Carbohydrates

1. Decreased concentration of the glucose leads to the increased secretion of:
Serotonin
Acetylcholine
Histamine
+Adrenalin
Dopamine

2. The utilization of glucose by cells is promoted by…
Glucagon
+Insulin
Adrenalin
Thyroxin
Somatotropin

3. The patient with the symptoms of acute alcoholic poisoning was brought in clinic. Which changes of carbohydrates metabolism are typical for this condition?
The anaerobic breakage of glucose is increased in muscles
The gluconeogenesis is increased in liver
The breakage of glycogen is increased in liver
The anaerobic glucose metabolism predominates in muscles
+The speed of gluconeogenesis in liver is decreased

4. A 7-year-old girl has signs of anemia. Laboratory examination revealed pyruvate kinase deficiency in erythrocytes. What process disturbance plays the main role in anemia development?
+Peroxide decomposition
Anaerobic glycolysis
Tissue respiration
Aminoacids deamination
Oxidative phosphorylation

5. The loss of consciousness and cramp occur with the patient who suffers on diabetes mellitus after the insulin injection. What result can give a biochemical blood test on sugar maintenance?
5,5 mmol/l
8,0 mmol/l
10,0 mmol/l
3,3 mmol/l
+1,5 mmol/l

6. A patient with diabetes mellitus has been delivered in hospital in the state of unconsciousness. Arterial pressure is low. The patient has acidosis. Point substances, which accumulation in the blood results in these manifestations:
High fatty acids
Monosaccharides
Amino acids
+Ketone bodies
Cholesterol esters

7. Buffer capacity of blood was decreased in the worker due to exhausting muscular work. Entry of what acid substances to the blood can explained this state?
Pyruvate
1,3-bisphosphoglycerate

+Lactate
Alpha-ketoglutarate
3-phosphoglycerate

8. A patient with the symptoms of acute alcoholic poisoning was brought to the hospital. What carbohydrates metabolism changes are typical for this condition?
The gluconeogenesis is increased in liver
The anaerobic glucose metabolism predominates in muscles
+The gluconeogenesis velocity in liver is decreased
The breakage of glycogen is increased in liver
The anaerobic breakage of glucose is increased in muscles

9. Galactosemia has been revealed in a child. Concentration of glucose in the blood has not considerably changed. What enzyme deficiency caused this illness?
Galactokinase
Phosphoglucomutase
+Galactose-1-phosphate uridyltransferase
Hexokinase
Amylo-1,6-glucosidase

10. The gluconeogenesis is activated in the liver after intensive physical trainings .What substance is utilized in gluconeogenesis first of all in this case:
Glutamate
Lactate
Alanine
Glucose
+Pyruvate

11. A worker has decreased buffer capacity of blood due to exhausting muscular work. The influx of what acid substance in the blood can cause this symptom?
3-phosphoglycerate
1,3-bisphosphoglycerate
+Lactate
alfa-ketoglutarate
Pyruvate

12. A patient with diabetes mellitus experienced loss of consciousness and convulsions after injection of insulin. What is the result of biochemical blood analysis for concentration of the sugar?
10,0 mmol/L
3,3 mmol/L
8,0 mmol/L
5,5 mmol/L
+1,5 mmol/L

13. Microsomal oxidation is the universal biological system of the oxidation of the non-polar compounds (many drugs, toxic compounds), steroid hormones, and cholesterol. Indicate name of cytochrome, which takes part in the microsomal oxidation.
Cytochrome aa3
+Cytochrome P 450
Cytochrome b
Cytochrome c
Cytochrome c1

14. A 30-year-old woman was diagnosed with insufficiency of exocrine function of pancreas. Hydrolysis of what nutrients will be disturbed?
Proteins, fats
Proteins, carbohydrates
Fats, carbohydrates
+Proteins, fats, carbohydrates
Proteins

15. Analysis of the blood and urine of patient with diabetes mellitus confirmed the hyperglycemia and glucosuria. What available value of glucose concentration in the blood plasma in the patient:
2,54 mmol/l
3,88 mmol/l
4,89 mmol/l
6,55 mmol/l
+9,32 mmol/l

16. Glucose may be transformed into glucose-6-phosphate due to the action of various enzymes in human tissues. Indicate the liver enzyme for this conversion:
Galactokinase
Hexokinase
Fructokinase
+Glucokinase
Phosphofructokinase

17. The glucose-1-phosphate molecules are successfully formed during the process of glycogenolysis in the muscular tissue. Indicate the energy effect (per 1 mol of glucose-1-phosphate) of its further transformation into lactate:
2 ATP
+3 ATP
36 ATP
38 ATP
22 ATP

18. The second stage of aerobic oxidation of glucose in a cell is the oxidative decarboxylation of pyruvate. Name the main product of this process:
Citrate
Glutamate
+Acetyl-CoA
Oxaloacetate
Succinyl-CoA

19. A patient who has been strictly keeping to a certain diet for 10 days went through examination of respiratory coefficient. It was determined that it was 1. What diet have the patient been keeping to?
Mixed
With domination of proteins and carbohydrates
With domination of proteins and fat
+With domination of carbohydrates
With domination of fat and carbohydrates

20. Avidin is the strong specific inhibitor of biotine-depended enzymes. What from the stated

below reactions will be blocked under avidin adding?
Glucose – Pyruvate
+Pyruvate – Oxaloacetate
Oxaloacetate – Glucose
Glucose – riboso-5-phosphate
Lactate – Pyruvate

21. A patient is in the hypoglycemic coma state. Indicate the overdose of what hormone can result such situation.
Corticotropin
Progesteron
Cortisol
Somatotropin
+Insulin

22. For a sick woman with a low arterial blood pressure after parenteral hormone introduction the increase of arterial blood pressure happens and also the level of glucose and lipids was rised in the blood. What hormone was introduced?
Insulin
Glucagon
+Adrenalin
Progesteron
Folliculin

23. At the lack of blood circulation in the period of intensive muscular work in a muscle as a result of anaerobic glycolysis the lactic acid is accumulated. What is subsequent fate of it?
Utillized by tissues for the ketone bodies synthesis
Excreted through kidneys with urine
Used for the glucose synthesis in a muscle
+Included in a gluconeogenesis in a liver
Used in tissues for the fatty acids synthesis

24. Under blood analysis for a patient the expressed hypoglucosemia is discovered on an empty stomach. It appeared at liver biopsy investigation, that there is any glycogen synthesis in the liver cells. Insufficiency of what enzyme is the reason of this disease?
Phosphorylase
+Glycogen synthase
Fructosodiphosphotase
Pyruvatecarboxylase
Aldolase

25. Complete oxidation of glucose molecule and it's coupling with phosphorylation is equivalent to the following total amount of ATP molecules formation:
52
8
12
+38
58

26. An one-year child falls behind in mental development from the yearlings. In the morning: vomiting, cramps, loss of consciousness. In blood – hypoglycemia on an empty stomach. With what enzyme defect is it related to?

Phosphorylase
+Glycogensynthase
Arginase
Sucrase
Lactase

27. As a result of exhausting muscular work for a worker the buffer capacity of blood significantly diminished. What compound entering to the blood is it possible to explain this phenomenon?
1,3- biphosphoglycerate
Pyruvate
+Lactate
alfa- ketoglutarate
3- phosphoglycerate

28. Sick X. a first-aid brought. The state is heavy, consciousness absent, absence of movement. Skin covers are dry, hollow eyes. Cyanosis of person. Tachycardia. A smell of acetone is from a mouth. Results of analyses: blood glucose - 20,1 mmol/l (N= 3,3-5,5 mmol/l), in urine 3,5% (in N=0). What is conceivable diagnosis?
Hypoglycemic coma
+Hyperglycemic coma
Acute cardiac insufficiency
Sharp alcoholic poisoning
Anaphylactic shock

29. A glycogen which entered with a meal is hydrolyzed in gastrointestinal tract. What final product did appear as a result of this process?
Galactase
Lactate
Lactase
+Glucose
Fructose

30. For a patient with diabetes mellitus after the injection of insulin the loss of consciousness, cramp came. What result can give a biochemical blood test on sugar maintenance?
10,0 mmol/l
8,0 mmol/l
+1,5 mmol/l
3,3 mmol/l
5,5 mmol/l

31. At a sprint the untrained man has a muscular hypoxia. What metabolite accumulation it leads in muscles?
Oxaloacetate
Ketone bodies
Acetyle-CoA
Glucose-6-phosphate
+Lactate

32. Plenty of glucose oxidation metabolites are situated in the cytoplasm of myocytes. Name one of them that directly converted into lactate.
Glucose-6-phosphate
Oxaloacetate

Glycerophosphate
+Pyruvate
Fruktose-6-phosphate

33. At a long-distance race the skeletal musculature of the trained man utillizes glucose with the purpose of receipt of ATP energy for muscular contraction. Indicate the basic process of glucose utilization in these conditions.
Anaerobic glycolysis
+Aerobic glycolysis
Glycogenolysis
Gluconeogenesis
Glycogenesis

34. There is alfa-amilase, capable to cleave nutritive in saliva. What substrates can act on this enzyme?
Nucleoproteins
Lipids
Simple proteins
+Carbohydrates
Chromoproteins

35. For a patient with constant hypoglycemia a blood test after introduction of adrenalin did not change substantially. A physician assumed violation in a liver. About what change of liver function can we speak?
Ketogenic
Cholesterol formation function
+Glycogen deposit function
Glycolytic
Excretory

36. At glucose transformation in the pentose cycle a phosphates of different monosaccharides synthesized. What from these matters can be used for nucleic acids synthesis?
Eritroso-4-phosphate
Ribuloso-5-phosphate
+Riboso- 5-phosphate
Sedogeptuloso-7-phosphate
Eksiluloso-5-phosphate

37. The characteristic sign of glycogen storage disease is pain in muscles during physical work. What enzyme inborn insufficiency is predetermines this pathology?
Glycogen synthase
Glucose-6-phosphotase
+Glycogen phosphorylase
Amylo-1,6-glycosidase
Lysosomal glycosidase

38. Sick L., 46 years old, complaine of dryness in a mouth, thirst, frequently urination, common weakness. At a biochemical analysis found out a hyperglycaemia, hyperketonemia. In urine -glucose, ketone bodies. On an electrocardiogram - diffuse changes are in myocardium. What diagnosis is possible for a sick?
+Diabetes mellitus
Alimentary hyperglycaemia

Acute pancreatitis
Diabetes insipidus
Ischemic heart trouble

39. After transfer to the mixed nourishment a new-born child had dyspepsia with diarrhea, flatulence, and lag in development. Insufficiency of what substance is biochemical basis of this pathology?
Cellulases
+Lactase and cellobiose
Trypsin and chymotrypsin
Lipasas and kreatinkinase
Saccharase and isomaltase

