upper airways
c. Respiratory centre
d. Vasculomotor centre
e. Resistive vessels

101. A 40 y.o. patient had a maxillofacial trauma that resulted in disturbed function of sublingual and submaxillary glands on the left - the glands began to produce some viscous saliva. What nerves function is disturbed?
a. Glossopharyngeal
b. Sublingual
c. Facial
d. Trifacial
e. Vagus

102. A patient has been suffering from diabetes mellitus for 5 years. As a result of not keeping to a diet the patient passed into a comatose state. Emergency doctor injected him glucose. The patients state got better. What is the most probable type of coma in this case?
a. Hypoglycemic
b. Hyperglycemic
c. Hypothyreoid
d. Hepatic
e. Acidotic

103. Being at a dentist a patient had an attack of stenocardia. What drug from the nitrate group should be applied in this case?
a. Validol

b. Nitroglycerine
c. Talinolole
d. Menthol
e. Erinit

104. A patient with fracture of femoral bone in the area of surgical neck got symptoms of acute dextroventricular insufficiency as a result of pulmonary embolism. What type of embolism is it?
a. Tissue
b. Fat
c. Gas
d. Metastatic
e. Air

105. A newborn child gains weight very slowly, his urine contains too much orotic acid that is indicative of disturbed synthesis of pyrimidine nucleotides. What metabolite should be used in order to normalize metabolism?
a. Guanosine
b. Adenosine
c. Uridine
d. Thymidine
e. Histidine

106. During embryogenesis the epithelial band also known as vestibular plate gives rise to development of vestibule of mouth. What biological mechanism of the programmed death of cells provides growth of buccolabial sulcus from epithelial plate?
a. Meiosis
b. Necrosis
c. Apoptosis
d. Paranecrosis
e. Amitosis

107. A child with renal insufficiency exhibits delayed teeth eruption. This is most likely caused by the abnormal formation of the following substance:
a. ?-ketoglutarate
b. Hydroxylysine
c. Glycocyamine
d. Glutamate
e. 1,25 (OH)2D3

108. A patient has allergic rhinitis with profuse mucous discharges, itching, frequent sneezing. What drug should be chosen if you know that it selectively blocks histamine receptors?
a. Adrenaline hydrochloride
b. Mesatonum
c. Loratadine
d. Naphthizin
e. Prednisolone

109. A patient with myocardium infarction was admitted to the cardiological department. In order to relieve his pain it was decided to potentiate action of fentanyl by a certain neuroleptic. What is the most suitable neuroleptic for neuroleptanalgesia?
a. Aminazine
b. Haloperidol
c. Sulpiride
d. Droperidol
e. Triftazine

110. Epithelium regeneration of mucous membrane of oral cavity (cell reproduction) was accompanied by semiconservative DNA replication (selfreproduction). Nucleotides of a new DNA chain

are complementary to:

a. Maternal chain

b. DNA-polymerase enzyme

c. RNA-polymerase enzyme

d. Introns

e. Sense codons

111. A young woman has entered a production unit where strongly smelled of paints and varnishes and had bronchospasm. This reflex was provoked by irritation of the following receptors:

a. Pleural receptors

b. Juxtaglomerular

c. Irritant

d. Central chemoreceptors

e. Peripheral chemoreceptors

112. Hurtnups disease is caused by point mutation of only one gene. This results in abnormal absorption of tryptophane in the intestine as well as its abnormal reabsorption in renal tubules. This causes synchronous disorders in digestive and urinary excretion systems. What genetic phenomenon is observed in this case?

a. Codominance

b. Semidominance

c. Complementary interaction

d. Polymery

e. Pleiotropy

113. A 60-year-old patient presents with intestinal hypoperistalsis. Which of the following foodstuffs will stimulate peristalsis most of all?

a. White bread

b. Lard

c. Tea

d. Brown bred

e. Meat

114. A patient was delivered to the admission ward with poisoning with an insecticide of anticholinesterase action. What drug able to block muscarinic cholinoreceptors should be prescribed?

a. Dithylinum

b. Pilocarpine hydrochloride

c. Atropine sulfate

d. Benzohexonium

e. Mesatonum

115. A student has been staying in a badly ventilated room for a long time that resulted in acceleration of respiratory rate. What receptors were the first to react to the increased concentration of carbonic cid in the air?

a. Central chemoreceptors

b. Irritant receptors

c. Olfactory receptors

d. Juxtaglomerular receptors

e. Vascular chemoreceptors

116. An isolated muscle fiber is under experiment. It was ascertained that excitement threshold of a cell was significantly lowered. What might have caused this phenomenon?

a. Inactivation of membrane sodium channels

b. Activation of membrane potassium channels

c. Activation of membrane sodium channels

d. Inactivation of membrane potassium channels

e. Blockade of energy production in the cell

117. During an experiment it is required to estimate the rate of cell excitability. For this purpose it would be rational to determine:

a. Amplitude of action potential
b. Duration of action potential
c. Rest potential
d. Critical level of depolarization
e. Depolarization threshold

118. A patient in a cardiological department has arrhythmia. A doctor administered him amyodaron. What is the main mechanism of amyodarons antiarrhythmic action?

a. It blocks mostly potassium channels
b. It stimulates histamine receptors
c. It alters myocardium susceptibility to the acetylcholine
d. It activates serotonin receptors
e. It inhibits cholinoreceptors

119. As a result of expression of some genome components the embryo cells acquire typical morphological, biochemical and functional properties. Name this process:

a. Reception
b. Capacitation
c. Differentiation
d. Determination
e. Induction

120. A patient with acute poisoning with morphine was delivered to the hospital ward. What specific antagonist of narcotic analgesics is to be applied in this case?

