1. A girl who was provisionally diagnosed with Turners syndrome came to a genetic consultation. The diagnosis can be specified by means of the following genetic method:

a. Genealogical
b. Biochemical
c. Dermatoglyphics
d. Sex chromatin test
e. Hybridological

2. A patient has mental retardation, small height, brachydactyly, mongoloid slant. Analysys of his karyotype revealed trisomy 21. What chromosomal anomaly is it?

a. Turners syndrome
b. Klinefelters syndrome
c. Downs disease
d. Trisomy X
e. Specific fetopathy

3. Microscopical examination of discharges from the gums of a patient ill with paradontosis revealed some protozoan pear-shaped organisms 6-13 micrometer long. The parasite has one nucleus and undulating membrane, there are four flagella at the front of its body. What protozoan were found?

a. Amoebae
b. Leishmania
c. Trichomonads
d. Balantidia
e. Lamblia

4. A female patient has symptoms of inflammation of urogenital tracts. A smear from the vaginal mucous membrane contained big unicellular pyriform organisms with a sharp spike on the back end of their bodies; big nucleus and undulating membrane. What protozoa were revealed in the smear?

a. Trichomonas vaginalis
b. Trichomonas buccalis
c. Lamblia intestinalis
d. Trypanosoma gambiense
e. Trichomonas hominis

5. Among public catering workers examined by doctors of sanitary-and-epidemiologic station often occur asymptomatic parasite carriers. This means that a healthy person carries cysts that infect other people. Such parasitizing is impossible for the following causative agent:

a. Intestinal trichomonad
b. Malarial plasmodium
c. Dysenteric amoeba
d. Dermatotropic leishmania
e. Viscerotropic leishmania

6. Two weeks after hemotransfusion a patient developed fever. What protozoal disease can be suspected?

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

7. Helminthological examination of patients feces revealed oval brown eggs with tuberous external membrane. Name the type of helminth:

a. Ascarid
b. Whipworm
c. Broad tapeworm
d. Dwarf tapeworm
e. Pinworm

8. A blood smear of a patient who has recently recovered from flu contains 10% of roundish cells 4,5-7 micrometer large with a big round nucleus and basophilically stained cytoplasm in form of a narrow border around the nucleus. What blood status are they typical for?

a. Leukopenia
b. Thrombopenia
c. Lymphocytopenia
d. Lymphocytosis
e. Monocytopenia

9. A child has abnormal formation of tooth enamel and dentin as a result of low concentration of calcium ions in blood. Such abnormalities might be caused by deficiency of the following hormone:

a. Parathormone
b. Thyroxin
c. Triiodothyronine
d. Somatotropic hormone
e. Thyrocalcitonin

10. A patient has the sudden decrease of Ca2+ content in blood. What hormone secretion will increase?

a. Parathormone
b. Aldosterone
c. Somatotropin
d. Vasopressin
e. Thyrocalcitonin

11. Hepatic disfunctions accompanied by insufficient inflow of bile to the bowels result in coagulation failure. This phenomenon can be explained by:

a. Leukopenia
b. Vitamin K deficiency
c. Thrombocytopenia
d. Iron deficiency
e. Erythropenia

12. Examination of a child who hasnt got fresh fruit and vegetables during winter revealed numerous subcutaneous hemorrhages, gingivitis, carious cavities in teeth. What vitamin combination should be prescribed in this case?

a. Thiamine and pyridoxine
b. Riboflavin and nicotinamide
c. Calciferol and ascorbic acid
d. Ascorbic acid and rutin
e. Folic acid and cobalamin

13. A patient has increased permeability of blood-vessel walls, increased gingival haemorrhage, small punctate haematoma on his skin, falling of teeth. What disturbance of vitamin metabolism can account for these symptoms?

a. Hypervitaminosis C
b. Hypervitaminosis D
c. Hypovitaminosis C
d. Hypovitaminosis D
e. Hypovitaminosis A

14. A one year old child has enlarged head and belly, retarded cutting of teeth, destruction of enamel structure. What hypovitaminosis causes these changes?

a. Hypovitaminosis A
b. Hypovitaminosis C
c. Hypovitaminosis D
d. Hypovitaminosis B1
e. Hypovitaminosis B2

15. To what total ATP quantity is the full glucose oxidation and its linking with phosphorylation equivalent?

a. 52
b. 58
c. 8
d. 12
e. 38

16. A patient with diabetes mellitus had an insuline injection. It caused loss of consciousness and convulsions. What was the result of biochemic blood analysis on glucose content?

a. 5,5 mmole/l
b. 2,5 mmole/l
c. 8,0 mmole/l
d. 3,3 mmole/l
e. 10 mmole/l

17. A patient with chronic hypoglycemia had adrenaline introduction. After introduction blood test has not changed essentially. Doctor assumed liver pathology. What liver function may have been changed?

a. Excretory function
b. Function of glycogen depositing
c. Ketogenic function
d. Function of cholesterin production
e. Glycolytic function

18. For assessment of the neutralizing function of liver a patient with chronic hepatitis went through a test with natrium benzoate load. The excretion of what acid with urine will characterize the neutrolizing function of liver?

a. Phenylacetic acid
b. Valeric acid
c. Oxalic acid
d. Hippuric acid
e. Citric acid

19. A patient with high obesity was recommended to take carnitine as a food additive for better fat burning. What function is fulfilled by carnitine in the process of fat oxidation?

a. Intracellular lipolysis activation
b. Transport of fatty acids from the cytosol to the mitochondria
c. Participation in one of the reactions of beta-oxidation of fatty acids
d. Transport of fatty acids from the fat depots to the tissues
e. Fatty acid activation

20. Examination of urine in a newborn revealed presence of citrulline and high ammonia concentration. This baby is most likely to have the disorder of the following substance production:

a. Creatinine
b. Creatine
c. Uric acid
d. Ammonia
e. Urea

21. A 57 year old patient with diabetes mellitus was developed ketoacedosis. Biochemical base of this condition is decrease of acetyl-CoA utilization. What cell compound deficit causes this effect?

a. Aspartate
b. Succinate
c. 2-oxoglutarate
d. Glutamate
e. Oxaloacetate

22. Examination of a 6 days old infant revealed phenyl pyruvate and phenyl acetate excess in his urine. What aminoacid metabolism is disturbed in the childs organism?

a. Methionine
b. Tryptophan
c. Phenylalanine
d. Histidine
e. Arginine

23. A patient has painfulness along big nerve trunks and excessive content of pyruvate in blood. What vitamin deficit may cause such changes?

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

24. A patient who is ill with scurvy displays disturbed processes of connective tissue formation that leads to loosening and falling of teeth. Disturbed activity of what enzyme causes these symptoms?

a. Elastase
b. Glycosiltransferase
c. Lisilhydroxylase
d. Procollagenpeptidase of N-terminal peptide
e. Procollagenpeptidase of C-terminal peptide

25. Decreased ratio of adenylic nucleotides ATP/ADP results in intensified glycolysis in parodentium tissues in hypoxic conditions. What reaction is activated in this case?

a. Enolase
b. Lactate dehydrogenase
c. Aldolase
d. Triosophosphate isomerase
e. Phosphofructokinase

26. A sportsman was recommended to take a preparation with carnitine in order to improve his achievements. What process is activated by carnitine to the most extent?

a. Synthesis of steroid hormones
b. Lypide synthesis
c. Tissue respiration
d. Transporting of fatty acids to the mitochondrions
e. Synthesis of ketone bodies

27. A patient has liver cirrhosis. Analysis of what substance excreted with urine may characterize the state of antitoxic liver function?

a. Creatinine
b. Ammonian salts
c. Hippuric acid
d. Uric acid
e. Amino acids

28. Cyanide poisoning causes immediate death. What is the mechanism of cyanide effect at the molecular level?

a. They inactivate oxygene
b. They inhibit cytochrome B
c. They bind substrates of tricarboxylic acid cycle
d. They block succinate dehydrogenase
e. They inhibit cytochromoxidase