40. A 3-years-old child with the enhanced temperature of body after the reception of aspirin has increased hemolisis of RBC. What inborn enzyme insufficiency could cause hemolytic anaemia for a child?
Glycogen phosphorylase
Glucose-6-phosphatase
+Glucose-6-phosphate dehydrogenase
Glycerolphosphate dehydrogenase
gama-glutamil transferase

41. In adjustment of enzymes activity an important place belongs to their postsynthetic covalent modification. What from the noted mechanisms is adjusting of glycogen phosphorylase and glycogen synthase activity carried out?
Metylation
+Phosphorylation-dephosphorylation
Adenyle addition
Limited proteolysis
ADP-ribosylation

42. After the intensive physical training for a sportsman a gluconeogenesis is activated. What is the basic substrate for this process?
Serine
Aspartic acid
Glutamic acid
alfa-ketoglutarate
+Lactate

43. For a 6-years-old child physical activity is decreased, there are signs of movement coordination violation. The genetic defect of pyruvate-dehydrogenase complex is detected. What laboratory indexes decided in the ground of diagnosis?
Alanine is higher of norm
Alanine is below of norm
Pyruvate is below of norm
+Pyruvate is higher of norm
Lactate is below of norm

44. A concentration of glucose in plasma of blood of healthy man is in such limits:
2-4 mmol/l
+3,5-5,5 mmol /l
10-25 mmol/l

6-9,5 mmol/l
1-2 mmol/l

45. In 8- monthly child there is vomiting and diarrhea after fruit juices reception. Loading fructose resulted in hypoglycemia. Indicate the inherited insufficiency of what enzyme is reason of the state of child.
Hexokinase
Fructokinase
+Fructose -1- phosphate aldolase
Phosphofructokinase
Fructose-1,6-diphosphatase

46. For the 34-years-old patient a decreased endurance to the physical trainings takes a place while in skeletal muscles maintenance of glycogen is enhanced. By what enzyme activity decline is it related to?
Glycogen synthase
Glucose-6-phosphate dehydrogenase
Phosphofructokinase
+Glycogen phosphorylase
Glucose-6-phosphatase

47. For a child with the point genes mutation absence of glucose-6-phosphatase, hypoglycemia and hepatomegalia found out. Define the type of pathology which these signs are characteristic for.
Cori's disease
+Von Gierke's diasese
Addison's diasese
Parkinson's diasese
Mc-Ardl's diasese

48. A patient is delivered to medical establishment in the comatose state. According to accompanying it was find out, that a patient lost consciousness during training on the finishing stage of marathon distance. What type of coma it is more probable to suspect?
Hepatic
Hyperclycemic
Acidosis
Hypothyroid
+Hypoglycemic

49. A new-born child after feeding with milk had dyspepsia, vomit. At feeding with glucose solution these phenomenon disappeared. Indicate an enzyme, which takes part in carbohydratess digestion, insufficient activity of which results in these disorders.
Saccharase
Amylase
+Lactase
Isomaltase
Maltase

50. During at run on short distance the untrained people have muscular pain as a result of lactate accumulation. Indicate, with strengthening of what biochemical process can it be related to.
Lipogenesis
Gluconeogenesis
Pentose phosphate pathway

+Glycolysis
Glycogen formation

51. It is indicated that in the complement of pesticide a sodium arsenate is present which blocks lipoic acid. Indicate, what enzymes activity is violated.
Met-gemoglobin-reductase
Microsomal oxidation
+Pyruvate dehydrogenase complex
Glutathione peroxidase
Glutathione reductase

52. The 2-years-old boy has an increase in liver and spleen sizes, cataract. The concentration of glucose is enhanced in blood, however glucose tolerance test is in a norma. Indicate, the inherited violation of what substance exchange is reason of it.
Fructose
+Galactose
Glucose
Maltose
Sucrose

53. The workwoman of chemical enterprise entered the hospital with the signs of poisoning. The enhanceable concentration of arsenium is found in the hairs of this woman, which blocks lipoic acid. Specify, what process violation is the reason of poisoning.
Microsomal oxidation
+Oxidative decarboxylation of pyruvate
Methemoglobin reduction
Organic peroxides reduction
Superoxide ions destroying

54. The 38-years-old person after the reception of aspirin and sulfanilamides has increased erythrocyte hemolysis, which is caused by glucose-6-phosphate dehydrogenase insufficiency. By what coenzyme violation formation this pathology is predefined?
Ubiquinon
FADH2
Pyridoxal phosphate
FMNH2
+NADPH

55. For a 57-years-old patient, who suffers on diabetes mellitus, ketoacidosis is developed. Biochemical basis of this state is diminishing of acetyl-CoA utilization through a shortage in:
Glutamate
2-Oxoglutarate
+oxaloacetate
Aspartate
Succinate

56. A 10-years-old child constantly complains on pain and cramps in muscles after the physical training. At the inspection of blood glucose, lactate and creatine maintenance - at physiology norm. A myoglobin is determined in urine. In biopsy material of muscles the deficit of glycogen phosphorylase is found out - the enzyme which catalyse transformation:
Glucose to glucose-6-phosphate
Glucose-6-phosphate to glucose

Glucose-6-phosphate to glycogenase
+Glycogen to glucose-1-phosphate
Glycogen primer(n) to glycogen(n+1)

57. Activation of what process in tumour cells is most reliable reason of lactic acid appearance in the stomach?
Fatty acids beta-oxidation
Pentosephosphate pathway
+Anaerobic glycolysis
Aerobic glycolysis
Guconeogenesis

58. For 24-years-old girl, exhausted starvation, in a liver most for certain increases:
Formation of conjugated bilirubin
Synthesis of triglycerides
Formation of creatin
Synthesis of hippuric acid
+Gluconeogenesis

59. At a glycogenosis – Geerke's diasese – transformation of glucose-6-phosphate to glucose is violated which results in glycogen accumulation in a liver and kidney. What enzyme deficit is cause of this disease?
Glycogen synthase
+Glucose-6-phosphatase
Phosphorylase
Hexokinase
Aldolase

60. At diabetes mellitus glucose is badly assimilated by tissues, the level of other low-molecular compounds which act as transport water soluble power material is considerably increased in blood. It is:
Pyruvic acid
lactic acids
+Ketone bodies
alfa-ketoglutaric acid
Oxalate

61. A child is sick, apathetic. A liver size is increased and at the biopsy of liver considerable surplus of glycogen is found out. Concentration of glucose in blood is below norma. What is reason of decreased glucose concentration in blood of this person?
Decreased activity of glucose-6-phosphatase
Decreased activity of hexokinase
Increased activity of glycogen synthetase
+Decreased activity of glycogen phosphorylase in liver
Gene deficit which is responsible for the synthesis of glucose-1-phosphateuridinetransferase

62. For a 7-years-old girl signs of anaemia obvious. The deficit of pyruvate kinase is laboratory set in RBC. Violation of what process does play a role in anaemia development for a girl?
Amino acid desamination
Oxidative phosphorylation
Tissue respiration
superoxides decomposition

+Anaerobic glycolysis

63. For a 40- years-old woman hemolytic anaemia is found out which is predefined the genetic defect of glucose-6-phosphate dehydrogenase enzyme in red blood cells. What compound of pentose-phosphate pathway will be broken here in a most measure?
Glucose-6-phosphate
Phosphoenol pyruvate
FADH2
+NADPH2
Dioxyacetonphosphate

64. A new-born child renounces a food, vomit, diarrhea developed for it, and in course of time there was cataract. At an inspection: glucose in blood - 8,5 mmol/l, and in urine - 1\%. What is most reliable diagnosis?
Tyrosinosis
Alkaptonuria
+Galactosemia
Phenylketonuria
Cystinuria

65. In a reanimation department a baby was delivered with such signs: vomit, diarrhea with a dysplasia and development violation, cataract, mental retardation. The diagnosis of galactosemia was established. The deficit of what enzyme does take a place?
Glucokinase
+Galactose-1-phosphate uridyl transferase
UDP glucose-4-epimerase
UDP glucose pyrophosphorylase
Glucose-6-phosphate dehydrogenase

66. For people which long time was in the state of hypodynamia, after the physical training there are intensive pain in muscles. What is the most reliable reason of it?
A kreatinine accumulation in muscles
Increased disintegration of muscular proteins
+A Lactic acid accumulation in the muscles
Diminishing of lipids maintenance in muscles
An increase of maintenance of ADP in muscles

67. For a patient with diabetes mellitus the loss of consciousness came after introduction of insulin, there are cramps. What result could be given in blood biochemical analysis on content of sugar?
10 mmol/l
3,3 mmol/l
8 mmol/l
+1,5 mmol/l
5,5 mmol/l

68. A 40 years old woman is treated in an endocrinology department with a diabetes mellitus diagnosis with complaints about thirst, an appetite is enhanced. What pathological components found out at laboratory investigation of patient’s urine?
Blood
Proteins, amino acid
Proteins, creatine
Bilirubin, urobilin

+Glucose, ketone bodies

69. In blood of child found out high maintenance of galactose, the concentration of glucose is decreased. There is a cataract, mental retardation, the fatty liver regeneration is develops. What disease does take a place?
Lactosemia
Diabetes mellitus
+Galactosemia
Steroid diabetes
Fructosemia

70. For a 40 years old woman the Cushing's diasese is present – steroid diabetes. At a biochemical inspection: hyperglycemia. What from the processes indicated below is activated all things above?
Glycogenolysis
+Gluconeogenesis
Reabsorption of glucose
A transport of glucose inside the cell
Glycolysis

71. Bioenergy of brain is characterized considerable dependence on providing of oxygen. What substrate of oxidization does have a most important for providing of brain energy?
Glycerol-3-phosphate
Fat acids
Ketone bodies
+Glucose
Phosphoenolpyruvate

72. What matter does give saliva's mucus, carries out a protective role, protect mouth cavity from a mechanical damage?
Kallikrein
Glucose
+Mucin
Amylase
Lysocim

73. For a patient which passes the course of medical starvation, the normal level of glucose in blood is supported mainly due to a gluconeogenesis. From what amino acid glucose is most actively synthesized in the liver of man?
Valine
Lysine
+Alanine
Glutamic acid
Leucine

74. A patient with the signs of the sharp alcoholic poisoning is delivered in a clinic. What carbohydrate metabolism changes are characterized for this state?
Increased glycogenolysis in liver
A gluconeogenesis decreases in a liver
Anaerobic glycolysis prevails in muscles
A gluconeogenesis increases in a liver
Aerobic glycolysis increases in muscles

Common pathway of metabolism

1. The activity of which of the following enzymes is directly affected by citrate?
+Phosphofructokinase I
Isocitrate dehydrogenase
Fructose-2,6-bisphosphatase
Pyruvate carboxylase
6-phosphogluconate dehydrogenase

2. Work of the heart muscle requires energy. Specify which substrate is the main source of energy for running muscles?
Amino acids
Fatty acids
Lactic acid
+Pyruvate
alfa- ketoglutaric acid

3. It was established that death of 20-year-old women resulted from cyanide poisoning. What process disorder caused the death?
Hb synthesis
Oxidative phosphorilation
Urea synthesis
+Tissue respiration
Oxygen transport by Hb

4. Nucleoside triphosphates belong to high-energy bonds containing compounds. Point out the quantity of high-energy bonds in their structure:
0
1
+3
2
4

5. The malate and the salicylic acid (uncoupler) were added to the mitochondrion suspension of rats` liver that was incubated in aerobic condition at the optimal temperature and pH. Point out the P/O ratio for the malate oxidation in this situation:
3
+2
0
1
4

6. Choose the right continuation of the phrase:" Tissue respiration in hypoxia state…"
Is activated
Increases the rate of course
+Reduces the rate of course
Is not changed
Supplies more energy for synthetic ways

7. Thyrotoxicosis leads to increased production of thyroidal hormones T3 and T4, weight loss, tachycardia, and psychic excitement and so on. How do thyroidal hormones effect energy metabolism in the mitochondrion of cells?