a. Paracetamol
b. Digoxin
c. Unithiol
d. Naloxone
e. Methacin

121. A patient with edemata was prescribed a K+-retaining diuretic - aldosterone antagonist. What drug is it?

a. Alopurinole
b. Spironolactone
c. Procainamide hydrochloride
d. Digoxin
e. Clonidine

122. Patients with erythropoietic porphyria (Gunthers disease) are known to have photoesthetic skin, red urine. In the ultraviolet light their teeth exhibit bright red fluorescence. This disease is associated with deficiency of the following enzyme:

a. Delta-aminolevulinate synthase
b. Uroporphyrinogen-I-synthase
c. Uroporphyrinogen-III-cosynthase
d. Uroporphyrinogen decarboxylase
e. Ferrochelatase

123. To subdue the fever and relieve tooth ache a patient was prescribed paracetamol. What is the action mechanism of this medication?

a. Phosphodiesterase blocking
b. Cycloxygenase blocking
c. Lipoxygenase blocking
d. Monoamine oxidase blocking
e. Cholinesterase blocking

124. A dentist was examining a patient and noticed excessive salivation. The dentist applied a

medication inducing dryness of oral cavity. What medication is it?

a. Galantamine

b. Atropine sulfate

c. Pilocarpine hydrochloride

d. Phentolamine

e. Proserin

125. Microscopic analysis of human heart cells revealed some oval oganellas, their tunic being formed by two membranes: the external one is smooth, and the internal one forms crista. Biochemical analysis determined the presence of ATP-synthetase enzyme. What organellas were analysed?

a. Centrosomes

b. Mitochondrions

c. Ribosomes

d. Lysosomes

e. Endoplasmic reticulum

126. As a result of iodine deficiency in foodstuffs Transcarpathian people often have endemic goiter. This disease is caused by the following type of variability:

a. Modification

b. Combinatorial

c. Correlative

d. Ontogenetic

e. Mutational

127. Enamel hypoplasia is caused by a dominant gene localized in the X chromosome. Mother has a normal enamel, and father has enamel hypoplasia. Which of children will have this anomaly?

a. All the children

b. Half of the daughters

c. Half of the sons

d. Only the daughters

e. Only the sons

128. In the perianal folds of a 5-year-old girl mother found white worms causing itch and anxiety, and took them to the laboratory. The study revealed white filament-like helminths 0,5-1 cm long, with pointed, sometimes twisted, ends. What diagnosis can be made?

a. Teniasis

b. Difilobotrioz

c. Diphyllobothriasis

d. Ascariasis

e. Opisthorchiasis

129. A man suffering from a hereditary disease married a healthy woman. They got 5 children, three girls and two boys. All the girls inherited their father’s disease. What is the type of the disease inheritance?

a. Asutosomal dominant

b. Autosomal recessive

c. Dominant, X-linked

d. Y-linked

e. Recessive, X-linked

130. In the vermiform appendix there was found a white helminth, 40 mm long with thin filiform forward end. Ecscrements contained oval eggs with plugs at the poles. Determine the kind of helminth:

a. Seatworm

b. Hookworm

c. Threadworm

d. Whipworm

e. Ascarid

131. Medical examination of some youths revealed in their axillary regions grey insects 1,0-1,5 mm large, with short broad body covered with hair. What insects were revealed?

a. Itch mite
b. Pubic louse
c. Head louse
d. Flea
e. Bed bug

132. Examination of a man revealed a protozoan disease that affected brain and caused vision loss. Blood analysis revealed unicellular half-moon-shaped organisms with pointed end. The causative agent of this disease is:

a. Lamblia
b. Leishmania
c. Toxoplasma
d. Amoeba
e. Trichmonad

133. Excessive hairiness of auricles (hypertrichosis) is determined by a gene which is localized in Y-chromosome. Father has this feature. What is the probability of the fact that the boy will be born with such anomaly?

a. 25%
b. 0%
c. 100%
d. 35%
e. 75%

134. There are trisome, translocational and mosaic forms of Downs Syndrome. What method of human genetics can be applied to differentiate the said forms of Downs syndrome?

a. Cytogenetical
b. Genealogical
c. Population-statistical
d. Biochemical
e. Gemellary

135. Very big teeth is an Y-linked sign. Mothers teeth are of normal size, and her sons teeth are very big. Probability of fathers having very large teeth is:

a. 50%
b. 75%
c. 100%
d. 25%
e. 12,5%

136. An 8 month old child has non-closed palate, a number of eye defects, microcephaly, disorder of cardiovascular system. Cytogenetic analysis revealed 47 chromosomes with an additional 13th chromosome. What diagnosis can be made on the basis of clinical observations and cytogenetic examinations?

a. Cat cry syndrome
b. Downs syndrome
c. Klinefelters syndrome
d. Pataus syndrome
e. Edwards syndrome

137. A patient with suspected liver abscess was admitted to the surgical department. The patient had been staying for a long time on business in one of african countries and fell repeatedly ill with acute gastrointestinal disorders. What protozoal disease may the patient be now ill with?

a. Trypanosomosis
b. Malaria
c. Toxoplasmosis

d. Amebiasis
e. Leishmaniasis

138. Examination of a 7 year old child revealed the following symptoms: small height, broad roundish face, closely placed eyes with narrow palpebral fissures, half-open mouth. Valvular defect has been also diagnosed. These clinical presentations are most likely typical for Downs syndrome. Name the cause of such pathology:
a. Partial monosomy
b. Nondisjunction of sexual chromosomes
c. Trisomy of the 13 chromosome
d. X-chromosome trisonomy
e. Trisomy of the 21 chromosome