29. A patient has the folowing changes: disorder of twilight vision, drying out of conjunctiva and cornea. Such disorders may be caused by deficiency of vitamin:

a. Vitamin D
b. Vitamin B12
c. Vitamin B
d. Vitamin C
e. Vitamin A

30. A patient was taken to the hospital with preliminary diagnosis progressive muscle distrophy. What substance will be excessively contained in urine and confirm this diagnosis?
a. Carnosine
b. Pyruvate
c. Creatine
d. Troponine
e. Hydroxiproline

31. A child has disturbed enamel and dentine formation as a result of decreased content of calcium ions in his blood. What hormone deficiency may cause such changes?
a. Thyreocalcitonin
b. Thyroxin
c. Triiodothyronine
d. Parathormone
e. Somatotropin

32. A child was diagnosed with acute renal failure. What biochemic saliva indices can confirm this diagnosis?
a. Increase of alpha amylase
b. Decreased level of phosphate
c. Increase of immunoglobuline A
d. Reduction of alkaline phosphatase
e. Increased level of rest nitrogen

33. A child has disturbed processes of ossification and punctate enamel. What microelement metabolism is disturbed?
a. Zinc
b. Iron
c. Fluorine
d. Chromium
e. Copper

34. Periodontitis is accompanied by activation of proteolysis in the periodontium tissues. The evidence of proteolysis activation is increase of the following component of oral liquid:
a. Biogenic amines
b. Cholesterol
c. Organic acids
d. Glucose
e. Amino acids

35. Examination of an ill childs blood revealed inherited hyperlipoproteinemia. Genetic defect of what enzyme synthesis causes this phenomenon?
a. Lipoprotein lipase
b. Proteinase
c. Phenylalanine hydroxylase
d. Hemsynthetase
e. Glycosidase

36. A 28 year old pregnant woman had the enzymes in the cells of amniotic fluid analyzed. The analysis revealed insufficient activity of beta-glucuronidase. What pathological process is it?
a. Lipidosis
b. Mucopolysaccharidosis

c. Aglycogenosis
d. Glycogenosis
e. Collagenosis

37. A 42 year old woman diagnosed with diabetes mellitus was admitted the endocrinological department with complaints of thirst, excessive appetite. What pathological components are revealed in course of laboratory examination of the patients urine?
a. Blood
b. Glucose, ketone bodies
c. Protein, creatine
d. Protein, aminoacids
e. Bilirubin, urobilin

38. After implantation of a cardiac valve a young man constantly takes indirect anticoagulants. His state was complicated by hemorrhage. What substance content has decreased in blood?
a. Creatin
b. Ceruloplasmin
c. Haptoglobin
d. Heparin
e. Prothrombin

39. A patient has increased content of uric acid in his blood that is clinically presented by pain syndrome as a result of urate deposition in the joints. What process does this acid result from?
a. Reutilization of purine bases
b. Lysis of purine nucleotides
c. Heme catabolism
d. Lysis of pyrimidine nucleotides
e. Proteolysis

40. A non trained man has usually muscular hypoxy after a sprint. What metabolite accumulates in the muscles as a result of it?
a. -
b. Lactate
c. Glucose 6-phosphate
d. Ketone bodies
e. Oxaloacetate

41. Myocyte cytoplasm contains a big number of dissolved metabolites of glucose oxidation. Name one of them that turns directly into lactate:
a. Glucose 6-phosphate
b. Fructose 6-phosphate
c. Oxaloacetate
d. Glycerophosphate
e. Pyruvate

42. Chronic overdosage of glucocorticoids leads to the development of hyperglycemia. What process of carbohydrate metabolism is responsible for this effect?
a. Glycogenolysis
b. Pentose-phosphate cycle
c. Glycogenesis
d. Gluconeogenesis
e. Aerobic glycolisis

43. Patient with pigmentary xeroderma are characterized by anamalously high sensivity to ultraviolet rays that causes skin cancer as a result of enzyme systems incapability to restore damages of hereditary apparatus of cells. What process abnormality is this pathology connected with?
a. DNA reduplication
b. DNA reparation

c. DNA recombination
d. Genetic conversion
e. Genetic complementation

44. In compliance with the clinical presentations a man was prescribed pyridoxalphosphate. What processes are corrected by this preparation?
a. Desamination of purine nucleotides
b. Oxidative decarboxilation of keto acids
c. Transamination and decarboxylation of amino acids
d. Synthesis of purine and pyrimidine bases
e. Protein synthesis

45. A 2 year old child suffers from intestinal dysbacteriosis that lead to the development hemorrhagic syndrome. The most probable cause of hemorrhage is:
a. Activation of tissue thromboplastin
b. Fibrinogen deficiency
c. Hypocalcemia
d. Vitamin K deficiency
e. Hypovitaminosis PP

46. Examination of a 30-year-old man mandible revealed in the region of his molar a dense tumour-like formation that significantly deformed the mandible. The formation wasnt fully detached from the bone tissue. Microscopical examination of a tissue sampling revealed that stroma had some cords and follicles with odontogenous cylindric epithelial cells in peripheria and stellate cells resembling of the enamel organ pulp in the centre. What is the most likely diagnosis?
a. Adenomatoid tumour
b. Adenocarcinoma
c. Osteoclastoma
d. Ameloblastoma
e. Primary intraosteal cancer

47. A patient has deformation of jaw bones. Histological examination revealed there growth of fibrocellular tumour-like ill-defined tissue with primitive osteogenesis. What disease are these presentations typical for?
a. Fibrous dysplasia
b. Osteosarcoma
c. Parathyroid osteodystrophy
d. Eosinophilic granuloma
e. Ameloblastoma

48. The first grade pupils went through a medical examination aimed at selection of children needing tuberculosis revaccination. What test was applied?
a. Anthracene test
b. Mantoux test
c. Supracutaneous tularin test
d. Schick test
e. Burne test

49. A 10 year old child underwent Mantoux test (with tuberculin). 48 hours later there apperaed a papule up to 8 mm in diameter on the site of tuberculin injection. Tuberculin injection caused the following hypersensitivity reaction:
a. IV type hypersensitivity reaction
b. Seroreaction
c. II type hypersensitivity reaction
d. Atopic reaction
e. Arthus reaction

50. The activity of parotides reduces with age. Activity of what enzyme in saliva will be reducing?

a. Phosphatase
b. Lysozime
c. Amylase
d. Hexokinase
e. Maltase

51. While the examination of patients oral cavity the dentist found xerostomia, numerous erosions. What vitamin deficit caused this effect?
a. Vitamin A
b. Vitamin P
c. Vitamin PP
d. Vitamin H
e. Vitamin K

52. A patient with focal tuberculosis of superior lobe of his right lung takes isoniazid as a part of combined therapy. After a time he started complaining of muscular weakness, decrease of skin sensitivity, sight and movement coordination disorder. What vitamin preparation will be right for elimination of these occurances?
a. Vitamin B6
b. Vitamin D
c. Vitamin C
d. Vitamin B12
e. Vitamin A

53. Up to 50% of world population aged above thirty is affected by paradontosis. The leading part in pathogenesis of this disease is played by:
a. Dental calculus caused by microflora
b. Immune damage of tissues
c. Parodontium tissues damaged by kallikrein
d. Parodontium damaged by active cells
e. Neurodystrophic factor

54. While examining a blood smear taken form a patient and stained by Romanovskys method a doctor revealed some protozoa and diagnozed the patient with Chagas disease. What protozoan is the causative agent of this disease?
a. Trypanosoma brucei
b. Trypanosoma cruzi
c. Leishmania donovani
d. Toxoplasma gondii
e. Leishmania tropica

55. A 38 year old patient takes aspirin and sulfanilamides. After their intake intensified erythrocyte haemolysis is observed which is caused by deficiency of glucose 6-phosphate dehydrogenase. This pathology is caused by failure of the following coenzyme:
a. FAD-H2
b. FMN-H2
c. Ubiquinone
d. NADP-H
e. Pyridoxal phosphate