Stop respiratory chain
Activate oxidative phosphorylation
Stop substrate phosphorylation
Activate substrate phosphorylation
+Disconnect oxidation and oxidative phosphorylation

8. The experimental animal was given a cytochrome oxidase blocker, which led to its instant death. Which of the given substances can cause these changes?
B .Potassium nitrite
Potassium sulfate
+Potassium cyanide
Potassium oxalate
Potassium phosphate

9. The patient with thyroid hyperfunction has high body temperature (fever). What is the main infringement of the energy exchange in rising of temperature during this?
Increase of the lipolysis
The increase of glycogen breakdown
+Uncouple of oxidation and oxidative phosphorylation
Enzymes activation in the Krebs cycle
Activation of respiratory chain's enzymes

10. Patients with thyrotoxicosis have the increase of the body temperature due to:
Increase of uptake of oxygen in the body
+Increases of activity of biological oxidation, disconnecting of processes (uncouple) of oxidation and phosphorylation
Increase of thermogenesis in the liver
The constriction of peripheral vessels
Activation of protein's catabolism

11. Lipoic acid was excluded from diet of the experimental animals, and during this process the inhibition of their pyruvate dehydrogenase complex was observed. What is lipoic acid for this enzyme?
Allosteric regulator
Substrate
Inhibitor
+Coenzyme
Product

12. The biological oxidation and deactivation (detoxication) of xenobiotics are realized by hemcontaining enzymes. Which metal is a required component of these enzymes?
Mg
Zn
Co
+Fe
Mn

13. Patients with the thyrotoxicosis have hyperthermia, bulimia, lose of weight due to the violation of:
Reactions of ?-oxidation of fatty acids
The breakdown of ATP
Reactions of synthesis of fat

Reactions of citric acid cycle
+The coupling of oxidation and phosphorylation

14. Cyanides are extremely powerful cell's poison which can cause death of the human body. Which enzyme blocking in tissue respiration is basic in this action?
Catalase
Superoxide dismutase
+Cytochrome oxidase
Hemoglobin reductase
Glucose-6-phosphatdehydrogenase

15. Weight loss and increased body temperature are observed during increasing function of the thyroid gland. What biochemical processes are activating during this?
Gluconeogenesis
Anabolism
+Catabolism
Lipogenesis
Steroidogenesis

16. Disposal (Deactivation) of pathogenic bacteria and splitting (breakdown) alien bodies in leukocytes are carried out with the help of which type of oxidation reaction:
+Peroxidation reaction
Oxydase reaction
Oxygenase reaction
Peroxidase reaction
Anaerobic reaction

17. A worker of the chemical company was brought to the hospital with signs of poisoning. Arsenate of the high concentration was found in the hair of the woman, which blocks the lipoic acid. Specify a dysfunction of what process is the main reason of poisoning:
Deactivation of super oxide ions
Microsomal oxidation
reduction of methemoglobin
reduction of organic peroxides
+Oxidative decarboxylation of pyruvate

18. How does thyroxin influence on the processes of tissue respiration and oxidative phosphorylation of a patient who is ill with thyrotoxicosis?
+Uncouples the process of tissue respiration and oxidative phosphorylation
Blocks electron transport on the cytochrome's chain
Activates hydrolysis of ATP
Decrease activity of FAD-dehydrogenase
Decrease activity of NAD-dehydrogenase

19. How many molecules of ATP can be synthesized after full oxidation of acetyl-CoA in Citric acid cycle?
1
+12
5
8
3

20. The central intermediate substance of all metabolisms (proteins, lipids, carbohydrates) is:
Lactate
Succinil-CoA
Oxaloacetic acid
+Acetyl-CoA
Citrate

21. The process of ATP synthesis, which goes according to the reactions of oxidation with the participation of mitochondrial respiratory enzymes, is called:
+Oxidative phosphorylation
Substrate phosphorylation
Free oxidation
Photosynthetic phosphorylation
Peroxidation

22. At necropsy of a 40 year-old woman the legal expert found that death occurred as a result of poisoning with cyanides. Blocking of which process is the most probable with the cyanides in this state?
+Cytochrome oxidase
Glycogen phosphorylase
Pyruvate carboxylase
Succinate dehydrogenase
Glucose-6- phosphate dehydrogenase

23. During the pathological processes, accompanied by hypoxia, take place the incomplete reduction of oxygen molecules in respiratory chain and the accumulation of hydrogen peroxide. Specify the enzyme, which catalyze its destruction.
Aconitase
Cytochrome oxidase
Peroxidase
Ketoglutarate dehydrogenase
+Catalase

24. Macroergic compounds are necessary for the normal metabolism in the cells. Which of these components belongs to the macroergic compounds?
Creatinine
Creatine
+Phosphocreatine
Glucose-6-phosphate
Adenosine monophosphate

25. Potassium cyanide is a poison death of the body comes instantly. Name of the enzyme in mitochondria on which cyanic potassium can influence (affect) is:
Cytochrome b5
Flavinic enzymes
+Cytochrome oxidase [aa3]
NAD - dependent dehydrogenase
Cytochrome P-450

26. For a woman the symptoms of diabetes are absent 45 years, but on an empty stomach enhanceable maintenance of glucose is determined in blood (7,5 mmol/l). What next test must be conducted?

+Determination of tolerance is to glucose
Determination of acetone bodies is in urine
Determination of remaining nitrogen is in blood
Determination of glucose of blood on an empty stomach
Determination of glycoziled haemoglobin

27. In blood of patient content of glucose| on an empty stomach was 5,65 mmol/l, in 1 hour after the sugar loading was 8,55 mmol/l, and in 2 hours – 4,95 mmol/l. Such indexes are characteristic for:
+Healthy man
Patient with the hidden saccharine diabetes
Patient with інсулінозалежним saccharine diabetes
Patient from інсулінонезалежним by saccharine diabetes
Patient with a thyrotoxicosis

28. Erythrocyte requires energy in ATP. What process does provide necessary quantity of ATP?
+PPP
Aerobic of oxidization of glucose
Anaerobic glicolisis
Beta-oxidization of fatty acids
TCA

29. At insufficiency of Thiamin - there is illness of Beri-Beri is occur. Some carbohydrate exchange process is violated. What compound there does accumulate in blood?
Succinate
Lactate
+Pyruvate
Citrate
Malate

Hormones

/

1. Arachidonic acid metabolites (derivates) are well known inflammation mediators. What enzyme will release arachidonic acid from cell membrane lipids?
+Phospholipase
Cyclooxygenase
Lipoxygenase
Adenylate cyclase
Myeloperoxidase

2. There's only one hormone among the neurohormones which is referred to the derivatives of amino acids according classification. Point out it:
+Melatonin
Thyroliberin
Vasopressin
Oxytocin
Somatotropin

3. The formation of a secondary mediator is obligatory in membrane-intracellular mechanism of hormone action. Point out the substance that is unable to be a secondary mediator:
+Glycerol
Diacylglycerol
Inositol-3,4,5-triphosphate
CAMP
Ca2+

4. Hypocalciemia can be caused by the violation of one hormone secretion. Point out this hormone:
+Parathyroid hormone
STH
ACTH
Thyroxin
Aldosterone

5. A 44-year-old woman complains of common weakness, heart pain, considerable increase of body weigt. Objectively: moon-like face, hirsutism, AP- 165/100 mm Hg, height - 164 cm, weight - 103 kg; fat is mostly accumulated in the region of neck, upper shoulder girdle, stomach. What is the main pathogenetic mechanism of obesity?
Decreased production of glucagon
+Increased production of glucocorticoids
Increased production of mineralocorticoids
Increased production of insulin
Decreased production of thyroidal hormones

6. A 40-year-old patient complains of intensive heartbeats, sweating, nausea, visual impairment, arm tremor, hypertension. From his anamnesis: 2 years ago he was diagnosed with pheochromocytoma. Hyperproduction of what hormones causes the given pathology?
Aldosterone
+Catecholamines
Glucocorticoids
Thyroidal hormones
ACTH

7. Kidneys of a man under examination show increased resorbtion of calcium ions and decreased resorbtion of phosphate ions. What hormone causes this phenomenon?
Thyrocalcitonin
Vasopressin
+Hormonal form D3

Aldosterone
Parathormone
8. Secretion of which gastrointestinal hormones is primarily decreased in patient with removed duodenum?
+Cholecystokinin and secretin
Gastrin
Histamine
Gastrin and histamine
Neurotensin
9. A 19-year-old female suffers from tachycardia in rest condition, weight loss, excessive sweating, exophtalmos and irritability. What hormone would you expect to find elevated in her serum?
ACTH
Mineralocorticoids
Cortisol
Insulin
+Thyroxine
10. A 2-year-old child experienced convulsions because of lowering calcium ions concentration in the blood plasma. What organ function is decreased?
+Parathyroid glands
Hypophysis
Adrenal cortex
Pineal gland
Thymus
11. Increased production of thyroidal hormones T3 and T4, weight loss, tachycardia, psychic excitement and so on present on thyrotoxicosis. How do thyroidal hormones effect energy metabolism in the mitochondrion of cells?
+Uncouple oxidation and oxidative phosphorylation
Activates phosphorylation of substance
Stops phosphorylation of substance
Stops respiratory chain
Activates oxidative phosphorylation
12. Arterial hypertention is caused by the stenosis of the renal arteries in the patient. Activation of what system is the main link in the pathogenesys of this form of hypertension?
+Renin-angiotensin
Sympathoadrenal
Parasympathetic
Kallikrein-kinin
Hypothalamic-pituitary
13. Arterial hypertension, hyperglycemia, glucosuria were observed clinically for a long time in the patient with upper type of obesity. Death was due to the cerebral haemorrhage. Basophilic hypophysis adenomas, hyperplasia of adrenal gland cortex were revealed on pathomorphological examination. What is the likely diagnosis?
+Cushing disease
Diabetes mellitus
Acromegaly
+Hypophysis nanism
Adiposogenitalis dystrophy
14. Patient was on glucocorticoids for a long time, discontinuation of usage caused exacerbation of the illness, decreased BP, weakness. How can you explain it?
+Insufficiency of adrenal glands
Adaptation to the medicine
Sensitization