139. A child complains of having an itch in occipital and temporal region of head. After examination his mother found superficial ulcers as a result of scratching and white nits in the hair. Name the pathogenic organism:
a. Head louse
b. Human flea
c. Pubic louse
d. Screwworm fly
e. Body louse

140. The students studied pecularities of genetic code and found out that there are aminoacids corresponded by 6 codons, 5 aminoacids - 4 different codons. Other aminoacids are codified by three or two codons and only two aminoacids are codified by one codon. What pecularity of genetic code did the students find out?
a. Versatility
b. Unidirectionality
c. Triplety
d. Redundancy
e. Collinearity

141. A group of students has representatives of different races. One of the students has straight black hair and overhanging skin fold of superior eyelid - epicanthus. What race does this student most probably represent?
a. Ethiopian
b. Mongoloid
c. Europeoid
d. Negroid
e. Australoid

142. Examination of a pregnant woman who has been taking alcohol revealed diturbed anlage of ectoderma during the fetal life. What derivatives of this leaf have defects?
a. Neural tube
b. Bowels epithelium
c. Sexual glands
d. Liver
e. Kidneys

143. In a genetical laboratory in course of work with DNA molecules of white rats of Wistars line a nucleotide was substituted for another one. At that only one aminoacid was substituded in the peptide. This result is caused by the following mutation:
a. Deletion
b. Displacement of reading frame
c. Translocation
d. Transversion
e. Duplication

144. A 1,5 year old child was taken to the hospital. The examination revealed dementia, disorder of motor functions regulation, hypopigmentation of skin, high rate of phenylalanine in blood. What is the most probable diagnosis?

a. Downs syndrome
b. Mucoviscidosis
c. Galactosemia
d. Tyrosinosis
e. Phenylketonuria

145. A wide cleft between incisors of both mother and father is the dominant feature. They are both homozygous. What genetic regularity will their children have?

a. Uniformity of first generation hybrids
b. Independent inheritance of feature
c. Linked inheritance
d. Non-linked inheritance
e. Hybrid segregation by phenotype

146. Father bought some pork at the market. What disease may catch members of his family provided that this meat didnt pass the veterinary control?

a. Hymenolepiasis
b. Beef tapeworm infection
c. Pork tapeworm infection
d. Echinococcosis
e. Liver fluke infection

147. Examination of a patient with hepatolenticular degeneration revealed that synthesis of ceruloplasmin protein has a defect. What organelles is this defect connected with?

a. Lysosomes
b. Granular endoplasmic reticulum
c. Mitochondrions
d. Agranular endoplasmic reticulum
e. Golgi complex

148. It is known that the gene responsible for the development of the MN blood groups has two allelic states. If the gene M is considered as the initial gene, the allelic gene N appeared due to:

a. DNA replication
b. Crossing over
c. Gene combinations
d. DNA repair
e. Mutations

149. A newborn child has microcephalia. Doctors consider that this is the result of mothers taking actinomycin D during the pregnancy. What embryonal leaf was influenced by this teratogen?

a. All leaves
b. Mesoderma
c. Entoderma and mesoderma
d. Ectoderma
e. Entoderma

150. Pigmentation intensity of human skin is controlled by a few independent dominant genes. It is known that pigmentation is the more intensive, the bigger quantity of these genes. What is the type of interaction between these genes?

a. Polymery
b. Epistasis
c. Complementarity
d. Codominancy
e. Pleiotropy

151. During postembryonal haemopoiesis in the red bone marrow the cells of one of the cellular differons demonstrate a gradual decrease in cytoplasmic basophilia as well as an increase in oxyphilia, the nucleus is being forced out. Such morphological changes are typical for the following haemopoiesis type:

a. Neutrophil cytopoiesis
b. Lymphopoiesis
c. Erythropoiesis
d. Eosinophil cytopoiesis
e. Basophil cytopoiesis

152. Examination of uterine cavity revealed an embryonated ovum that wasnt attached to the endometrium. The embryo is in the following stage of development:

a. Zygote
b. Gastrula
c. Neurula
d. Blastocyst
e. Morula

153. During embryogenesis trophoblast develops into an organ rudiment that has endocrinal function. What rudiment is it?

a. Umbillical cord
b. Villous chorion
c. Yolk sac
d. Amnion
e. Allantois

154. A female patient consulted a physician about digestive disorder, extended abdominal pain. Examination revealed drastic decrease in hemoglobin concentration. It is known from the anamnesis that while living in the Far East the patient used to eat freshly-salted caviar. Some relatives living with her had the similar condition. What is the most likely diagnosis?

a. Teniasis
b. Echinococcosis
c. Diphyllobothriasis
d. Trichiniasis
e. Ascaridiasis

155. It is known that people who permanently live in highland have an increased concentration of erythrocytes per each blood volume unit. Owing to this fact blood can optimally fulfil the following function:

a. Gas transport
b. Haemostasis participation
c. Maintenance of ionic equilibrium
d. Maintenance of acid-base balance
e. Amino acid transport

156. A mountain climber spent a long time in the mountains. Erythrocyte number has risen from 5,0x1012/l up to 6,0x1012/l. What factor stimulated erythropoiesis?

a. Increase of O2 in the cells
b. Decrease of O2 in the arterial blood
c. Decrease of O2 in the venous blood
d. Increase of O2 in the arterial blood
e. Increase of O2 in the venous blood

157. While exercising on a bicycle ergometer a sportsman was trying to choose such a load that would allow him to achieve the maximal performance of his muscles. What load intensity is required in this case?