56. In the mountains some clinically healthy people present with anaemia symptoms. Blood test can reveal sickle cells. What is the genotype of such people?
a. XCXc
b. Aa
c. AA
d. aa
e. XcXc

57. Active physical work induces rise of concentration of carbonic acid in blood. This causes deepening and acceleration of respiration thus reducing concentration of carbonic acid and hydrogen ions in blood. This maintains the following process:

a. Ontogenesis
b. Immunity
c. Homeostasis
d. Orthobiosis
e. Anabiosis

58. During physical exercise people are less sensitive to pain. The reason for it is the activation of:

a. Thyroid gland functions
b. Nociceptive system
c. Antinociceptive system
d. Sympathoadrenal system
e. Adrenal gland functions

59. A patient was diagnosed with seborrheic dermatitis associated with vitamin H (biotin) deficiency. The patient has disturbed activity of the following enzyme:

a. Pyruvate decarboxylase
b. Amino transferase
c. Carbomoyl phosphate synthetase
d. Acetyl-CoA-carboxylase
e. Alcohol dehydrogenase

60. Coprological examination of a patients feces revealed small operculate eggs. It is known from the anamnesis that the patient often consumes fish. What fluke parasitizes in the patients organism?

a. Blood fluke
b. Liver fluke
c. Lancet fluke
d. Cat liver fluke
e. Lung fluke

61. While on holiday in the countryside a boy found a spider with the following morphological peculiarities: body length at the rate of 2 cm, round black abdomen with two rows of red dots on its dorsal surface, four pairs of segmented extremities covered with tiny black hairs. Identify this arthropod:

a. Tarantula
b. Steppe spider (Latrodectus tredecimguttatus)
c. Solifugae
d. Scorpion
e. Mite

62. A patient applied to a doctor complaining about dizziness, memory impairment, periodical convulsions. It was found out that such changes were caused by a product of glutamic acid decarboxylation. What product is meant?

a. Tetrahydrofolate
b. GABA
c. Thymidine diphosphate
d. Pyridoxalphosphate
e. ATP

63. A hospital admitted a patient with complaints about abdominal swelling, diarrhea, meteorism after consumption of food rich in proteins. It is indicative of disturbed protein digestion and their intensified decaying. What substance is the product of this process in the bowels?

a. Putrescine
b. Indole
c. Cadaverine
d. Bilirubin

e. Agmatine

64. A sportsman needs to improve his sporting results. He was recommended a drug containing carnitine. What process is activated by this compound in the first place?

a. Transport of glucose
b. Transport of vitamin K
c. Transport of amino acids
d. Transport of calcium ions
e. Transport of fatty acids

65. Laboratory examination of a child revealed high content of leucine, valine, isoleucine and their ketoderivates in blood and urine. Urine had the typical smell of maple syrup. This disease was caused by deficiency of the following enzyme:

a. Aminotransferase
b. Phosphofructokinase
c. Phosphofructomutase
d. Dehydrogenase of branched amino acids
e. Glucose-6-phosphatase

66. In order to speed up healing of the thermal injury it is required to prescribe a drug that facilitates epithelization of skin and mucous membranes. What drug is it?

a. Tocopherol acetate
b. Ergocalciferol
c. Ascorbic acid
d. Retinol acetate
e. Nicotinic acid

67. A 28 year old woman consulted a doctor about sterility. Examination revealed underdeveloped ovaries and uterus, irregular menstrual cycle. Study of sex chromatin revealed 2 Barrs bodies in most somatic cells. What chromosome disease is the most probable in this case?

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

68. Dehelmintization of a patient revealed some long fragments of a helminth with segmented structure. Mature segments were rectangular, 30x12 mm large, closed-type matrix was in form of a stem with 17-35 lateral branches. Specify this helminth:

a. Armed tapeworm
b. Hookless tapeworm
c. Echinococcus
d. Alveococcus
e. Dwarf tapeworm

69. A man got poisoned with mushrooms. They contain muscarine that stimulates muscarinic cholinoreceptors. What symptom is typical for poisoning with inedible mushrooms?

a. Bronchi dilation
b. Mydriasis
c. Miosis
d. Heart rate rise
e. Arterial pressure rise

70. A patient suffering from syphilis was prescribed a drug the action of which based upon disturbed generation of murein leading to death of the causative agent. What drug is it?

a. Benzylpenicillin sodium salt
b. Ciprofloxacin
c. Doxycycline hydrochloride

d. Azithromycin
e. Bijochinol

71. Examination of a 10 y.o. child revealed on the alveolar submandibular process a fixed tumourous mass 1,5 cm in diameter closing premolar crown on the vestibular side. Mucous membrane of its surface is reddish-brown, it bleeds as a reaction to a slight mechanical intervention. Biopsy results: the mass consists of small size vessels separated by thin layers of connective tissue and infiltrated by plasmocytes, mucous membrane is here and there ulcered. What is the most probable diagnosis?
a. Giant cell form of epulis
b. Gingival fibromatosis
c. Angiomatous form of epulis
d. Hypertrophic gingivitis
e. Fibrous form of epulis

72. A 40-year-old male patient had a tumour-like formation 8x7 cm large on his neck. A surgeon removed it only partially because of close connection with large vessels. Microscopical examination revealed marked cellular and tissue atypism, lipoblast-type cells in different stages of maturity, with polymorphism and nuclear hyperchromia, pathological mitoses, necrosis foci. Specify the histological form of the tumour:
a. Fibrosarcoma
b. Hibernoma
c. Lipoma
d. Fibroma
e. Liposarcoma

73. A patient has roundish ulcers on his face, inflammation and enlargement of lymph nodes. These symptoms turned up as a result of mosquito bites. Laboratory examination of discharge from the ulcers revealed unicellular aflagellar organisms. What is the most probable diagnosis?
a. Dermatotropic leishmaniasis
b. Scabies
c. Myasis
d. Trypanosomiasis
e. Toxoplasmosis

74. A dentist was examining oral cavity of a 9 year old child in the buccal surface of gingiva in the area of the lower canine he revealed a red, soft, node-like formation 1 cm in diameter that started immediately bleeding when touched. Microscopical examination revealed that this formation consisted of many small vessels like venules and capillaries separated by thin layers of connective tissue, with focal infiltration by lymphoid and plasmatic cells. Such changes are typical for:
a. Radicular granuloma
b. Capillary hemangioma
c. Angiomatous epulis
d. Fibrous epulis
e. Papilloma

75. During examination of a 36-year-old woman a dentist revealed a formation in form of a nodule up to 0,8 cm in diameter, of dark brown-red colour, soft, on a wide base. The formation was found on the buccal surface of gum in the region of the 2nd molar. Histological examination revealed that the formation had plenty of sinusoid vessels and a lot of roundish mononuclear and big multinuclear cells; in some parts accumulations of hemosiderin granules could be found. What is the most likely diagnosis?
a. Angiomatous epulis
b. Root granuloma
c. Giant-cell epulis
d. Ameloblastoma
e. Mandibular osteoclastoma

76. Osteolathyrism is characterized by a loss of tensile strength of collagen, which is induced by a

significant decrease in the formation of cross-links in collagen fibrils. The cause for it is the reduced activity of:

a. Collagenase

b. Lysyl oxidase

c. Prolyl hydroxylase

d. Monoamine oxidase

e. Lysyl hydroxylase

77. Roentgenological examination of mandible of a 27 year old man revealed a focus of osseous tissue destruction. Histological examination revealed a tumour consisting of odontogenous epithelium cords, immature connective tissue and dysplastic dentin rests. What tumour is it?

a. Odontogenous fibroma

b. Complex odontoma

c. Ameloblastic fibro-odontoma

d. Odontoameloblastoma

e. Dentinoma

78. Analysis of urine from a 24-year-old man revealed the following changes: daily diuresis - 10 l, relative density - 1,001, qualitative alterations are absent. A patient complains of excessive thirst, frequent urination. What is the most likely cause of this disease?