Hyperproduction of ACTH
Cumulation
15. The person has decreased diuresis, hypernatremia, hypokalemia. Hypersecretion of what hormone can cause such changes?
+Aldosterone
Vasopressin
Auricular sodiumuretic factor
Adrenalin
Parathormone
16. Aspirin has antiinflammatory effect due to inhibition of the cyclooxygenase activity. Level of what biological active acids will decrease?
+Prostaglandins
Leucotriens
Catecholamines
Biogenic amines
Iodinethyronyns
17. Periodic renal colic attacks are observed in the woman with primary hyperparathyroidism. Ultrasonic examination revealed small stones in the kidneys. What is the cause of the formation of these stones?
+Hypercalcemia
Hyperphosphatemia
Hypercholesterinemia
Hyperuricemia
Hyperkalemia
18. A 50-year-old patient complains of thirst, drinking of a lot of water, marked polyuria. Blood glucose is 4,8mmol/L, urine glucose and acetone bodies are absent, urine is colorless, specific gravity is 1,002-1,004. What is the cause of polyuria?
+Vasopressin insufficiency
Hypothyroidism
Insulin insufficiency
Aldosteronism
Thyrotoxicosis
19. The patient with complaints of permanent thirst applied to the doctor. Hyperglycemia, polyuria and increased concentration of 17-ketosteroids in the urine were revealed. What disease is the most probable?
+Steroid diabetes
Insulin-dependent diabetes mellitus
Myxoedema
Type I glycogenosis
Addison's disease
20. On some diseases it is observed aldosteronism with hypertension and edema due to sodium retention in the organism. What organ of the internal secretion is affected on aldosteronism?
Adrenal glands
Testicle
Ovaries
Pancreas
+Hypophysis
21. A patient with infectious mononucleosis had been taking glucocorticoids for two weeks. He was brought into remission, but he fell ill with acute attack of chronic tonsillitis. What action of glucocorticoids caused this complication?
Antiallergic
+Immunosuppressive

Antitoxic
Antishock
Anti-inflammatory
22. Some diseases reveal symptoms of aldosteronism with hypertension and edema due to sodium retention in the organism. What organ of the internal secretion is affected on aldosteronism?
Hypophysis
Testicle
Ovaries
Pancreas
+Adrenal glands
23. A 46 year-old patient has complained of headache, fatigue, thirst, pains in the spine and joints for the last 2 years. Clinically observed disproportional enlargement of hands, feet, nose, superciliary arches. He notes that he needed to buy bigger shoes three times. What is the main reason of such disproportional enlargement of different parts of the body?
Increased sensitivity of the tissues to growth hormone
Joints dystrophy development
Joints chronic inflammation development
Increased sensitivity of the tissues to insulin
+Cartilaginous tissue proliferation under growth hormone influence
24. A man after 1,5 liter blood loss has suddenly reduced diuresis. The increased secretion of what hormone caused such diuresis alteration?
+Vasopressin
Corticotropin
Cortisol
Parathormone
Natriuretic
There is only one hormone among the neurohormones which refers to the derivatives of amino acids according to classification. Point it out:
25. A 52 year-old patient with bronchial asthma was treated with glucocorticoids. Fever reaction appeared as a result of abscess formation after injection. The patient had subfebrile temperature, which didn't correspond to latitude and severity of inflammatory process. Why it was such low fever reaction?
+Inhibited endogen pyrogens production
Thermoregulation center inhibition
Violation of heat loss through lungs
Inflammatory barrier formation in injection place
Violation of heat-producing mechanisms
26. The formation of a secondary mediator is obligatory in membrane-intracellular mechanism of hormone action. Point out the substance that is unable to be a secondary messenger:
Diacylglycerol
+CAMP
Inositol-3,4,5-triphosphate
Ca2+
Glycerol
27. Under some diseases it is observed aldosteronism accompanied by hypertension and edema due to sodium retention in the organism. What organ of the internal secretion is affected under aldosteronism?
Ovaries
*Adrenal glands
Testicle
Pancreas
Hypophysis

28. Intake of oral contraceptives containing sex hormones inhibits secretion of the hypophysal hormones. Secretion of which of the indicated hormones is inhibited while taking oral contraceptives with sex hormones?
Thyrotropic
*Follicle-stimulating
Somatotropic
Oxytocin
Vasopressin
29. Thyrotoxicosis leads to increased production of thyroid hormones T3 and T4, weight loss, tachycardia, psychical excitement and so on. How do thyroid hormones affect energy metabolism in the mitochondria of cells?
Activate oxidative phosphorylation
+Disconnect oxidation and oxidative phosphorylation
Stop substrate phosphorylation
Activate substrate phosphorylation
Stop respiratory chain
30. Testosterone and its analogs increase the mass of skeletal muscles that allows using them for treatment of dystrophy. Due to interaction of the hormone with what cell substrate is this action caused?
Membrane receptors
Ribosomes
*Nuclear receptors
Proteins-activators of transcription
Chromatin
31. The regulation of the water balance in organism is a function of:
*Hypothalamus
Thalamus
Cerebellum
Medulla oblongata
Limbic system
32. Leukotrienes are a group of active substances derived from arachidonic acid by way of the lipoxygenase pathway in inflammation. Which is an INCORRECT in the following classic action of leukotriens?
Vasodilatation
Mediation of increased capillary permeability
*Vasoconstriction
Chemotaxis
Bronchoconstriction
33. In addition to growth hormone, acromegaly is associated with an increased serum concentration of :
*Insulin-like growth factor – 1 (IGF-1), somatomedin C
ACTH
FSH
Prolactin
TSH
34. Hypothyroidism is caused by all of the following EXCEPT:
Thyroid adenoma
Autoimmune causes
Surgery, radiation therapy, or both
Hereditary or developmental abnormalities
*Iodine deficiency
35. Hypersecretion of ADH is associated with all of the following EXCEPT:

Diabetes insipidus
Water retention
*Dilution hyponatremia
Inability to dilute urine
An increased blood output
36. All of the following characteristics are associated with somatotropic adenoma EXCEPT:
*Inappropriate water retention
Gigantism
Hyperglycemia
Hypertension
Acromegaly
37. If a 19-year-old female was suffering from tachycardia in rest condition, weight loss excessive sweating, exophtalmos and irritability, which hormone would you expect to found elevated in her serum?
*Thyroxine
Cortisol
Mineralocorticoids
ACTH
Insulin
38. Primary adrenocortical deficiency (Addison disease) is most frequently caused by:
*Autoimmune mechanism
Histoplasmosis
Tuberculosis
Amyloidosis
Metastatic tumor
39. A benign tumor of adrenal glands causes hypersecretion of aldosterone is:
*Conn's disease
Addison' disease
Cushing disease
Tetany
Hypertension
40. Which of the following is a characteristic of steroid hormones?
Activation of adenylate cyclase
Activation of protein kinases
Plasma membrane receptors
*Stimulation of cellular protein synthesis
Termination of effects by phosphodiesterase
41. Patient with diabetes mellitus type I has maden himself a dose of prolonged insulin intravenous infusion in order to decrease high glucose blood level. Hypoglycemic coma has developed. Choose the mechanism of hypoglycemia development?
*tissues glucose increased consumption
increased glucose excretion from organism by urine
glucagon secretion inhibition
glucose interaction with insulin
inhibition of gluconeogenesis and ketogenesis in liver
42. At the patient 27 years old after the carried sepsis the bronze color of skin is appeared, which is typical for Addison's disease. Which hormone secretion is on the mechanism of hiperpigmentation?
*Melanocute stimulating hormone
Somatotropic
Gonadotropic
B-lipotropic
Thyrotropic

43. For a woman 46 years old after an operation on a thyroid gland a fibrillar twitchings of muscles of hands, feet and face of person appeared soon. These violations can be removed by introduction of
The triiodothyronine
*Parathyroid hormone
Thyrotropin
Thyroxin
Thyrotropin releasing hormone
44. The patient with diabetes mellitus was delivered to a hospital in the state of unconsciousness. Kussmaul's breathing, arterial pressure 80/50 mm HG, with the smell of acetone from a mouth. The accumulation of what matters in the organism can explain the origin of these disorders?
Lactic acid
Modified lipoproteines
*ketone bodies
Carbonic acid
Complex carbohydrates
45. For a patient the adenoma found out which takes a place from the cells of glomerular zone of adrenal cortex. A primary hyperaldosteronism or Conn's desease developed as a result of it. On the exchange of which ion does this hormone influence an?
Iron
Chlorine
Magnesium
Calcium
*Sodium
46. Chronic insufficiency of adrenal cortex takes place for a patient (Addison's disease or bronze disease). Insufficiency of what hormone does take a place on this pathological process?
*Àldosterone
Insulin
Adrenalin (Epinephrine)
Thyroxin
Vasopressin
47. In 1 – 2 days after a deletion of parathyroid gland on the dog is observed: a languor, thirst, sharp increase of nerve-muscular excitability with development of tetany. What violation of electrolytes exchange does take a place here?
Hypercalcemia
*Hypocalcemia
Hypomagniemia
Hypermagniemia
Hyposodiumemia
48. A sick person 44 years old complain of a common weakness, increase of body mass, growth of hair on face, stop of menstruation, arterial pressure of 165/100 mm HG. What will help to differentiate Cushing's disease from the Cushing's syndrome?
A contents of 17 – îxiketosteroids in urine
A level of cortisol in plasma
*A level of corticotropin in blood plasma
Roentgenography (radiography) of the skull
An amount of eosinophil in blood
49. An obesity, hirsutism, "moon" face, purple scars on thigh skin were found in patient. Arterial pressure 180/110 mm HG, blood glucose -17,2| mmol/l . At what changes in adrenal gland hormones production such picture is posible?
Hypoproduction of mineralocorticoids
Hypoproduction of glucocorticoids
Hyperproduction of mineralocorticoids