a. Minimal
b. Maximal

c. Middle
d. Alternating minimal and maximal
e. Continuous minimal

158. Researchers studied speed of excitement conduction in different areas of an isolated heart. Which area demonstrated the lowest speed?
a. Ventricular myocardium
b. Atrioventricular node
c. Purkinjes fibers
d. His bundle
e. Atrial myocardium

159. Dentists widely apply local anaesthesia adding adrenalin to an anaesthetic solution. What is the purpose of this method?
a. Lowering of arterial pressure
b. Local vasodilatation
c. Local vasoconstriction
d. Local reduction of vascular resistance
e. Microcirculation improvement

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

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

162. A patient has hyperkaliemia and hyponatremia. Such changes might be caused by hyposecretion of the following hormone:
a. Vasopressin
b. Parathormone
c. Natriuretic
d. Aldosterone
e. Cortisol

163. A patient ill with chronic glomerulonephritis has a disturbed incretory function of kidneys. It will result in the deficit of the following blood corpuscles:
a. Leukocytes and thrombocytes
b. Erythrocytes and leukocytes
c. Leukocytes
d. Thrombocytes
e. Erythrocytes

164. In the perianal folds of a 5-year-old girl her mother has found some white "worms" that caused itch and anxiety in the child. The "worms" were sent to the laboratory. During examination the physician saw white filiform helminths 0,5-1 cm long, with pointed ends, some helminths had twisted ends. What is the most likely diagnosis?
a. Diphyllobothriasis
b. Ascaridiasis

c. Opisthorchiasis
d. Enterobiasis
e. Teniasis

165. Analysis of a patients saliva revealed high concentration of lactate. This is most probably caused by activation of the following process:
a. Glycogen breakdown
b. Aerobic glucose breakdown
c. Anaerobic glucose breakdown
d. Carbohydrate hydrolysis
e. Glucose-lactate cycle

166. A patient consulted a doctor about the intensive skin itch, especially between fingers, in axillary creases, in the inferior part of belly. During the skin examination there were found twisting whitish tracts with speckles at the end of them. What disease are these clinical presentations typical for?
a. Miasis
b. Scabies
c. Dermatotropic leishmaniosis
d. Pediculosis
e. Demodicosis

167. Blood of a child and putative father was referred to forensic medical examination for affiliation. What chemical components should be identified in the blood under study?
a. DNA
b. Ribosomal RNA
c. SnRNA
d. Messenger RNA
e. Transfer RNA

168. A patient has been diagnosed with alkaptonuria. This pathology is caused by deficiency of the following enzyme:
a. Oxidase of homogentisic acid
b. Glutamate dehydrogenase
c. DOPA decarboxylase
d. Pyruvate dehydrogenase
e. Phenylalanine hydroxylase

169. Medical examination at the military registration and enlistment office revealed that a 15-year-old boy was high, with eunuchoid body proportions, gynecomastia, female pattern of pubic hair distribution. The boy had also fat deposits on the thighs, no facial hair, high voice, subnormal intelligence quotient. Which karyotype corresponds with this disease?
a. 46, XY
b. 47, XXX
c. 45, XO
d. 46, XX
e. 47, XXY

170. At an altitude of 14000 m an aircraft experienced a sudden loss of cabin pressure. The pilot must have developed the following type of embolism:
a. Foreign body embolism
b. Air embolism
c. Fat embolism
d. Gaseous
e. Thromboembolism

171. A 58 year old female patient had to be prepared to cholecystectomy. Complex of premedication drugs included benzohexonium. What is the function of this drug in anaesthesia?
a. Functional block of visceral reflexes

b. Relaxation of smooth muscles
c. Intensification of retrograde amnesia
d. Reduction of excitement phase
e. Relaxation of skeletal muscles

172. A patient had an attack of bronchial asthma in the dentists office. The attack was arrested by salbutamol. This drug relates to the following group of therapeutic agents:
a. alpha-adrenomimetics
b. Sympatholytics
c. alpha-beta-adrenomimetics
d. beta2-adrenomimetics
e. beta1-beta2-adrenomimetics

173. All nonsteroidal anti-inflammatory drugs can be harmful for stomach mucous membrane. In order to find substances that dont cause such complication it is necessary to know factors it is connected with. What molecular substrate should be less affected in order to reduce intensity of this complication?
a. Cyclooxygenase 1
b. Kallikrein
c. Adenylate cyclase
d. Lysosomal enzymes
e. Cyclooxygenase 2

174. In a cell the mutation of the first exon of structural gene took place. The number of nucleotide pairs has decreased - 250 pairs instead of 290. Determine the type of mutation:
a. Nonsense-mutation
b. Deletion
c. Duplication
d. Inversion
e. Translocation

175. A patient with acute duodenal ulcer was admitted to the hospital. Analysis of gastric juice revealed hyperfunction of secretion and acid-forming in stomach. Choose a drug that can reduce secretory function of stomach due to inhibition of H2-receptors:
a. Extract of dry belladonna
b. Methacin
c. Platyphyllin
d. Ranitidine
e. Atropine

176. A patient complains about shin pain which is getting worse during walking. Objectively: there is an edema and reddening along the vein. A doctor administered a direct anticoagulant to be applied topically. What drug can be applied for this purpose?
a. Butadion ointment
b. Thrombin
c. Salicylic ointment
d. Troxevasin ointment
e. Heparin ointment

177. A patient was administered clonidine to be taken parenterally in case of abrupt rise of arterial pressure. What is its mechanism of action?
a. Block of nicotinic cholinoreceptors of ganglia
b. Block of alpha-1-adrenoreceptors
c. Stimulation of central imidazole-1-receptors
d. Stimulation of central alpha-2-adrenoreceptors
e. Block of alpha-1- and alpha-2-adrenoreceptors