a. Aldosteron hypersecretion

b. Vasopressin hyposecretion

c. Vasopressin hypersecretion

d. Glucocorticoid hypersecretion

e. Relative insulin insufficiency

79. A sample taken from the pharynx of a patient with angina was inoculated on the blood-tellurite agar. This resulted in growth of grey, radially striated (in form of rosettes) colonies up to 4-5 mm in diameter. Microscopically there can be seen gram-positive rods with club-shaped ends arranged in form of spread fingers. What microorganisms are these?

a. Streptococci

b. Streptobacilli

c. Clostridium botulinum

d. Diphtheroids

e. Corynebacteria diphtheriae

80. Cytogenetic examination of a patient with dysfunction of the reproductive system revealed normal karyotype 46,XУ in some cells, but most cells have Klinefelters syndrome karyotype - 47,XXУ. Such phenomenon of cell inhomogeneity is called:

a. Transposition

b. Inversion

c. Mosaicism

d. Duplication

e. Heterogeneity

81. A 15 year old girl was delivered to the hospital with inflammation of vermiform appendix. Blood analysis revealed signs of anaemia. Her feces contained lemon-shaped helminthic eggs (50x30 micrometer) with "plugs" on the poles. What type of helminth is it?

a. Hookworm

b. Pinworm

c. Trichuris

d. Echinococcus

e. Hymenolepis nana

82. Histological examination of a micro specimen presenting a malignant lung tumour revealed that the tumor consisted of lymphocyte-like cells forming any structures. Stroma is mildely marked, there are a lot of mitoses and necroses. What tumour is it?

a. Fibroma

b. Squamous cell keratinous carcinoma
c. Adenocarcinoma
d. Small cell carcinoma
e. Squamous cell nonkeratinous carcinoma

83. Microscopical examination of a surgical specimen (an ulcered part of a lip) revealed in the connective tissue of mucous membrane near the borders and under the floor of the ulcer some epithelial complexes consisting of atypic multistratal epithelium with accumulations of bright pink concentric formations. What pathology is it?
a. Squamous cell nonkeratinous carcinoma
b. Basal cell carcinoma
c. Papilloma
d. Squamous cell keratinous carcinoma
e. Transitional cell carcinoma

84. The 16th tooth of a patient is missing. X-ray picture shows in the depth of alveolar process rarefaction of bone and a well-defined cavity that contained the underdeveloped tooth crown. Microscopical examination revealed that the cavity wall was lined with stratified squamous epithelium and enclosed within a fibrous capsule. Make a diagnosis:
a. Radicular gnathic cyst
b. Cystic ameloblastoma of jaw
c. Primordial gnathic cyst
d. Follicular gnathic cyst
e. Cyst of the incisive canal

85. Roentgenological examination of a patient revealed a cyst enclosing a tooth in its cavity in the area of the premolar. Microscopical examination revealed that the cyst wall consisted of connective tissue and was lined with multilayer squamous epithelium. What is the most probable diagnosis?
a. Follicular cyst
b. Primordial cyst
c. Epulis
d. Eosinophilic granuloma
e. Radicular cyst

86. Laboratory of extremely dangerous infections received a sample taken from a patient with assumed cholera. What express-diagnostics method can confirm this diagnosis?
a. Precipitation reaction
b. Hemagglutination reaction
c. Complement binding reaction
d. Agglutination test
e. Immunofluorescence test

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c. Genealogical
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b. Trisomy X
c. Specific fetopathy
d. Downs disease
e. Turners syndrome

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a. Leishmania
b. Balantidia
c. Lamblia
d. Trichomonads
e. Amoebae

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a. Trichomonas hominis
b. Trypanosoma gambiense
c. Lamblia intestinalis
d. Trichomonas vaginalis
e. Trichomonas buccalis

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e. Amebiasis

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b. Lymphocytosis
c. Monocytopenia
d. Lymphocytopenia
e. Leukopenia

95. A child has abnormal formation of tooth enamel and dentin as a result of low concentration of calcium ions in blood. Such abnormalities might be caused by deficiency of the following hormone:

a. Thyroxin
b. Thyrocalcitonin
c. Parathormone
d. Somatotropic hormone

e. Triiodothyronine

96. A patient has the sudden decrease of Ca2+ content in blood. What hormone secretion will increase?

a. Aldosterone
b. Thyrocalcitonin
c. Parathormone
d. Vasopressin
e. Somatotropin

97. Hepatic disfunctions accompanied by insufficient inflow of bile to the bowels result in coagulation failure. This phenomenon can be explained by:

a. Thrombocytopenia
b. Iron deficiency
c. Vitamin K deficiency
d. Erythropenia
e. Leukopenia

98. A patient with high rate of obesity was advised to use carnitine as a food additive in order to enhance fat burning. What is the role of carnitine in the process of fat oxidation?

a. It takes part in one of reactions of FFA beta-oxidation
b. Transport of FFA from fat depots to the tissues
c. Transport of FFA (free fatty acids) from cytosol to the mitochondria
d. FFA activation
e. Activation of intracellular lipolysis

99. Examination of a child who hasnt got fresh fruit and vegetables during winter revealed numerous subcutaneous hemorrhages, gingivitis, carious cavities in teeth. What vitamin combination should be prescribed in this case?

a. Calciferol and ascorbic acid
b. Ascorbic acid and rutin
c. Folic acid and cobalamin
d. Thiamine and pyridoxine
e. Riboflavin and nicotinamide

100. A patient has increased permeability of blood-vessel walls, increased gingival hemorrhage, small punctate hematomas on his skin, falling of teeth. What disturbance of vitamin metabolism can account for these symptoms?

a. Hypervitaminosis D
b. Hypovitaminosis D
c. Hypovitaminosis A
d. Hypovitaminosis C
e. Hypervitaminosis C

101. A one year old child has enlarged head and belly, retarded cutting of teeth, destruction of enamel structure. What hypovitaminosis causes these changes?

a. Hypovitaminosis B2
b. Hypovitaminosis D
c. Hypovitaminosis A
d. Hypovitaminosis C
e. Hypovitaminosis B1

102. Oral mucosa of a patient was treated with hydrogen peroxide. Instead of foaming, the blood turned brown. That is possible in case of reduced concentration of the following enzyme:

a. Acetyltransferase
b. Methemoglobin reductase
c. Pseudocholinesterase
d. Glucose-6-phosphate dehydrogenase

e. Catalase

103. Electrophoretic study of blood serum of a patient with pneumonia revealed an increase in one of the protein fractions. What fraction is it?

a. Gamma-globulins
b. Alpha1-globulins
c. Beta-globulins
d. Alpha2-globulins
e. Albumins

104. To what total ATP quantity is the full glucose oxidation and its linking with phosphorylation equivalent?

a. 58
b. 38
c. 12
d. 8
e. 52

105. A man is in the state of rest. He has been forcing himself to breath deeply and frequently for 3-4 minutes. What effect will it have upon acid-bace balance of the organism?

a. Respiratory alkalosis
b. Metabolic alkalosis
c. There will be no change in acid-base balance
d. Metabolic acidosis
e. Respiratory acidosis

106. A patient with diabetes mellitus had an insuline injection. It caused loss of consciousness and convulsions. What was the result of biochemic blood analysis on glucose content?

a. 10 mmole/l
b. 5,5 mmole/l
c. 3,3 mmole/l
d. 8,0 mmole/l
e. 2,5 mmole/l

107. A patient with chronic hypoglycemia had adrenaline introduction. After introduction blood test hasnt changed essentially. Doctor assumed liver pathology. What liver function may have been changed?

a. Function of glycogen depositing
b. Ketogenic function
c. Excretory function
d. Glycolytic function
e. Function of cholesterin production

108. For assessment of the neutralizing function of liver a patient with chronic hepatitis went through a test with natrium benzoate load. The excretion of what acid with urine will characterize the neutrolizing function of liver?