*Hyperproduction of glucocorticoids
Hypoproduction of epinephrine
50. A sick person K., 35 years old complain on constant thirst, decreased appetite. The amount of drinked liquid is about 9 litres. A daily diuresis is increased; urine is bleached, relative density - 1005. The main posible reason of this pathology development in patient is damaging:
Basal membrane of glomerular capillary
Epithelium of kidney canaliculus
*Anterior pituitary
Epiphysis
Hypothalamus nucleuses
51. A sick person, 46 years old, the nonproportional increasing in size of hands, feets, nose, ears, superciliary arcs and malar bones. In blood - hyperglycemia, desorder in glucose tolerance test. The main posible reason of this pathology development is|:
*Hypersecretion of somatotropic hormone
Hypersecretion of all hormones of adenohypophis
Hyposecretion of insulin
Hyposecretion of vasopressin
Hypersecretionof glucocorticoids
For a 6 years old child the hyperergic form of inflammation of top respiratory tracts developed. The threat of serious violation of breathing appeared, and that is why there was a necessity to apply antiinflammation hormones. Among hormones a antiinflammation effect shows:
52. A 27 years old man appealed to the physician. At a examination was found out the increase of hand, feet and lower jaw. In addition there was deformation of joints (kiphosis), hormonal violations (impotence, atrophy of testicles). The functions of what gland is violate?
Corpus Pineale
Adrenal cortex
*Anterior hypophysis
Thyroid gland
Parathyroid glands
53. As a result of injuring for a patient the parathyroid gland was deleted, that was accompanied: by a weakness, thirst, sharp increase of nervo-muscular excitability. With what matter exchange violation is it related:
Molybdenum
Manganese
Chlorine
*Calcium
Zinc
54. A patient stings on enhanceable irritability, periodic subfebrile temperature. Frequency of pulse - 120 per minute. The amount of T3 and T4 hormones in blood is scaled-up. What endocrine pathology most logically suspected?
*Hypothyroidism
Adrenal insufficiency
Hupoparathyroidism
Hyperparathyroidism
Hyperthyroidism
55. With the purpose to suppress theautoimmune reactions after transplantation of organs obligatory is a course of hormonotherapy. What hormones have to be applied from this purpose?
*Glucocorticoids
Mineralocorticoids
Sex hormones
Adrenalin (Epinephrine)
Somatotropic hormone

56. For a patient with pneumonia there was a fever. What directly does cause the change of adjusting point of temperature in the neurons of hypothalamus of this patient?
Endotoksin
*Prostaglandins PGÅ1, PGÅ2
Exotoxin
Interleykin-2
Thrombocyte growth factor
57. In laboratory animal by the intravenous injection of alloxone the experimental diabetes mellitus was evoked. What is the mechanism of this substance action?
Formation of antibodies to insulin
Binding of Zinc
*The ?-cells of pancreatic islands damaging
Activation of insulinase
Activation of contrinsulin hormones formation
58. A 53 years old woman has a 163 sm height, a bodyweight is 92 kg, deposition of fat is even, a person face is puffy, not mobile and apathetical. There is a fossula at pressure of skin of leg. What gland parafunction is the cause of illness?
Gonads
Hypophysis
Adrenal gland
*Thyroid
Parathyroid
59. A patient on the early stage of diabetes mellitus has polyuria. What is the cause of it?
*Hyperglycemia
Ketonemia
Hypocholesterolemia
Hypercholesterolemia
Hyperkalemia
60. A patient 48 years old has a hypertension, head pain, muscular weakness, convulsions. In blood the concentration of K+ is decreased and the concentration of Na+ is increased, which is the result of hypersecretion of:
Adrenalin
*Aldosterone
Parathyroid hormone
Cortisol
Dihydrocholesterol
61. At the simulation of inflammation of lower extremity in animal the temperature of body rise, the content of antibodies and leucocytes was increased in blood. What matters did stimulate development of these common reactions of organism at inflammation?
Leukotrienes
Glyucocorticoids
Mineralocorticoids
*Interleukins
Somatomedins
62. For a woman with primary hyperparathyreoidism periodically the attacks of nephrocolic repeat. An ultrasound inspection rotined the presence of small stones in kidney. What is the most probable reason of its formation?
Hyperkalemia
Hyperphosphatemia
Hypercholesterolemia
Hyperurikemia
*Hypercalcemia

63. A 38 years old woman grumbles about a general weakness, pain in the heart area, increase of appetite, absence of menstruations. Objectively: height is about 166 sm, bodyweight 108 kg, a “moon like” face, deposition of subcutaneus adipose tissue mainly in the high limb area, trunk; on the skin of thighs, stomach bloody- red stripes, pulse of 62 per minute, AP-160/105 mm HG. All this states are most characteristic for:
Myxoedema
Alimentary obesity
*Cushing’s disease
Insulinoma
Babinskiy-Frelikh syndrome
64. A 26 years old woman complaint about a present general weakness, loss of body mass on 18 kg, absence of menstruations, is ill already 1 year, after confinement; she had a difficult confinement, accompanied by bleeding. Objectively: 168 sm height, bodyweight 53 kg, hypoplasia of mammary glands. The syndrome of Shikhena is diagnosed. What is the basic mechanism of loss of weight for a woman?
Hypothyroidism
Decline of gonads function
Decline of adrenal cortex function
*Decreased production of adenohypophysis hormones
hypoparathyroidism
65. In patient under investigation revealed hirsutism, "moon like”face, on the skin of thighs, stomach bloody- red stripes. Arterial blood preasure is 190/100 mm HG, glucosemia - 17,6 mmol/l. In what of indicated pathology types this picture appears?
*Hyperfunction of adrenal cortex
Hyperthyroidism
Hypothyroidism
Hypofunction of gonads
Hyperfunction of insulin
66. In patient determined presence of hyperglicemia,polyuria, hyperstenuria and glucoseuria. For what form of metabolism pathology this combination typical?
Kidney diabetes
*Diabetes mellitus
Diabetes insipidus
Glycogenosis
Diencefalon obesity
67. Patient 18 years old, after the carried rubeola (german measles) began to lose of weight, constantly felt dryness in a mouth, thirst, appetite is increased, frequent urination began. Objectively: dayly amount of urine - 6 litres, glucoseemia - 17 mmol/l, glucose and acetone are found in urine. What disease did arise up for a patient?
Secondary diabetes mellitus
Symptomatic diabetes mellitus
*²nsulin depended diabetes mellitus
²nsulin independed diabetes mellitus
Steroid diabetes
68. The woman 23 years old entered to hospital with a diagnosis acute pneumonia. She fall ill sharply, 2 days back, when a chill with a fever to 39oC, weakness, dry cough appeared. What from the enumerated neurohumors of inflammation has endogenous pyrogen characteristics?
Serotonin
Thromboxane A2
Histamin
*Interleukin 1
Bradykinin

69. Woman 55 years old, which lives in mountain locality, an endemic goitre is diagnosed. Objectively: a bit enhanceable wellnourishement, slow down, apathetical, increase of thyroid gland size. The deficiency of what element can cause it?
Sodium
Fluorine
Manganese
Molybdenum
*Iodine
70. An endemic goiter is diagnosed in boy. What is the basic mechanism of hypothyroidism development at boy?
*Decreased production of thyroxine and triodothyronine
Decline production of thyrotropin
Decline sensitivity of tissues receptors to thyroxine and triiodothyronine
Increased metabolism of thyroxine and triiodothyronine
Violation of thyroxine and triiodothyronine transport
71. A man 46 years old, who suffered on diffuse toxic goitre, an operation of thyroid gland resection was conducted. After an operation an absence of appetite, dyspepsia, increased neuro-muscular excitability are marked. Mass of body was not increased. The temperature of body is normal.What from transferred below the state of man is conditioned?
Decline production of thyroxine
*Decline production of parathormone
Increased production of calcitonine
Increased producyion of thyroliberin
Violation of thyroxine production
72. Man of 42 years old, which suffers on an top type obesity (high limb area, a "moon like”face), AP is 160/95mm HG, glucose of blood - 8.0 mmol/l. The level of cortisol contents in blood is enhanced, but adrenocorticotropin level is reduced. What most reliable cause of hypercorticoidism development?
Diminishing of statins production
Hormonprodusing tumour of anterior pituitary
*Hormonprodusing tumour of adrenal cortex
Increase of corticoliberin production
Diminishing of sex hormones production
73. For a patient with diabetes mellitus the processes of regeneration are reduced, wounds do not heal over long. With what changes in the metabolism is this related?
Diminishing of glucose entering to the cells
By the accumulation of ketone bodies
Acidosis
*Depression of proteins synthesis
Violation of lipids metabolism
74. With the purpose of prevention of seizure of transplanted organ after transplantation obligatory course of endocrinotherapy is conducted with the purpose of immunosuppression. What hormones can be used?
Thyroid
Mineralocorticoids
Sex hormones
Catecholamines
*Glucocorticoids
75. By the method of nondirect calorimetry it was identified, that basic metabolism of the person is on 40 % below to necessary. Violation of what gland activity can be assumed?
*Thyroid glands
Thymus

Pancreas
Epiphysis
Parathyroid gland
76. At 50 years old person after the carried infectious disease of cerebrum a diuresis was signficantly increased to 12 l/day. At a blood test a glucose level was 4,1 mmol/l. What hormone deficiency is the cause of it?
Glucogon
*Vasopressin
Insulin
Cortisol
Aldosteron
77. Clinicaly was obbserved, what under pregnancy the gravity of rheumatoid arthritis symptoms sharply decreased||. Acceleration of what hormones secretion with antiinflamatory action can be present on this case| ?
Thyroid gland hormones
Estrogens
*Glucocorticoids
Catecholamines
Gonadotropins
78. A woman 29 years od grumbles about a general weakness, loss of body mass on 22 kg, amenorrhea. It is ill after births. Objectively: growth - 162 sm, body mass - 46 kg, hypoplasia of mammary glands. A hypophisial cachexy is diagnosed. What hormone production diminishing was most substantial in get thin?
Melanotropin
Adrenocorticotropin
Thyreotropin
*Somatotropin
Prolaktotropin
79. In the emergency department a unconscious patient is delivered with the smell of acetone from an oral cavity. The methods of express-analysis expose glucose in blood - 17,3 mmol/l. The increase of what matters maintenance did result in the loss of consciousness?
Glucose
Lactic acid
*ketone bodies
Fat acids
Urea
80. For a patient it is set stable fervescence, excess heart beating, emotional lability, tremor. With what hormon production changing is this state connected?
Aldosterone
Vasopressin
Testosteron
*Thyroxine
Insulin
81. One of dangerous moments in pathogenesis of myocardium necrosis there is subsequent growth of necrosis areas, dystrophy and ischemia. A important rolehere is in belongs to the increase of oxygen consumption by myocardium. What matters are assist in this process?
*Catecholamines
Acetylcholin
Adenozin
Cholesterol
Chlorine ions
82. The woman 44 years old grumbles about a general weakness, pain in the area of heart,