178. A patient who attempted suicide in a state of serious depression was delivered to a hospital by

an ambulance. What drugs should be administered?

a. Antidepressants
b. Neuroleptics
c. Lithium salts
d. Tranquillizers
e. Sedative

179. A patient has acute cardiac insufficiency resulting from essential hypertension. What drug is the most appropriate in this case?

a. Cordiamin
b. Corglycon
c. Cardiovalene
d. Digoxin
e. Caffeine

180. A patient noticed symptoms of approaching attack of bronchial asthma and took several tablets one by one at short intervals out of the doctors control. Short-term improvement of his condition came only after taking the first two tablets. Next intakes of a drug didnt improve his condition. Reduction of the drug effectiveness was caused by:

a. Idiosyncrasy
b. Tachyphylaxis
c. Addiction
d. Cumulation
e. Dependence

181. While being at the dentists a patient had an attack of bronchial asthma. The dentist applied a beta-adrenomimetic drug in form of inhalations. What drug was applied?

a. Atropine sulfate
b. Ephedrine hydrochloride
c. Aminophylline
d. Adrenaline hydrochloride
e. Salbutamol

182. It was revealed that T-lymphocytes were affected by HIV. Virus enzyme - reverse transcriptase (RNA-dependent DNA polymerase) - catalyzes the synthesis of:

a. DNA on the matrix of virus mRNA
b. DNA on virus ribosomal RNA
c. mRNA on the matrix of virus protein
d. Viral DNA on DNA matrix
e. Virus informational RNA on the matrix of DNA

183. The air in a room has increased concentration of carbonic acid. What respiratory changes (depth and rate) will be observed in a person after entering this room?

a. Increase in depth and rate
b. Increase in depth
c. Increase in rate
d. Decrease in rate
e. Decrease in depth

184. Rheography of an 18 year old student during exercise showed redistribution of blood flow between organs. The peak blood flow will be observed in the following vessels:

a. Kidneys
b. Gastrointestinal tract
c. Liver
d. Cerebrum
e. Skeletal muscles

185. A woman delivered a dead child with multiple developmental defects. What protozoan disease

might have caused the intrauterine death?

a. Toxoplasmosis
b. Malaria
c. Lambliasis
d. Amebiasis
e. Leishmaniasis

186. Examination of a 35-year-old patient included histological analysis of the red bone marrow punctate that revealed a significant increase in the megakaryocyte number. This will cause the following alterations in the peripheral blood:

a. Thrombocytopenia
b. Thrombocytosis
c. Leukopenia
d. Agranulocytosis
e. Leukocytosis

187. While under barbituric anaesthesia a 65-year-old male patient developed respiratory inhibition. Anesthesiologist made him a 10 ml intravenous injection of 0,5% bemegride solution. The patients condition got better, the pulmonary ventilation volume increased. What phenomenon underlies the interaction of these medications?

a. Direct synergism
b. Indirect synergism
c. Indirect antagonism
d. Unilateral antagonism
e. Direct antagonism

188. A patient suffers from bradyarrhythmia caused by hypertension. What drug should be administered?

a. Reserpine
b. Methyldopa
c. Clonidine
d. Papaverine hydrochloride
e. Platyphyllin hydrotartate

189. You are studying functioning of a bacteria operon. The operator gene has been released from the repressor gene. Immediately after this the following process will start in the cell:

a. Replication
b. Translation
c. Transcription
d. Processing
e. Repression

190. A patient consulted an urologist about pain during urination. Analysis of his urine taken in the daytime revealed eggs with a characteristic sharp point. It is known from the anamnesis that the patient has recently returned from Australia. What is the most likely diagnosis?

a. Dicroceliasis
b. Urogenital schistosomiasis
c. Japanese schistosomiasis
d. Intestinal schistosomiasis
e. Opisthorchiasis

191. A female patient suffering from acute bronchitis complains about respiratory obstruction and cough with thick viscous sputum. She was prescribed a mucolytic agent that stimulates surfactant synthesis. What mucolytic agent was prescribed?

a. Glaucin
b. Theophylline
c. Sodium hydrocarbonate
d. Morphine hydrochloride

e. Ambroxolum

192. A 60-year-old patient consulted a doctor about retrosternal pain arising immediately after physical exercise. He was prescribed nitroglycerin. The medication relieved retrosternal pain but the patient got acute headache. What is the likely mechanism of this side effect?

a. Phosphodiesterase block
b. Alpha-adrenoreceptor block
c. Intracranial pressure rise
d. Reduced accumulation of calcium ions
e. Inhibited formation of mediators in brain

193. A patient with toxic paralysis of respiratory centre was given several cordiamin injections intended to stimulate the respiratory centre. What side effect may arise?

a. Arrhythmia
b. Tonic convulsions
c. Clonic convulsions
d. Collapse
e. Bronchiospasm

194. In the armpits of a patient the small (1-1,5 mm), dorsoventrally flattened, wingless, blood-sucking insects. Their larvae developed in the armpits too. What disease is caused by these insects?

a. Phthiriasis
b. Chagas disease
c. Relapsing fever
d. Plague
e. Sleeping sickness

195. After parenteral introduction of a medication a patient fell into a coma. He had Cheyne-Stokes respiration, apparently miotic pupils. The patellar reflex was preserved. What medication might have caused the intoxication?