a. Valeric acid
b. Oxalic acid
c. Phenylacetic acid
d. Citric acid
e. Hippuric acid

109. A patient with high obesity was recommended to take carnitine as a food additive for better fat burning. What function is fulfilled by carnitine in the process of fat oxidation?

a. Transport of fatty acids from the cytosol to the mitochondria
b. Participation in one of the reactions of beta-oxidation of fatty acids
c. Intracellular lipolysis activation
d. Fatty acid activation

e. Transport of fatty acids from the fat depots to the tissues

110. Examination of urine in a newborn revealed presence of citrulline and high ammonia concentration. This baby is most likely to have the disorder of the following substance production:

a. Ammonia
b. Uric acid
c. Urea
d. Creatinine
e. Creatine

111. A 57 year old patient with diabetes mellitus was developed ketoacedosis. Biochemical base of this condition is smaller extent of acetyl-CoA utilization. What cell compound deficit causes this effect?

a. Succinate
b. Oxaloacetate
c. Glutamate
d. 2-oxoglutarate
e. Aspartate

112. Examination of a 6 days old infant revealed phenyl pyruvate and phenyl acetate excess in his urine. What amino acid metabolism is disturbed in the childs organism?

a. Tryptophan
b. Histidine
c. Arginine
d. Phenylalanine
e. Methionine

113. When a wound heals, a scar takes its place. What substance is the main component of its connective tissue?

a. Keratan sulfate
b. Elastin
c. Collagen
d. Chondroitin sulfate
e. Hyaluronic acid

114. A patient has painfulness along big nerve trunks and excessive content of pyruvate in blood. What vitamin deficit may cause such changes?

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

115. Certain infections caused by bacteria are treated with sulphanilamides that block the synthesis of bacterial growth factor. What is the mechanism of these drugs action?

a. They are allosteric enzyme inhibitors
b. They inhibit the folic acid absorption
c. They are antivitamins of p-aminobenzoic acid
d. They are involved in redox processes
e. They are allosteric enzymes

116. A patient who is ill with scurvy displays disturbed processes of connective tissue formation that leads to loosening and falling of teeth. Disturbed activity of what enzyme causes these symptomps?

a. Elastase
b. Glycosiltransferase
c. Lisilhydroxylase
d. Procollagenpeptidase of N-terminal peptide
e. Procollagenpeptidase of C-terminal peptide

117. Decreased ratio of adenylic nucleotides ATP/ADP results in intensified glycolysis in parodentium tissues under hypoxia conditions. What reaction is activated in this case?

a. Lactate dehydrogenase
b. Phosphofructokinase
c. Triosophosphate isomerase
d. Aldolase
e. Enolase

118. A sportsman was recommended to take a preparation with carnitine in order to improve his achievements. What process is activated by carnitine to the most extent?

a. Tissue respiration
b. Transporting of fatty acids to the mitochondrions
c. Synthesis of ketone bodies
d. Synthesis of steroid hormones
e. Lypide synthesis

119. A patient has liver cirrhosis. Analysis of what substance excreted with urine may characterize the state of antitoxic liver function?

a. Uric acid
b. Amino acids
c. Ammonian salts
d. Creatinine
e. Hippuric acid

120. Cyanide poisoning causes immediate death. What is the mechanism of cyanide effect at the molecular level?

a. They bind substrates of tricarboxylic acid cycle
b. They inactivate oxygene
c. They inhibit cytochrome B
d. They inhibit cytochromoxidase
e. They block succinate dehydrogenase

121. A patient has the folowing changes: disorder of twilight vision, drying out of conjunctiva and cornea. Such disorders may be caused by deficiency of vitamin:

a. Vitamin C
b. Vitamin B
c. Vitamin A
d. Vitamin D
e. Vitamin B12

122. A patient was taken to the hospital with preliminary diagnosis progressive muscle distrophy. What substance will be excessively contained in urine and confirm this diagnosis?

a. Pyruvate
b. Troponine
c. Hydroxiproline
d. Creatine
e. Carnosine

123. A child has disturbed enamel and dentine formation as a result of decreased content of calcium ions in his blood. What hormone deficiency may cause such changes?

a. Thyroxin
b. Somatotropin
c. Thyreocalcitonin
d. Parathormone
e. Triiodothyronine

124. A child was diagnosed with acute renal failure. What biochemic saliva indices can confirm this diagnosis?

a. Increased level of rest nitrogen
b. Reduction of alkaline phosphatase
c. Decreased level of phosphate
d. Increase of alpha amylase
e. Increase of immunoglobuline A

125. Cationic glycoproteins are the major components of parotid saliva. What amino acids are responsible for their positive charge?
a. Aspartate, glutamate, glycine
b. Glutamate, valine, leucine
c. Cysteine, glycine, proline
d. Lysine, arginine, histidine
e. Aspartate, arginine, glutamate

126. A child has disturbed processes of ossification and punctate enamel. What micro-element metabolism is disturbed?
a. Fluorine
b. Zinc
c. Copper
d. Chromium
e. Iron

127. Periodontitis is accompanied by activation of proteolysis in the periodontium tissues. The evidence of proteolysis activation is increase of the following component of oral liquid:
a. Cholesterol
b. Amino acids
c. Glucose
d. Organic acids
e. Biogenic amines

128. A 28 year old pregnant woman had the enzymes in the cells of amniotic fluid analyzed. The analysis revealed insufficient activity of beta-glucuronidase. What pathological process is it?
a. Glycogenosis
b. Collagenosis
c. Lipidosis
d. Mucopolysaccharidosis
e. Aglycogenosis

129. A 42 year old woman diagnosed with diabetes mellitus was admitted th the endocrinological department with complaints of thirst, excessive appetite. What pathological components are revealed in course of laboratory examination of the patients urine?
a. Protein, aminoacids
b. Bilirubin, urobilin
c. Blood
d. Glucose, ketone bodies
e. Protein, creatine

130. After severe viral hepatitis a 4-year-old boy presents with vomiting, occasional loss of consciousness, convulsions. Blood test revealed hyperammoniemia. Such condition is caused by a disorder of the following biochemical hepatic process:
a. Activation of amino acid decarboxylation
b. Inhibition of transamination enzymes
c. Disorder of biogenic amines neutralization
d. Protein synthesis inhibition
e. Disorder of ammonia neutralization

131. A patient has increased content of uric acid in his blood that is clinically presented by pain syndrome as a result of urate deposition in the joints. What process does this acid result from?

a. Heme catabolism
b. Lysis of pyrimidine nucleotides
c. Lysis of purine nucleotides
d. Proteolysis
e. Reutilization of purine bases

132. A non trained man has usually muscular hypoxy after a sprint. What metabolite accumulates in the muscles as a result of it?
a. Glucose 6-phosphate
b. Ketone bodies
c. Lactate
d. Oxaloacetate
e. -

133. Myocyte cytoplasm contains a big number of dissolved metabolites of glucose oxidation. Name one of them that turns directly into lactate:
a. Glycerophosphate
b. Oxaloacetate
c. Pyruvate
d. Glucose 6-phosphate
e. Fructose 6-phosphate

134. Chronic overdosage of glucocorticoids leads to the development of hyperglycemia. What process of carbohydrate metabolism is responsible for this effect?
a. Glycogenesis
b. Gluconeogenesis
c. Aerobic glycolisis
d. Glycogenolysis
e. Pentose-phosphate cycle

135. Patient with pigmentary xeroderma are characterized by anamalously high sensivity to ultraviolet rays that causes skin cancer as a result of enzyme systems incapability to restore damages of hereditary apparatus of cells. What process abnormality is this pathology connected with?
a. Genetic complementation
b. DNA reduplication
c. Genetic conversion
d. DNA recombination
e. DNA reparation