considerable increase of body mass. Objectively: a person ì³ñÿöåïîä³áíå|, ã³ðñóòèçì|, AP is 165/100 mm HG, growth is 164 mm, weight is 103 kg, mainly accumulation of fat on a neck, high limb area, stomach. What is the basic pathogenic mechanism of obesity for a woman?
Increase of insulin products
Decline of thuroid gland hormones production
*Increased glucocorticoids production
Decline of glucogon production
Increase of mineralocorticoids production
83. A patient with the lungs inflammation has a high temperature. What bioactive matter does play a leading role in the origin of this display?
Serotonin
Gistamin
Bradykinin
*Interleukin-I
Leukotrienes
84. After a stroke (cerebral thrombosis) with the defeat of hypothalamus nucleuses a patient had diabetes insipidus. What did become reason of increased urine formation for this patient?
Acceleration of glomerular filtration
Diminishing of sodium reabsorption
Decline of arterial pressure
Hyperglycaemia
*Diminishing of water reabsorption
85. For a patient with the inflammatory process of skin and hypoderm with chronic course found out predominance of proliferation processes. The deficiency of what hormone can result it?
*Cortison
Aldosterone
Insulin
Somatotropic hormone
Thyroxin
86. A patient 50 years old grumbles about thirst, drinks much water, polyuria is expressed. Blood glucose - 4,8 mmol/l, in urine glucose and acetone ar absent, urine is colourless, relative gravity 1,002-1,004. What reason of polyuria?
Hypopthuroidism
*Deficiency ADH
Insulin insufficiency
Aldosteronizm
Thyrotoxicosis
87. At patient 39 years old ovary concerning malignant tumours were removed. In 2 years later a hirsutism appeared, voice is coarsen, a physigue build get masculine (male) signs. What from hormonal changes is underlay on given pathology?
Strengthening of prolactin production
Absence of progesteron
*Decrease of estrogens
Decline of androgens production
Hypofunction of adrenal cortex
88. For a patient with cirrhosis of liver a hypertension, muscular weakness, periodic cramps appeared. In blood – Nà+ content is increased and K+ content is decreased. What from diminished types of endocrine violations underlay this symptomocomplex?
Hyperpituitarism
Hypopituitarism
Primary aldosteronism
*Secondary aldosteronism

Hypoaldosteronism
89. For mise with the inherited obesity a hyperglycemia and lowering of insulin receptors amount in lipocytes is established. What pathogenic mechanism is primary in strengthening of lipogenesis for these animals?
*Hyperinsulinemia
Hypoinsulinism
Hypertrophy of lipocytes
A decline tolerance to glucose
Increase deposition of fats
90. Patient a 16 years old, who suffer on Cushing's disease, was consulted about excess body weigh. At questioning elucidated, that energetic value of consumed food is 1700-1900 kkal/day. What is the primary reason of obesity in this case?
Deficiency of insulin
Excess glucocorticoids production
*Excess of insulin
Deficiency of glucocorticoids
Hypodinamia
91. A hypertension for a patient is dependent on stenosis of kidney arteries. Activation of what system is a main link in pathogenesis of this form of hypertension?
Parasympathic system
Sympato-adrenal system
*Renin-angiotensin system
Hypothalamo-hypophyseal
Calicrein-kinin system
92. A patient with chronic heart insufficiency have edemata of lower extremities. Extra activation of what system is the main link of this pathology?
Parasympathic
Hypothalamo-hypophyseal
Sympatho-adrenalal
*Renin-angiotensin-aldosterone system
Calicrein-kinin system
93. For a patient what receive the prolonged course of glucocorticoids treatment, found out ulcers in a stomach. What mechanism is main in their development?
Decline of parasympathic nervous system tone
A decline of Histamin in the mucus shell of stomach
Increase of sympathic nervous system tone
Increase of prostaglandin E1, E2 production
*Increase of secretion and acidity of gastric juice
94. For a patient with a hemorrhage in the postirior hypophysis there was polyuria and diminishing of vasopressin level in blood. What is the main mechanism of polyuria development in this case?
*Diminish of water reabsorption in kidney canaliculus
An increase of water filtration in glomerulis
An increase of sodium reabsorption in canaliculus
Diminishing of sodium reabsorption in canaliculus
Increase of potassium excretion
95. The prolonged use of mineralocorticoids resulted in appearance of muscular weakness in the patient. What is underlay on pathogenesis of this phenomenon?
*Hyperkalemia
Hypokalemia
Hypernatremia
Hyponatremia
Hypervolemia

96. A patient appealed to the physician with complaints on pain in a head, changes in extremities, increase of hands and feet size. Objective: massive superciliary arcs, lips. At surplus of what hormone such symptoms appear.
Thyroid hormone
Adrenocorticotropic hormone
*Somatotropic hormone
Glucocorticoids
Adrenalin
97. Patient K., 45 years old enter to endocrinologycal department with complications on pain in a head, thirst, nikturia, periodical attack of cramps, increase of arterial pressure. About 6 monthes ago the diagnosis of primary aldosteronism was delivered (Conn's disease). Hyperfunction of what hormones cause this pathology?
Adrenocorticotropic hormone
Catecholamines
Glucocorticoids
*Aldosteron
Thuroid gland hormones
98. Patient Í., 25 years old, after carried infection a diabetes insipidus develoed. Deficiency of what hormone lead to this patology formation?
Vasopressin
Aldosteron
Cortisol
Renin
*Insulin
99. Patient D., 50 has a diagnosis "Myxedema". Disorder of what hormones formation can lead to this pathology development?
Cortisol and aldosterone
*Tyroxine and triiodothyronin
ACTH and STH
Oxitocin and vasopressin
Insulin and glucogon
100. For a girl an adrenogenital syndrome is diagnosed (pseudohermafroditism). Surplus secretion of what hormone of adrenal cortex did stipulate this pathology?
Adrenalin
Estrogen
Aldosterone
Cortisol
*Androgens
101. For a patient with the adenoma of zona glomerulosa of adrenal cortex (Conn's disease) there are a arterial hypertention, attacks of cramps, polyuria. That is a main link in pathogenesis of these disease.
*Hyperaldosteronism
Hypoaldosteronism
Hypersecretion of catecholamins
Hypersecretion of glucocorticoids
Hyposecretion of glucocorticoids
102. For a dog a arterial hypertention was modelled by narrowing of kidney arteries. Activity of the renin-angiotensin-aldosteron system was thus increased. What component of this system does cause the strongest pressor effect?
Renin
Angiotensin ^{22}
*Angiotensin I

Angiotensin [222]
Aldosterone
103. A man can remain without a meal during 40-60 days. What from the indicated substances can be regenerate on glucose for providing of energy necessities of cerebrum in this term of starvation?
Acetone
Acetoacetate
*Amino acid
Fatty acids
gama-hydroxybutirate
104. In surgeon Ñ. after conducted long operation an arterial blood pressure is increased (140/110 mm.HG.). What changes of humoral regulation can be as reason of arterial blood pressure increasing in this case?
Activation of kalikrein-kinin system
Activation and excretion of aldosteron
Activationof renin-angiotensin system
Activation of sympatho-adrenal system
*Inhibition of sympatho-adrenal system
105. For a patient with a chronic diffuse glomerulonephritis found out anaemia. What is its pathogenesis related to?
By the presence of antibodies to the cells of peripheral blood
Suppression of red bone marrow function
Deficit of intrinsic factor of Castle
Increased hemolysis of red blood cells
*Decreased eritropoetin production
106. For a patient with a stable arterial hypertention during the angiography was found out the atherosclerotic defeat of both kidney arteries. What mechanism of hypertention development is primary?
*Increase in renin production
Increase of catecholamins
Increase of aldosteron excretion
Increase of cardiac ejection
Increase of vasopressin secretion
107. Patient 25 years old, grumbles about dryness in a mouth, thirst, decline of body mass, without regard to an enhanceable appetite. At an inspection: growth - 170 sm., weight is 50 kg, glucose level in blood - 10,5 mmol/l, glucosuria. Which from the states noted below are these symptoms most characteristic for?
Kidney diabetes
*Diabetes mellitus
Alimentary glucosuria
Steroid diabetes
Diabetes insipidus
108. For a 55 years old patient a basic diagnosis is acute glomerulonephritis. Indicate the basic mechanism of anaemia development in this case.
Diminishing of kidney prostaglandines synthesis
Diminishing of glomerular filtration
*Diminishing of erythropoetin production
Kidney nitrogenemia
Diminishing of reabsorption in canaliculus
109. At a clinical inspection of women it is set: increase of sweat, tachycardia, lost of body weight, tremor. What endocrine pathology can entail it?
Hypoaldosteronism
*Hypothyroidism

Hypergonadism
Hypogonadism
Hyperthyroidism
110. The prolonged negative emotional stress which is accompanied with catecholamins excretion can cause the noticeable lowering of body mass. What mechanism of emaciation in this case?
Increased oxidative phosphorylation
Decline digestion
*Enhancing of lipolysis
Violation of lipids synthesis
Enhancing of proteins disintegration
111. A patient, suffering the malignant tumour of oesophagus, did not take a meal within a week. How did hormonal status change for a patient?
*The cortisol concentration rose in blood
The insulin concentration rose in blood
The glucogon concentration rose in blood
The adrenalin concentration rose in blood
Decreased thyroxin concentration in blood
112. For a 4-month old child the phenomenon of rachitis is brightly expressed. Disorders of digestion not noted. A child richly is in the sunshine. During 2 months a child receive the Vitamin D3, however much the displays of rachitis diminished. How is it possible to explain development of rachitis for this child?
Violation of insulin synthesis
Violation of calcitonin synthesis
Violation of parathyroid hormone synthesis
Violation of thyroxine synthesis
*Violation of calcitriol synthesis
113. For patients a thyrotoxicosis is hypertermia, increased appetite, lost of body weight. With what violation is it related to:
Degradation of ATP
*Coupling of oxidation and phosphorylation
Reactions of fats synthesis
Reactions of CAC
Reactions of fatty acids ?-oxidation
114. Aspirin has antiinflamatory and analgetic action, as inhibit the biosynthesis of prostaglandins. What enzyme is inhibited by aspirin?
Decarboxylase
Dehydrogenase
Hydroxylase
*Cyclooxygenase
Desaminasa
115. The feature of thyrosin methabolism is in inclusion of him in the process of hormones synthesis. Indicate one of them, which synthesised in the adrenal cortex.
*Adrenalin
Glucagon
Thyroxin
Histamine
Serotonin
116. Aminoacid Thyrosin is used as substrate in the process of thyroxin synthesis. Indicate a chemical element which takes part in this process.
Iron
Calcium.
*Iodine