a. Analgine
b. Phenobarbital
c. Aminazine
d. Diazepam
e. Morphine hydrochloride

196. Microscopic study of an endocrine gland revealed that its parenchyma consisted of follicular structures. Their wall was formed by monolayer cubic epithelium, and their cavity was filled up with oxyphilic substance. What hormon is secreted by this gland?

a. Oxytocin
b. Thyroxin
c. Cortisol
d. Aldosterone
e. Parathyrin

197. What chnges will be observed in an isolated heart after introduction of adrenaline into the perfusion solution?

a. Decrease of heart force
b. Diastolic arrest
c. Increase of heart rate
d. Increase of heart rate and force
e. Increase of heart force

198. An embryon has signs of disturbed process of dorsal mesoderm segmentation and somite generation. What part of skin is most likely to have developmental abnormalities?

a. Sudoriferous glands
b. Derma

c. Sebaceous glands
d. Hair
e. Epidermis

199. A patient with ventricular arrhythmia was admitted to the cardiological department. What drug should be administered?
a. Aminazine
b. Proserin
c. Amlodipine
d. Drotaverine
e. Amiodarone

200. A patient with essential hypertension was admitted to the cardiological department. In order to lower arterial pressure a doctor prescribed a drug that blocks beta-1 and beta-2-adrenoreceptors. What drug is it?
a. Propranolol
b. Celecoxib
c. Indometacin
d. Prednisolone
e. Proserin

201. A patient with myocardium infarction was admitted to the resuscitation department. What drug should be injected to the patient in order to prevent thrombosis?
a. Biseptol-480
b. Dimedrol
c. Chingamin
d. Thyroxine
e. Heparin

202. A patient suffering from non-insulin-dependent diabetes mellitus was prescribed glibenclamid internally. What is the mechanism of its hypoglycemic action?
a. It stimulates generation of endogenous insulin by beta cells
b. It intensifies utilization of glucose by peripheral tissues
c. It inhibits alpha glucosidase and polysaccharide breakdown
d. It inhibits glucose absorption in the bowels
e. It inhibits gluconeogenesis in liver

203. A patient with gastric ulcer underwent a course of treatment, which led to digestion normalization, pain relief, better mood. However in a few weeks the epigastric pain as well as heartburn and sour eructation recurred. Such course of the disease can be characterized as:
a. Complication
b. Remission period
c. Relapse
d. Prodromal period
e. Latent period

204. A man has an accelerated heart rate, mydriatic pupils, dry mouth. It is caused by activation of the following function regulating system:
a. Hypothalamo-pituitary-adrenal
b. Sympathetic
c. Metasympathetic
d. Parasympathetic
e. Vagoinsular

205. After mouth opening the mouth closed reflectory. What receptors initiate this reflex?
a. Gustatory receptors
b. Proprioceptors of depressor muscles of mandible
c. Proprioceptors of elevator muscles of mandible

d. Periodontium receptors
e. Mechanoreceptors of oral mucous membrane

206. A child has physical and mental retardation, serious abnormalities in connective tissue of internal organs; urine contains keratan sulfates. This is caused by metabolic disorder of the following substance:
a. Fibronectin
b. Hyaluronic acid
c. Collagen
d. Elastin
e. Glycosaminoglycan

207. An electrical cardiostimulator was implanted to a 75 y.o. man with heart rate of 40 bpm. After that heart rate rose up to 70 bpm. Cardiostumulator assumed the function of the following heart part:
a. Sinoatrial node
b. His bundle branches
c. Purkinjes fibers
d. His bundle fibers
e. Atrioventricular node

208. A 60-year-old female patient presents with hypoactivity of the principal digestive enzyme of saliva. This is usually accompanied by disturbed primary hydrolysis of:
a. Proteins
b. Fats
c. Carbohydrates
d. Cellulose
e. Lactose

209. A patient who has been taking a certain drug for a long time cannot discontinue the use of it because this causes psychic and somatic disfunctions. The syndrome occuring at refraining from the use of a drug is called:
a. Cumulation
b. Abstinence
c. Idiosyncrasy
d. Sensitization
e. Tachyphylaxis

210. A 49-year-old woman spent a lot of time standing. As a result of it she got leg edema. What is the most likely cause of the edema?
a. Increase in oncotic pressure of blood plasma
b. Increase in systemic arterial pressure
c. Decrease in hydrostatic pressure of blood in veins
d. Decrease in hydrostatic pressure of blood in arteries
e. Increase in hydrostatic pressure of blood in veins

211. A man who has been staying in a stuffy room for a long time lost consciousness. He regained consciousnes after inhalation of ammonia spirit vapour. This substances effect is connected with direct influence upon the following structures:
a. Respiratory centre
b. Vasculomotor centre
c. Receptors of upper airways
d. Resistive vessels
e. Capacitive vessels

212. A 40 y.o. patient had a maxillofacial trauma that resulted in disturbed function of sublingual and submaxillary glands on the left - the glands began to produce some viscous saliva. What nerves function is disturbed?
a. Vagus

b. Facial
c. Glossopharyngeal
d. Sublingual
e. Trifacial

213. A patient has been suffering from diabetes mellitus for 5 years. As a result of not keeping to a diet the patient passed into a comatose state. Emergency doctor injected him glucose. The patients state got better. What is the most probable type of coma in this case?
a. Acidotic
b. Hepatic
c. Hypothyreoid
d. Hypoglycemic
e. Hyperglycemic

214. Being at a dentist a patient had an attack of stenocardia. What drug from the nitrate group should be applied in this case?
a. Nitroglycerine
b. Talinolole
c. Validol
d. Erinit
e. Menthol