136. In compliance with the clinical presentations a man was prescribed pyridoxalphosphate. What processes are corrected by this preparation?
a. Transamination and decarboxylation of amino acids
b. Desamination of purine nucleotides
c. Protein synthesis
d. Synthesis of purine and pyrimidine bases
e. Oxidative decarboxilation of keto acids

137. Examination of a 30-year-old mans mandible revealed in the region of his molar a dense tumour-like formation that significantly deformed the mandible. Here and there the formation wasnt fully detached from the bone tissue. Microscopical examination of a tissue sampling revealed that stroma had some cords and follicles with odontogenous cylindric epithelial cells in peripheria and stellate cells resembling of the enamel oragan pulp in the centre. What is the most likely diagnosis?
a. Ameloblastoma
b. Primary intraosteal cancer
c. Osteoclastoma
d. Adenocarcinoma
e. Adenomatoid tumour

138. A patient has deformation of jaw bones. Histological examination revealed there growth of fibrocellular tumour-like ill-defined tissue with primitive osteogenesis. What disease are these presentations typical for?

a. Parathyroid osteodystrophy
b. Fibrous dysplasia
c. Osteosarcoma
d. Ameloblastoma
e. Eosinophilic granuloma

139. The first grade pupils went through a medical examination aimed at selection of children needing tuberculosis revaccination. What test was applied?

a. Mantoux test
b. Supracutaneous tularin test
c. Anthracene test
d. Burne test
e. Schick test

140. A 10 year old child underwent Mantoux test (with tuberculin). 48 hours later there apperaed a papule up to 8 mm in diameter on the site of tuberculin injection. Tuberculin injection caused the following hypersensitivity reaction:

a. Arthus reaction
b. Atopic reaction
c. II type hypersensitivity reaction
d. IV type hypersensitivity reaction
e. Seroreaction

141. The activity of parotides reduces with age. Activity of what enzyme in saliva will be reducing?

a. Hexokinase
b. Maltase
c. Lysozime
d. Phosphatase
e. Amylase

142. While the examination of patients oral cavity the dentist found xerostomia, numerous erosions. What vitamin deficit caused this effect?

a. Vitamin K
b. Vitamin H
c. Vitamin PP
d. Vitamin A
e. Vitamin P

143. A patient with focal tuberculosis of superior lobe of his right lung takes isoniazid as a part of combined therapy. After a time he started complaining of muscular weakness, decrease of skin sensitivity, sight and movement coordination disorder. What vitamin preparation will be right for elimination of these occurances?

a. Vitamin B12
b. Vitamin C
c. Vitamin A
d. Vitamin D
e. Vitamin B6

144. Up to 50% of world population aged above thirty is affected by paradontosis. The leading part in pathogenesis of this disease is played by:

a. Neurodystrophic factor
b. Parodontium damaged by active cells
c. Immune damage of tissues
d. Dental calculus caused by microflora
e. Parodontium tissues damaged by kallikrein

145. Products of some proteins hydrolysis and modification are the biologically active substances called hormones. Lipotropin, corticotropin, melanotropin and endorphins are synthesized in the hypophysis of the following protein:

a. Proopiomelanocortin (POMC)
b. Neurostromin
c. Thyreoglobulin
d. Neuroglobulin
e. Neuroalbumin

146. In patients with the biliary tract obstruction the blood coagulation is inhibited; the patients have frequent haemorrhages caused by the subnormal assimilation of the following vitamin:

a. C
b. K
c. D
d. A
e. E

147. A 50-year-old woman with myocardial infarction has been delivered to the intensive care unit. Which enzymes activity will be most increased during the first two days?

a. LDH5
b. Aspartate aminotransferase
c. Alanine aminopeptidase
d. Alanine aminotransferase
e. LDH4

148. A 38 year old patient takes aspirin and sulfanilamides. After their intake intensified erythrocyte haemolysis is observed which is caused by deficiency of glucose 6-phosphate dehydrogenase. This pathology is caused by failure of the following coenzyme:

a. FMN-H2
b. Ubiquinone
c. FAD-H2
d. Pyridoxal phosphate
e. NADP-H

149. In the mountains some clinically healthy people present with anaemia symptoms. Blood test can reveal sickle cells. What is the genotype of such people?

a. aa
b. XcXc
c. XCXc
d. Aa
e. AA

150. Active physical work induces rise of concentration of carbonic acid in blood. This causes deepening and acceleration of respiration thus reducing concentration of carbonic acid and hydrogen ions in blood. This maintains the following process:

a. Homeostasis
b. Ontogenesis
c. Anabiosis
d. Orthobiosis
e. Immunity

151. During examination of an 11-month-old infant a pediatrician revealed osteoectasia of the lower extremities and delayed mineralization of cranial bones. Such pathology is usually provoked by the deficit of the following vitamin:

a. Cholecalciferol
b. Pantothenic acid
c. Riboflavin
d. Bioflavonoids

e. Thiamin

152. Examination of a patient suffering from chronic hepatitis revealed a significant decrease in the synthesis and secretion of bile acids. What process will be mainly disturbed in the patients bowels?
a. Protein digestion
b. Glycerin absorption
c. Amino acid absorption
d. Fat emulsification
e. Carbohydrate digestion

153. After a sprint an untrained person develops muscle hypoxia. This leads to the accumulation of the following metabolite in muscles:
a. Lactate
b. Acetyl CoA
c. Oxaloacetate
d. Glucose 6-phosphate
e. Ketone bodies

154. During physical exercise people are less sensitive to pain. The reason for it is the activation of:
a. Nociceptive system
b. Sympathoadrenal system
c. Adrenal gland functions
d. Antinociceptive system
e. Thyroid gland functions

155. Depressions and emotional disorders result from noradrenaline, serotonin and other biogenic amines deficiency in brain. Concentration of these compounds in synapses can be increased by means of antidepressants that inhibit the activity of the following enzyme:
a. Diamine oxidase
b. D-amino acid oxidase
c. Phenylalanine-4-monooxigenase
d. Monoamine oxidase
e. L-amino acid oxidase

156. A patient was diagnosed with seborrheic dermatitis associated with vitamin H (biotin) deficiency. The patient has disturbed activity of the following enzyme:
a. Acetyl-CoA-carboxylase
b. Alcohol dehydrogenase
c. Carbomoyl phosphate synthetase
d. Amino transferase
e. Pyruvate decarboxylase

157. Coprological examination of a patients feces revealed small operculate eggs. It is known from the anamnesis that the patient often consumes fish. What fluke parasitizes in the patients organism?
a. Cat liver fluke
b. Lung fluke
c. Lancet fluke
d. Liver fluke
e. Blood fluke

158. While on holiday in the countryside a boy found a spider with the following morphological peculiarities: body length at the rate of 2 cm, round black abdomen with two rows of red dots on its dorsal surface, four pairs of segmented extremities covered with tiny black hairs. Identify this arthropod:
a. Scorpion
b. Mite
c. Tarantula
d. Steppe spider (Latrodectus tredecimguttatus)

e. Solifugae

159. A patient applied to a doctor complaining about dizziness, memory impairment, periodical convulsions. It was found out that such changes were caused by a product of glutamic acid decarboxylation. What product is meant?

a. Pyridoxalphosphate
b. ATP
c. Tetrahydrofolate
d. GABA
e. Thymidine diphosphate

160. During starvation normal rate of glucose is maintained by means of gluconeogenesis activation. What substance can be used as a substrate for this process?

a. Alanine
b. Adenine
c. Guanine
d. Urea
e. Ammonia

161. A hospital admitted a patient with complaints about abdominal swelling, diarrhea, meteorism after consumption of food rich in proteins. It is indicative of disturbed protein digestion and their intensified decaying. What substance is the product of this process in the bowels?

a. Indole
b. Cadaverine
c. Putrescine
d. Agmatine
e. Bilirubin

162. A 60-year-old man with a history of chronic intestinal obstruction has excessive protein putrefaction in the colon. What is the indicator of this process?