Copper
Zinc
117. Patient, 45 years old, grumbles about indefatigable thirst, consumption of plenty of liquid (up to 5 litres), excess urine formation (up to 6 litres/ day). A concentration of glucose in blood is 4,4 mmol/l, the level of ketone bodies is not increased . Urine is uncolored, relative gravity - 1,002; sugar in urine is not determined. The deficit of what hormone can result in such changes?
Insulin
Aldosterone
*Vasopressin
Glucagon
ACTH
118. A patient is in the state of hypoglycemic coma. Indicate the overdose of what hormone can result to such situation.
Corticotropin
Progesteron
Cortisol
Somatotropin
*Insulin
119. A test index on tumour development of zona …. of adrenal cortex is a level of what hormones?
Mineralocorticoids
*Catecholamines
Glyukokortikoidiv.
Sex hormones
Corticoliberines
120. During an operation on a thyroid gland concerning a Bazedov's disease (thyreotoxicosis), by mistake parathyroid glands were remote. There were cramps, tetania. What biotelement exchange was broken?
Potassium
Magnesium
*Calcium
Iron
Sodium
121. A patient on the eve of an operation was in a stress state. The increase of what hormone concentration in blood accompanies this state?
Prolactin
Insulin
*Adrenalin
Progesteron
Glucagon
122. A parafunction of Langerhans's islands results in the decline production of:
Calicreins and angiotensin
Thyroxin and calcitonin
Insulin and adrenalin
*Glucogon and insulin
Parathyroid hormone and cortisol
123. A patient appealed to the physician with complaints about constant thirst. It was found out a hyperglycaemia, polyuria and content of 17-corticosteroids is increased in urine. What disease is probable?
Diabetes mellitus
*Steroid diabetes
Mixedema

Glycogenosis of I of type
Addison's disease
124. What from the indicated hormones does reduce speed of lipolysis in adipose tissue?
Somatotropin
Adrenalin
Hydrocortison
*Insulin
Noradrenalin
125. The second messenger in the mechanism of adrenalin action is:
cCMP
cGMP
cUMP
cTMP
*cAMP
126. What from the indexes transferred below does confirm the diagnosis of hypothyreosis?
*A decline triiodo-thyronines in blood
A decline of calcitonin in blood
An increase of cholesterol in blood
A decline of creatinine in urine
A decline of calcium in urine
127. For the 62 years old man a adenoma of prostate was diagnosed. A Sinestrol (synthetic åstrogen) was appointed to him. What, above all things, does stipulate the therapeutic effect of this medicine?
Inhibition of LPVLD synthesis
Inhibition of translation
Violation of glycolysis
Decline of transcription
*Testosteron receptors blocking
128. For a 40 years old man a hypoparathyroidism found out. What results of laboratory analysis indicate on this diagnosis?
Hypocalciuria
Hypophosphatemia
The level of hydroxy-proline is enhanceable in urine
*Hypocalciemia
An increase of cialic acids maintenance in blood
129. Increased resistibility of "winter swimmers" to cold water is explained that for them great amounts of hormones that uncouple the processes of oxidation and heat formation in mitochondria is synthesized. What is this hormones?
Adrenalin and Noradrenalin
*Iodo-containing hormones of thyroid gland
Glucagon
Insulin
Corticosteroids
130. For a patient urine in an amount 8 litre per day has specific gravity is1,006. What hormone function insufficiency can cose it?
*Vasopressin
Insulin
Iodothyronin
Glucocorticoids
Somatotropin
131. A patient grumbles about a muscle weakness and darkening of skin of total-body. At an inspection such changes found out: arterial presure –100/60 mm HG, glucose blood level is of 3,0

mM/l. What illness can be suspected?
Myxedema
*Addison disease
Insuloma (with the increased insulin production)
Cushing's syndrome
Pellagra
132. To the endocrinology dispensary a 40 years old woman appealed with complaints about shaking of hands, heart palpitation, constant hypertermia (37-38 0C), lost of body weight. At a blood test found out the increase of sugar, fat acids and amino acid levels. The hyperproducts of what hormones do cause these symptoms?
Glucocorticoids
*Iodothyronines (thyroxin et al)
Corticotropin
Insulin
Somatotropin
133. For a sick woman with a low arterial pressure after parenteral introduction of same hormone cause the increase of arterial pressure and also the glucose level and lipids level rose in blood. What hormone was introduced?
Insulin
Glucagon
*Adrenalin
Progesteron
Folliculin
134. A man, 38 years old, takes treatment in dispensary concerning schizophrenia. Initial maintenance in blood of glucose, ketone bodies, urea - in a norm. Shock therapy by regular injections of insulin resulted in development of insulin comma, the improvement of the sick state came whereupon. What was the most reliable reason of insulin comma?
Ketonemia
Tissue dehydration
Metabolic acidosis
*Hypoglicemia
Glucosuria
135. At patient investigation a doctor suspected the Cuching's syndrome. Determination of what matter in blood of patient will confirm the diagnosis?
Cholesterol
Tokoferol
Retinol
Adrenalin
*Cortisol
136. A 40-years-old patient is hospitalized with complaints about a common weakness, cramps of upper and lower extremities, AP is 160/100 mm GH. Research results: glucose of blood - 6,5 mmol/l, cholesterol - 6 mmol/l, calcium - 2 mmol/l, phosphorus - 1 mmol/l, sodium - 160 mmol/l. Urine formation - 700 ml/day. What pathology did entail such state?
Rachitis
*Hypoaldosteronism
Hyperparathyroidism
Thyrotoxicosis
Hyperaldosteronism
137. The products of hydrolysis and modification of certain albumins are biologically active matters-hormones. Indicate, from what proteines in a hypophysis a lipotropin, corticotropin melanotropin and endorphine syntesis appear?
Neuroglobulin

Neuroalbumin
Neurostromin
*Proopiomelanocortin (POMK)
Thyreoglobulin
138. There is a hyperglycaemia at Cuching's diasese (a hyperfunction of adrenal cortex with the enhanceable production of corticosteroids). What process is stimulated here?
Krebs Cycle
Phosphorolysis of glycogen
*Gluconeogenesis
Pentose phosphate pathway of glucose oxidization
Glycolysis
139. The utilization of glucose takes a place by its transport from extracellulary space through a plasma membrane inside the cell. This process is stimulated by:
Glucagon
*Insulin
Thyroxin
Aldosterone
Adrenalin
140. For a patient the decline of vasopressin synthesis is set, that results in polyuria and, as a result, to signifying dehydration of organism. What from indicated is the most probable mechanism of polyuria?
*Decline of canalicili reabsorption
Violation of canalicili reabsorption of Nà+ ions
Decline of canalicili re absorption of proteins
Violation of glucose rabsorption
Increase of hydrostatical pressure
141. There is a loss of weight and fervescence at the increase of thyroid gland function. What biochemical processes are activated here?
Anabolism
*Catabolism
Gluconeogenesis
Lipogenesis
Steroidogenesis
142. For a 9-years-old boy , which is on stationary treatment the defeat of kidney and increased arterial pressure are found out. To the increase of what bioactive peptide is this state related?
Glucagon
Antidiuretic hormone
*Angiotensin ^{22}
Kalidin
Insulin
143. After a hemorrhage in a brain with the damage of hypothalamus nucleuses a 67-years-old woman had diabetes insipidus. What did become reason of polyuria in this case?
Hyperglycaemia
Diminishing of potassium ions reabsorption
Acceleration of glomerular filtration
*Decreased water reabsorption
Hypoglycemia
144. For a patient decrease of body weight, increase of basic metabolism is marked at an enhanced appetite under good nourishment. Excess of what hormone causes such changes:
Adrenalin
Glucagon
ACTH

Insulin
*Thyroxin
145. In a 50-years-old person there is thirst. Daily diuresis is 4-5 litres. Glucose level in blood - 4,6 mmol/l, in urine glucose is not found. In this case it is expedient to check up maintenance in blood:
Estrogens
*Vasopressin
Aldosterone
Cortisol
Thyroxin
146. On the basis of testosteron some medicines are synthesized, which use for diseases which are accompanied with exhaustion, at fractures et cetera. What effect in the action of these medicines is maximally increased as compared to initial structures?
Androgenic
*Anabolic
Estrogenic
Catabolic
Amfibolic
147. The 10-years-old boy entered hospital for an inspection concerning little height. For two last years he grew all on 3 cm. Insufficiency of what hormone is cause such state?
Gonadotropic
Adrenocorticotropic
*Somatotropic
Thyreotropic
Parathyroid
148. A 50-years-old man experiences strong stress. The concentration of adrenalin and Noradrenalin was sharply increased in blood. What enzymes catalyse its inactivation process?
Peptidase
Glycosidase
*Monoamineoxidase
Carboxylase
Thyrosinase
149. At the chronic overdose of glucocorticoids a hyperglycaemia develops for a patient. Name the process of carbohydrate metabolism due to which the concentration of glucose is increased.
Pentose phosphate pathway
Glycogenolysis
Aerobic glycolysis
*Gluconeogenesis
Glycogenesis
150. Aspirin owns a antiinflamatory action, as inhibit cyclooxygenase activity. The level of what bioactive matters will go down?
*Prostaglandines
Leukotrienes
Catecholamines
Biogenic amines
Iodothyronines
151. For delivery stimulation physician introduce to woman a prostaglandin E2. From what is it synthesized from?
Palmitic acid
Phosphatidic acid
*Arachidonic acid
Stearic acid
Glyutamic acid

152. Prostaglandins are used in a clinical practise as therapeutic facilities. What is basis for their synthesis?
Phosphatidic acid
*Arachidonic acid
Palmitic acid
Stearic acid
Glyutamic acid
153. During arachidonic acid utilization on a cyclooxygenase way biologically active matters will synthesized. Indicate them.
Biological amines
Thyroxin
*Prostaglandins
Somatomedins
Insulin-like growth factor
154. At emotional stress in adipocytes a hormonesensitive triglyiceridelipase is activated. What second messenger takes part in this process?
Ca+ ions
cCMP
AMP
Diacylglycerol
*cAMP
155. What compound is a precursor in prostaglandines synthesis in the man's organism?
Linolenic acid
Palmitic acid
Linolic acid
Oleic acid
*Arachidonic acid
156. A 35-years-old man is ill on pheochromocytoma. The enhanced level of adrenalin and noradrenalin appears in blood, the concentration of free fatty acids grows in 11 times. What enzyme activation under adrenalin action promotes lipolysis?
Phospholipase-C
Lipoproteidlipase
Phospholipase-A2
*Triacylglycerol-lipase
Cholesterolesterase
157. The 42-years-old man suffers on rheumatoid arthritis. To the complex of introduced medicines an aspirin is added – a cyclo-oxygenase inhibitor. What acid prostaglandines does appear from?
Propionic acid
Neuraminic acid
Linolenic acid
Linolic acid
*Arachidonic acid
158. The prolonged use of large doses of aspirin causes oppression of prostaglandines synthesis. It is a result of what enzyme decline activity?
*Cyclo-oxygenase
Peroxidase
5-lipoxygenase
Phospholipase-A2
Phosphodiesterase
159. Arachidonic acid as essential component of food is a precusor for biologically active compounds. Indicate what compounds are synthesized from it.