215. A newborn child gains weight very slowly, his urine contains too much orotic acid that is indicative of disturbed synthesis of pyrimidine nucleotides. What metabolite should be used in order to normalize metabolism?
a. Uridine
b. Guanosine
c. Histidine
d. Thymidine
e. Adenosine

216. During embryogenesis the epithelial band also known as vestibular plate gives rise to development of vestibule of mouth. What biological mechanism of the programmed death of cells provides growth of buccolabial sulcus from epithelial plate?
a. Amitosis
b. Apoptosis
c. Meiosis
d. Necrosis
e. Paranecrosis

217. A child with renal insufficiency exhibits delayed teeth eruption. This is most likely caused by the abnormal formation of the following substance:
a. alpha-ketoglutarate
b. Hydroxylysine
c. Glycocyamine
d. Glutamate
e. 1,25 (OH)2D3

218. A patient has allergic rhinitis with profuse mucous discharges, itching, frequent sneezing. What drug should be chosen if you know that it selectively blocks histamine receptors?
a. Naphthizin
b. Prednisolone
c. Mesatonum
d. Adrenaline hydrochloride
e. Loratadine

219. Epithelium regeneration of mucous membrane of oral cavity (cell reproduction) was accompanied by semiconservative DNA replication (selfreproduction). Nucleotides of a new DNA chain

are complementary to:
a. RNA-polymerase enzyme
b. Maternal chain
c. DNA-polymerase enzyme
d. Sense codons
e. Introns

220. A young woman has entered a production unit where strongly smelled of paints and varnishes and had bronchospasm. This reflex was provoked by irritation of the following receptors:
a. Peripheral chemoreceptors
b. Irritant
c. Pleural receptors
d. Juxtaglomerular
e. Central chemoreceptors

221. Hurtnups disease is caused by point mutation of only one gene. This results in abnormal absorption of tryptophane in the intestine as well as its abnormal reabsorption in renal tubules. This causes synchronous disorders in digestive and urinary excretion systems. What genetic phenomenon is observed in this case?
a. Complementary interaction
b. Codominance
c. Semidominance
d. Pleiotropy
e. Polymery

222. A 60-year-old patient presents with intestinal hypoperistalsis. Which of the following foodstuffs will stimulate peristalsis most of all?
a. Meat
b. White bread
c. Brown bred
d. Lard
e. Tea

223. A patient was delivered to the admission ward with poisoning with an insecticide of anticholinesterase action. What drug able to block muscarinic cholinoreceptors should be prescribed?
a. Atropine sulfate
b. Dithylinum
c. Mesatonum
d. Benzohexonium
e. Pilocarpine hydrochloride

224. A student has been staying in a badly ventilated room for a long time that resulted in acceleration of respiratory rate. What receptors were the first to react to the increased concentration of carbonic acid in the air?
a. Central chemoreceptors
b. Irritant receptors
c. Olfactory receptors
d. Juxtaglomerular receptors
e. Vascular chemoreceptors

225. An isolated muscle fiber is under experiment. It was ascertained that excitement threshold of a cell was significantly lowered. What might have caused this phenomenon?
a. Blockade of energy production in the cell
b. Activation of membrane sodium channels
c. Inactivation of membrane sodium channels
d. Activation of membrane potassium channels
e. Inactivation of membrane potassium channels

226. During an experiment it is required to estimate the rate of cell excitability. For this purpose it would be rational to determine:

a. Duration of action potential

b. Depolarization threshold

c. Critical level of depolarization

d. Rest potential

e. Amplitude of action potential

227. As a result of expression of some genome components the embryo cells acquire typical morphological, biochemical and functional properties. Name this process:

a. Determination

b. Induction

c. Capacitation

d. Reception

e. Differentiation

228. A patient with acute poisoning with morphine was delivered to the hospital ward. What specific antagonist of narcotic analgesics is to be applied in this case?

a. Digoxin

b. Unithiol

c. Paracetamol

d. Methacin

e. Naloxone

229. A patient with edemata was prescribed a K+-retaining diuretic - aldosterone antagonist. What drug is it?

a. Digoxin

b. Clonidine

c. Alopurinole

d. Spironolactone

e. Procainamide hydrochloride

230. Patients with erythropoietic porphyria (Gunthers disease) are known to have photoesthetic skin, red urine. In the ultraviolet light their teeth exhibit bright red fluorescence. This disease is associated with deficiency of the following enzyme:

a. Uroporphyrinogen decarboxylase

b. Ferrochelatase

c. Uroporphyrinogen-I-synthase

d. Delta-aminolevulinate synthase

e. Uroporphyrinogen-III-cosynthase

231. To subdue the fever and relieve tooth ache a patient was prescribed paracetamol. What is the action mechanism of this medication?

a. Cycloxygenase blocking

b. Lipoxygenase blocking

c. Phosphodiesterase blocking

d. Cholinesterase blocking

e. Monoamine oxidase blocking

232. A dentist was examining a patient and noticed excessive salivation. The dentist applied a medication inducing dryness of oral cavity. What medication is it?

a. Proserin

b. Galantamine

c. Phentolamine

d. Pilocarpine hydrochloride

e. Atropine sulfate

233. A man has worked in an African country for 3 years. A month after his return to Ukraine he

consulted an ophthalmologist and complained about eye ache, eyelid edema, lacrimation and temporary visual impairment. Underneath the eye conjunctiva the doctor revealed helminths 30-50 mm long with elongated filiform body. What diagnosis might be suspected?

a. Ascaridiasis
b. Diphyllobothriasis
c. Filariasis
d. Enterobiasis
e. Trichocephaliasis