a. Hyperuricuria
b. Bilirubinuria
c. Indicanuria
d. Creatinuria
e. Glycosuria

163. A sportsman needs to improve his sporting results. He was recommended a drug containing carnitine. What process is activated by this compound in the first place?

a. Transport of fatty acids
b. Transport of calcium ions
c. Transport of vitamin K
d. Transport of glucose
e. Transport of amino acids

164. Laboratory examination of a child revealed high content of leucine, valine, isoleucine and their ketoderivates in blood and urine. Urine had the typical smell of maple syrup. This disease was caused by deficiency of the following enzyme:

a. Glucose-6-phosphatase
b. Aminotransferase
c. Dehydrogenase of branched amino acids
d. Phosphofructokinase
e. Phosphofructomutase

165. A patient suffering from hepatocerebral degeneration has low concentration of ceruloplasmin in blood serum. What element accumulation will be observed in liver, cerebrum and kidneys of the patient?

a. Potassium
b. Ferrum

c. Calcium
d. Sodium
e. Cuprum

166. In order to speed up healing of the thermal injury it is required to prescribe a drug that facilitates epithelization of skin and mucous membranes. What drug is it?
a. Nicotinic acid
b. Tocopherol acetate
c. Retinol acetate
d. Ergocalciferol
e. Ascorbic acid

167. Researches of the latest decades established that immediate "executors" of cell apoptosis are special enzymes called caspases. Generation of one of them proceeds with participation of cytochrome C. What is its function in a normal cell?
a. Enzyme of respiratory chain of electron transport
b. Enzyme of beta-oxidation of fatty acids
c. Component of pyruvate-dehydrogenase system
d. Component of H+ATP system
e. Enzyme of tricarboxylic acid cycle

168. A 28 year old woman consulted a doctor about sterility. Examination revealed underdeveloped ovaries and uterus, irregular menstrual cycle. Study of sex chromatin revealed 2 Barrs bodies in most somatic cells. What chromosome disease is the most probable in this case?
a. Pataus syndrome
b. Edwards syndrome
c. Triplo-X syndrome
d. Klinefelters syndrome
e. Turners syndrome

169. Medical ambulance delivered a 2 year old girl to the childrens department. Objectively: the child is inert, apathetic. Liver is enlarged, study of biopsy material revealed glycogen excess. Blood glucose rate is below normal. The most probable cause of hypoglycemia is:
a. Low activity of glucose 6-phosphatase
b. High activity of glucokinase
c. Low activity of glycogen phosphorylase
d. Low activity of glucose 1-phosphate uridine transferase
e. Low activity of glycogen synthase

170. Clinical examination enabled to make a provisional diagnosis: stomach cancer. Gastric juice contained lactic acid. What type of glucose catabolism turns up in the cancerous cells?
a. Glucose-alanine cycle
b. Anaerobic glycolysis
c. Gluconeogenesis
d. Pentose-phosphate cycle
e. Aerobic glycolysis

171. A 22 year old woman has been taking sulfanilamides for a long time that led to symptoms of hemolytic anaemia caused by hereditary disturbance of synthesis of glucose 6-phosphate dehydrogenase. This enzyme of pentose-phosphate cycle is responsible for generation of:
a. NAD
b. FMN
c. ATP
d. NADP-H2
e. FAD

172. Dehelmintization of a patient revealed some long fragments of a helminth with segmented structure. Mature segments were rectangular, 30x12 mm large, closed-type matrix was in form of a

stem with 17-35 lateral branches. Specify this helminth:

a. Hookless tapeworm

b. Echinococcus

c. Armed tapeworm

d. Dwarf tapeworm

e. Alveococcus

173. A man got poisoned with mushrooms. They contain muscarine that stimulates muscarinic cholinoreceptors. What symptom is typical for poisoning with inedible mushrooms?

a. Arterial pressure rise

b. Miosis

c. Bronchi dilation

d. Mydriasis

e. Heart rate rise

174. A patient suffering from syphilis was prescribed a drug the action of which based upon disturbed generation of murein leading to death of the causative agent. What drug is it?

a. Ciprofloxacin

b. Bijochinol

c. Benzylpenicillin sodium salt

d. Azithromycin

e. Doxycycline hydrochloride

175. A patient has roundish ulcers on his face, inflammation and enlargement of lymph nodes. These symptoms turned up as a result of mosquito bites. Laboratory examination of discharge from the ulcers revealed unicellular aflagellar organisms. What is the most probable diagnosis?

a. Scabies

b. Toxoplasmosis

c. Dermatotropic leishmaniasis

d. Trypanosomiasis

e. Myasis

176. During examination of a 36-year-old woman a dentist revealed a formation in form of a nodule up to 0,8 cm in diameter, of dark brown-red colour, soft, on a wide base. The formation was found on the buccal surface of gum in the region of the 2nd molar. Histological examination revealed that the formation had plenty of sinusoid vessels and a lot of roundish mononuclear and big multinuclear cells; in some parts accumulations of hemosiderin granules could be found. What is the most likely diagnosis?

a. Mandibular osteoclastoma

b. Giant-cell epulis

c. Angiomatous epulis

d. Root granuloma

e. Ameloblastoma

177. Osteolathyrism is characterized by a loss of tensile strength of collagen, which is induced by a significant decrease in the formation of cross-links in collagen fibrils. The cause for it is the reduced activity of:

a. Monoamine oxidase

b. Lysyl hydroxylase

c. Collagenase

d. Lysyl oxidase

e. Prolyl hydroxylase

178. Depressions and emotional insanities result from the deficit of noradrenalin, serotonin and other biogenic amines in the brain. Their concentration in the synapses can be increased by means of the antidepressants that inhibit the following enzyme:

a. Phenylalanine-4-monooxygenase

b. Monoamine oxidase

c. L-amino-acid oxidase
d. Diamine oxidase
e. D-amino-acid oxidase

179. Analysis of urine from a 24-year-old man revealed the following changes: daily diuresis - 10 l, relative density - 1,001, qualitative alterations are absent. A patient complains of excessive thirst, frequent urination. What is the most likely cause of this disease?
a. Vasopressin hyposecretion
b. Vasopressin hypersecretion
c. Aldosteron hypersecretion
d. Relative insulin insufficiency
e. Glucocorticoid hypersecretion

180. A sample taken from the pharynx of a patient with angina was inoculated on the blood-tellurite agar. This resulted in growth of grey, radially striated (in form of rosettes) colonies up to 4-5 mm in diameter. Microscopically there can be seen gram-positive rods with club-shaped ends arranged in form of spread fingers. What microorganisms are these?
a. Diphtheroids
b. Clostridium botulinum
c. Corynebacteria diphtheriae
d. Streptococci
e. Streptobacilli

181. Cytogenetic examination of a patient with dysfunction of the reproductive system revealed normal karyotype 46,XУ in some cells, but most cells have Klinefelters syndrome karyotype - 47,XXУ. Such phenomenon of cell inhomogeneity is called:
a. Duplication
b. Heterogeneity
c. Inversion
d. Transposition
e. Mosaicism

182. A 15 year old girl was delivered to the hospital with inflammation of vermiform appendix. Blood analysis revealed signs of anaemia. Her feces contained lemon-shaped helminthic eggs (50x30 micrometer) with "plugs" on the poles. What type of helminth is it?
a. Hymenolepis nana
b. Trichuris
c. Hookworm
d. Pinworm
e. Echinococcus

183. Histological examination of a microspecimen presenting a malignant lung tumour revealed that the tumor consisted of lymphocyte-like cells forming any structures. Stroma is mildely marked, there are a lot of mitoses and necroses. What tumour is it?
a. Squamous cell nonkeratinous carcinoma
b. Fibroma
c. Small cell carcinoma
d. Squamous cell keratinous carcinoma
e. Adenocarcinoma

184. Microscopical examination of a surgical specimen (an ulcered part of a lip) revealed in the connective tissue of mucous membrane near the borders and under the floor of the ulcer some epithelial complexes consisting of atypic multistratal epithelium with accumulations of bright pink concentric formations. What pathology is it?
a. Transitional cell carcinoma
b. Squamous cell nonkeratinous carcinoma
c. Squamous cell keratinous carcinoma
d. Basal cell carcinoma

e. Papilloma

185. The 16th tooth of a patient is missing. X-ray picture shows in the depth of alveolar process rarefaction of bone and a well-defined cavity that contained the underdeveloped tooth crown. Microscopical examination revealed that the cavity wall was lined with stratified squamous epithelium and enclosed within a fibrous capsule. Make a diagnosis:

a. Cyst of the incisive canal
b. Radicular gnathic cyst
c. Follicular gnathic cyst
d. Cystic ameloblastoma of jaw
e. Primordial gnathic cyst

186. Laboratory of extremely dangerous infections received a sample taken from a patient with assumed cholera. What express-diagnostics method can confirm this diagnosis?

a. Complement binding reaction
b. Precipitation reaction
c. Hemagglutination reaction
d. Immunofluorescence test
e. Agglutination test

187. Steatosis is caused by accumulation of triacylglycerols in hepatocytes. One of the mechanisms of this disease is to reduce the utilization of neutral fat VLDL. What lipotropic substances prevent the steatosis development?

a. Alanine, B1, PP
b. Arginine, B2, B3
c. Methionine, B6, B12
d. Valine, B3, B2
e. Isoleucine, B1, B2

188. A patient has symptoms of atherosclerosis. What plasma lipid transport forms should have an increased concentration?

a. LDL
b. IDL
c. Chylomicrons
d. VLDL
e. HDL

189. In clinical practice tuberculosis is treated with izoniazid preparation - that is an antivitamin able to penetrate into the tuberculosis bacillus. Tuberculostatic effect is induced by the interference with replication processes and oxidation-reduction reactions due to the buildup of pseudo-coenzyme:

a. TDP
b. CoQ
c. FAD
d. FMN
e. NAD

190. A newborn child was found to have reduced intensity of sucking, frequent vomiting, hypotonia. Urine and blood exhibit increased concentration of citrulline. What metabolic process is disturbed?

a. Cori cycle
b. Ornithinic cycle
c. Glycolysis
d. Tricarboxylic acid cycle
e. Glyconeogenesis

191. Some proteins of saliva have a protective function. Which of them protects the oral mucosa from the mechanical damage?

a. Renin
b. Mucin

c. Catalase
d. Lysozyme
e. Peroxidase

192. A 49-year-old driver complains about unbearable constricting pain behind the breastbone irradiating to the neck. The pain arose 2 hours ago. Objectively: the patients condition is grave, he is pale, heart tones are decreased. Laboratory studies revealed high activity of creatine kinase and LDH1. What disease are these symptoms typical for?

a. Acute myocardial infarction
b. Stenocardia
c. Diabetes mellitus
d. Cholelithiasis
e. Acute pancreatitis

193. An ophthalmologist has detected increased time of darkness adaptation in the patient's eye. What vitamin deficiency can cause this sign?

a. K
b. D
c. E
d. C
e. A

194. The patient exhausted by starvation presents with intensification of the following process in the liver and kidneys:

a. Urea synthesis
b. Hippuric acid synthesis
c. Uric acid synthesis
d. Gluconeogenesis
e. Bilirubin synthesis

195. Various substances can be used as anticoagulants. Among them there is a certain naturally derived polysaccharide. Name this polysaccharide:

a. Chondroitin sulfate
b. Dextran
c. Hyaluronic acid
d. Dermatan sulfate
e. Heparin

196. A patient presents with osteoporosis. Hypercalcemia and hypophosphatemia are observed in the patient's blood. What is the cause of this condition?

a. Increased corticosteroid secretion
b. Inhibited corticosteroid secretion
c. Increased thyroxin secretion
d. Inhibited parathormone secretion
e. Increased parathormone secretion

197. A patient with pulmonary tuberculosis is prescribed rifampicin that inhibits RNApolymerase enzyme at the stage of initiation of the following process:

a. Translation
b. Termination
c. Elongation
d. Transcription
e. Replication

198. The patient's saliva has been tested for antibacterial activity. What saliva component has antibacterial properties?

a. Amylase
b. Parotin

c. Cholesterol
d. Lysozyme
e. Ceruloplasmin

199. A 35-year-old man has come to a dentist with complaints of decreased density of dental tissue and increased brittleness of his teeth during consumption of solid food. Laboratory analysis measured Ca/P correlation in the enamel sample. What value of Ca/P indicates increased demineralization?
a. 0.9
b. 1.85
c. 1.5
d. 2.5
e. 1.67

200. Lab rats were used to study the effect of a certain vitamin on the body. Deficiency of this vitamin has resulted in a disturbed reproductive function and skeletal muscle dystrophy. What vitamin is it?
a. E
b. A
c. D
d. K
e. B2

201. In the patient’s blood there is a C-reactive protein that chemically can be classified as a glycoprotein. It indicates the following pathology:
a. Rheumatism
b. Thrombocytopenia
c. Porphyria
d. Anemia
e. Leucopenia

202. An 8-year-old child presents with frequent severe subcutaneous hemorrhages. Prescription of Vicasol, synthetic analogue of vitamin K, had a positive effect. This vitamin participates in gamma-carboxylation of glutamic acid in a certain blood-clotting protein. Name this protein:
a. Prothrombin
b. Hageman factor
c. Proconvertin
d. Rosenthal factor
e. Fibrinogen

203. A child presents with hepatomegaly, hypoglycemia, and convulsions that occur predominantly during fasting or in stressinducing situations. The child is diagnosed with von Gierke disease (glycogen storage disease type I). What enzyme is affected by the genetic defect that is the cause of this disease?
a. Glucokinase
b. Glucose 6-phosphatase
c. Phosphoglucomutase
d. Amylo-1,6-glycosidase
e. Glycogen phosphorylase

204. Formation of a large amount of immunoglobulins with various antigen specificity from a small number of genes occurs due to:
a. Translocation
b. Deletion
c. Replication
d. Recombination
e. Transcription

205. Glucose synthesis from non-carbohydrate components is an important biochemical process. Gluconeogenesis from amino acids occurs most actively if a diet is rich in proteins. Which amino acid

of those listed below is the most glucogenic?

a. Leucine
b. Valine
c. Lysine
d. Alanine
e. Isoleucine

206. A 6-year-old girl exhibits marked signs of hemolytic anemia. Biochemical anlysis of her erythrocytes shows deficiency of glucose 6-phosphate dehydrogenase enzyme. What metabolic process is disturbed in this patient and has leading role in the development of this pathology?

a. Tissue respiration
b. Oxidative phosphorylation
c. Pentose-phosphate pathway
d. Anaerobic glycolysis
e. Gluconeogenesis

207. A patient was diagnosed with a genetic disorder leading to lipoprotein lipase deficiency. What finding will be characteristic of biochemical blood analysis in this case?

a. Hypertriacylglycerolemia
b. Hyperglycemia
c. Hypochylomicronemia
d. Hypotriacylglycerolemia
e. Hypoglycemia

208. A patient with Cushing syndrome presents with persistent hyperglycemia and glucosuria. This patient is likely to have increased production and secretion of the following hormone:

a. Cortisol
b. Glucagon
c. Aldosterone
d. Thyroxine
e. Adrenaline

209. A 25-year-old young man complains of general weakness, rapid fatigability, irritability, reduced working ability, and bleeding gums. What vitamin deficiency is the most likely cause of this condition?

a. Folic acid
b. Ascorbic acid
c. Thiamine
d. Riboflavin
e. Retinol

210. A 37-year-old woman presents with fructosemia and fructosuria. Her blood glucose is 2.1 mmol/L. She is diagnosed with fructose intolerance. What congenital enzyme deficiency is the molecular basis of this disease?

a. Triose-phosphate isomerase
b. Phosphoglucomutase
c. Hexokinase
d. Phosphofructokinase
e. Fructose 1-phosphate aldolase