234. A woman got infected with rubella during pregnancy. The child was born with malformations, namely cleft lip and palate. The childs genotype is normal. These malformations are a manifestation of:

a. Aneuploidies
b. Modification variability
c. Combinatory variability
d. Polyploidies
e. Chromosomal mutations

235. A 28-year-old female patient consulted a gynecologist about sterility. Examination revealed underdeveloped ovaries and uterus, irregular menstrual cycle. Analysis of the sex chromatin revealed 2 Barr’s bodies in most somatic cells. What chromosome disease is most likely?

a. Edwards syndrome
b. Klinefelters syndrome
c. Turners syndrome
d. Triple X syndrome
e. Pataus syndrome

236. After a thorough examination the patient who had returned from Central Asia to Ukraine was diagnosed with spring-summer encephalitis. Its pathogen might have entered the body through the bite of the following arthropod:

a. Taiga tick
b. Itch mite
c. Mosquito
d. Dog-louse
e. Argasid tick (ornithodorus papillipes)

237. A patient has been preliminarily diagnosed with paragonimiasis. This disease is caused by lung flukes. The causative agent entered into the patients body through:

a. Drinking raw water from open reservoirs
b. Eating half-cooked lobsters and crabs
c. Contact with an infected cat
d. Eating unwashed vegetables
e. Eating half-cooked or dried fish

238. Following exposure to radiation a lot of mutant cells appeared in a patient. Some time later most of them were detected and destroyed by the following cells of the immune system:

a. Plasmoblasts
b. B-lymphocyte
c. Stem cells
d. T-lymphocytes-killers
e. T-lymphocytes-supressors

239. A gynaecologist was examining a patient and revealed symptoms of genital tract inflammation. A smear from vagina contains pyriform protozoa with a spine, flagella at their front; there is also an undulating membrane. What disease can be suspected?

a. Lambliasis
b. Toxoplasmosis
c. Balantidiasis

d. Urogenital trichomoniasis
e. Intestinal trichomoniasis

240. Ionizing radiation or vitamin E deficiency may increase the permeability of lysosome membranes. What consequences may arise from this pathology?
a. Formation of cleavage spindle
b. Partial or complete cell disintegration
c. Intense energy synthesis
d. Intensive protein synthesis
e. Restoration of the cytoplasmic membrane

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

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

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

244. In human population some people throughout their life develop not two but three dentitions. It is the manifestation of the following law:
a. Biogenetic law (recapitulation theory)
b. Hardy-Weinberg principle
c. Embryonic induction
d. Homologous series of genetic variation
e. Independent assortment

245. Microscopy of a sputum sample obtained from a patient who has been suffering from pneumonia for a week detected helminth larvae. Eosinophilia is observed in the patient’s blood. What diagnosis can be suspected in this case?
a. Taeniasis
b. Echinococcosis
c. Paragonimiasis
d. Fasciolasis
e. Ascariasis

246. During their expedition to the Middle East, the students found a 7-centimeter-long arthropod. Its body consists of cephalothorax with 4 pairs of ambulatory legs and segmented abdomen with two venom glands in its last segment. The gland openings are located on the tip of the hook-shaped sting.

The animal was identified as a nocturnal predator, its venom is dangerous for humans. It belongs to the following order:

a. Acarina
b. Aranei
c. Scorpiones
d. Solpugae
e. Aphaniptera

247. Mother with a 12-year-old child came to the gastroenterologist. She complains of loss of appetite and meteorism in her child. Endoscopically the child was diagnosed with biliary dyskinesia, in the duodenal contents there were pear-shaped protozoa with two nuclei and multiple flagella. What disease is the most likely in this child?

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

248. Biochemical analysis of amino acid contents of freshly synthesized polypeptides shows that in the process of their translation the first amino acid in each of these proteins will be the same. Name this amino acid:

a. Methionine
b. Histidine
c. Isoleucine
d. Phenylalanine
e. Serine

249. The height of a person is controlled by several non-allelic dominant genes. If the number of this genes is increased, the height of a person increases as well. What type of interaction occurs between these genes?

a. Polymery
b. Epistasis
c. Complementarity
d. Codominance
e. Pleiotropy

250. Mother of a 2-year-old child with delayed physical and mental development has made an appointment with the genetic consultation. What method allows the doctor to rule out chromosomal abnormalities?

a. Cytogenetic
b. Genealogical
c. Population statistics
d. Cytological
e. Biochemical

251. During a class in molecular biology, the mutations resulting in production of abnormal hemoglobin are being studied. What amino acid substitution occurs when S-hemoglobin is being produced, resulting in the development of sickle-cell anemia?

a. Threonine is substituted with lysine
b. Histidine is substituted with arginine
c. Glycine is substituted with asparagine
d. Glutamic acid is substituted with valine
e. Lysine is substituted with glutamine

252. People of various nationalities, who live in the Arctic climate, develop a number of features to adapt to their environment. Representatives of the Arctic adaptive type compared to the natives of the Central Africa have the following characteristic feature:

a. Increased layer of subcutaneous fat

b. Lower need for fat intake
c. Elongated legs and shorter arms
d. Lean stature
e. Hyperhidrosis

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

a. Modification
b. Combinative
c. Epimutational
d. Genomic imprinting
e. Mutational

254. A tourist, who had been to one of the Far East countries, was hospitalized into the therapeutics unit with suspected pneumonia. Examination of his sputum and feces detected there lung fluke eggs. What food products are the most likely cause of lung fluke infestation?

a. Raw fruits and vegetables
b. Insufficiently thermally processed freshwater crabs
c. Insufficiently thermally processed eggs
d. Insufficiently thermally processed beef
e. Insufficiently thermally processed pork