Triiodo-thyronin
Cholin
Noradrenalin
Ethanolamine
*Prostaglandine E1
160. To the physician parents appealed with a 5-years-old child. Under inspection it is discovered: lag of mental development and growth, a child is not mobile. A common metabolism is decreased. What disease the child has?
Phenylketonuria
Lesch – Nyhan syndrome
*Cretinism
Hyperparathyroidism
Endemic goitre
161. The characteristic signs of cholera is a loss by organism of plenty of water and sodium ions. The biochemical basis of cholera toxin action is:
*Activation of adenylatecyclase of small intestine
Activation of atrium natriuretic peptide
Braking of antidiuretic hormone synthesis in hypothalamus
Strengthening of renin secretion by ukstaglomerular apparatus of kidney arterioli
Aldosteron oxidation in the adrenal cortex
162. The Ca+ ions - one of oldest evolutional second messenger in cells. They are the glycogenolysis activators, if co-operate with:
Calcitonin
*Calmodulin
Calciferrol
Kinase of miosin light chains
Phosphorylase Ñ

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Lipids

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1. High content of cholesterol in the beta-lipoprotein faction was show up during a blood test. What is the possible complication of this phenomenon?
Hypertension
Diabetes mellitus
Obesity
+Atherosclerosis
Jaundice

2. Insufficient secretion of what enzyme causes damage of fats digestion in the gastrointestinal tract and the excretion of a large number of neutral fats in the feces?
Amylase
Phospholipase
Enterokinase
+Pancreatic lipase
Pepsin

3. 1-year-old child with symptoms of muscle damage (involvement) was admitted to the hospital. Examination revealed of carnitine deficiency in his muscles. What metabolic disorder is the biochemical basis of this pathology?
Utilization of lactic acid
Regulation of level of Ca in mitochondria
Substrate phosphorylation
+Transport of fatty acids to mitochondria
The synthesis of actin and myosin

4. The sick child in the analysis of blood has hyperlipoproteinemia which transmitted by inheritance. The genetic defect in the synthesis of which enzyme causes it?
Proteinase
Glycosidase
+Lipoprotein lipase
Hemesynthetase
Phenylalanine hydroxylase

5. Aspirin (acetylsalicylic acid) has an anti-inflammatory action, as it suppresses the activity of cyclooxygenase. The level of what biologically active substances will decrease?
Biogenic amines
Leukotriens
Catecholamines
+Prostaglandins
Thyroxin and triiodothyronine

6. Synthesis of phospholipids is disordered under the liver fat infiltration. Indicate which of the following substances can enhance the process of methylation during phospholipids synthesis?
Glucose
+Methionine
Citrate
Glycerin
Ascorbic acid

7. The patient with diabetes mellitus has been delivered in hospital in the state of unconsciousness. Arterial pressure is low. The patient has acidosis. Point substances, which accumulation in the blood results in these manifestations:
Monosaccharides
Cholesterol esters
High fatty acids
Amino acids
+Ketone bodies

8. A 1-year-old child with symptoms of muscle involvement was admitted to the hospital. Examination revealed carnitine deficiency in his muscles. What process disturbance is the biochemical basis of this pathology?
Lactic acid utilization
Substrate phosphorylation
+Transporting of fatty acids to mitochodria
Actin and myosin synthesis
Regulation of Ca2+ level in mitochondrions

9. Patient 58 years old suffers from stenocardia attacks, caused by coronary arteries atherosclerosis. Increased level of what substance may cause atherosclerosis development?
+Cholesterol
Proteins
Glucose
Triglycerides
Phospholipides

10. Which of the following inhibits the activity of acetyl-CoA carboxylase?
High-carbohydrate, low-fat diet
+Glucagon
Citrate
Insulin
Triglycerides

11. Fatty acids, as the high-energy compounds are metabolized in mitochondria and form a large amount of energy. What ways are these processes go?
Transamination
Decarboxylation
+b – oxidation
Deaminization
Reduction

12. Arachidonic acid as the essential component of food is a precursor of biologically active substances. Please specify which compounds are synthesized from it?
Choline
+Prostaglandin E1
Noradrenaline
Ethanolamine
Triiodothyronine

13. Ischemic heart disease was diagnosed in patient of 30 years old. The attacks of angina already trouble him for 3 years. Hereditary nature of the disease was detected. What kind of hyperlipoproteinemia most likely was found in patient?

V (hyperchylomicronemia with hyperbetalipoproteinemia)
I (hyperchylomicronemia)
+III (hypercholesterolemia with hyperlipemia)
IV (hyperprebetalipoproteinemia)
II A(hyperbetalipoproteinemia)

14. Man of 60 years old suffers from atherosclerosis of vessels. Which substance plays a leading role in the pathogenesis of this disease?
Chylomicrons
High-density lipoproteins
+Low-density lipoproteins
Tissue's enzyme - lipoprotein lipase
Complex fatty acids with albumin

15. Patient complains on periodic diarrhea which is connected with eating the fat-rich foods. But he marked the reduction of the coloration of stool. The laboratory examination showed normal content of lipids in blood serum. Violation of which state of lipid exchange takes place on this patient?
Intermediate exchange of lipids
Transport lipids in the blood
+Absorption of lipids
Storage of lipids in adipose tissue
Mobilization of lipids from adipose tissue

16. Patient of 67 years old suffers from heart and brain vessels atherosclerosis. The examination showed hyperlipemia. Which class of blood plasma lipoproteins decreasing is the most important in the atherosclerosis pathogenesis?
Chylomicrons
+b-lipoproteins (LDL)
Pre- ? –lipoproteins (VLDL)
?-lipoproteins (HDL)
Free fatty acids

17. The process of organic compounds oxidation is the only source of water for the body during absolute starvation. Which of the following substances in these conditions is the main source of water?
Glycoprotein
Proteins
Carbohydrates
+Fats
Lipoproteins

18. Prolonged use of large doses of aspirin causes the inhibition of synthesis of prostaglandins by reducing the activity of the enzyme:
Peroxidase
+Cyclooxygenase
5- lipooxygenase
Pospholipase A-2
Posphodiesterase

19. Which of these hormones reduces lipolysis in the adipose tissue?
Somatotropin
Adrenaline

Cortisone
+Insulin
Noradrenaline

20. What lipids are causing the opacity of blood serum:
Glycerol
Cholesterol
Fatty acids
Triglyceride
+Chylomicrons

21. During the fatty infiltration of liver synthesis of phospholipids is violated. Specify which of the listed substances can increase the processes of methylation in the synthesis of phospholipids?
Glycerin
Ascorbic acid
Glucose
+Methionine
Citrate

22. Patient feels nausea, weakness, some time steatorrhea appeared after taking of fatty food. The level of blood cholesterol is 9.2 mmol / liter. The reason of this state is a deficiency of:
Chylomicrons
Triglycerides
Fatty acids
Phospholipids
+Bile acids

23. The medicine which contains carnitine was recommended to use by sportsman for improve results. What process is the most activated by carnitine?
Synthesis of ketone bodies
+Transport fatty acids into mitochondria
Synthesis of lipids
Tissue respiration
Synthesis of steroid hormones

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Proteins and enzymes

1. Five isoenzyms forms of LDH were isolated from the serum of blood of a person and were studied. What property proves that the isolated isoenzymes are the forms of the same enzyme?
+Tissues localization
The identical localization
The identical molecular weight, physical and chemical properties
Catalysts of the same reactions
The identical electroforetical mobility

2. Proteins presence in a solution can be found out by means of colour reactions. Which one of low listed reactions proves the negative result during full proteins hydrolysis?
Lead acetate test
Ninhydrin reaction
Xanthoprotein reaction
+Biuret reaction
Sakaguchi reaction

3. During studying properties of enzyme, an unknown substance was added to the enzyme-substrate system. In total the Michael's constant increased in 2 times. Which processes have taken place?
non-competitive inhibition
+competitive inhibition
uncompetitive inhibition
Allosteric activation
Irreversible inhibition

4. A doctor, before to appoint protein's parenteral nutrition to exhausted patient, appointed to define the elektroforetical spectrum of blood albumens. What physical and chemical properties of albumens is this method based on?
Optical activity
Viscidity
Inability to denaturation
Hydrofilic properties
+Presence of charge

5. Patient suffers from acute pancreatitis. What medicines should be prescribed, in order to avoid autolysis of pancreas?
Amylase
Activators of proteases
Trypsin
Himotripsin
+Inhibitors of proteases

6. Research of elektroforetic spectrum of albumens of blood serum was carried out to a patient with hepatic failure. What physical and chemical properties of albumines molecules are
in the basis of this method?
+Presence of charge
Gidrofilic properties
Ability to swell up
Optical activity

Inability for the dialysis

7. Cation glycoproteins are the basic components of saliva of parotid glands. What amino acids stipulate their positive charge?
Aspartat, glutamat, glycine
+Lusine, arginine, histidine
Aspartic acid, arginine, glutamic acid
Glutamic acid, valine, leutcine
Cysteine, glycine, praline

8. Adult hemoglobin (HbA) – is a protein, which is formed by two ?- and two ?-peptide chains. What name has this structure of protein?
+Tertiary
Quaternary
Secondary
Primary

9. Sulphanilamide drugs are similar be their structure to paraaminobenzoic acid. On what molecular basis is their pharmacological effect based?
activating of lipolisis
binding with DNA
inhibition of glykolisis
+infringement of vitamin synthesis
destruction of cellular membrane

10. The high level of Lactate Dehydrogenase (LDH) isozymes concentration showed the increase of LDH-1 and LDH-2 at patient's blood plasma. Indicate the most probable diagnosis:
Diabetes mellitus
Skeletal muscle dystrophy
Viral hepatitis
+Myocardial infarction
Acute pancreatitis

11. The conjugated protein necessarily contains special component as a non-protein part. Choose the substance that can't carry out this function:
Glucose
HNO3
+Thiamine pyrophosphate
ATP
AMP

12. Different functional groups can be presented in the structure of L-amino acid's radicals. Identify the group that is able to form ester bond:
+–OH
-CONH2
-SH
-NH2
-CH3

13. Marked increase of activity of MB-forms of CPK (creatinephosphokinase) and LDH-1 was revealed by examination of the patient's blood. What is the most probable pathology?
+Myocardial infarction

Hepatitis
Pancreatitis
Rheumatism
Cholecystitis

14. A denaturation of proteins can be found in some substances. Indicate the substance that is used for the incomplete denaturation of haemoglobin:
Sulphuric acid
Nitric acid
Toluene
Sodium hydroxide
+Urea

15. Only one factor can influence the charge of amino acid radicals in the active centre of enzyme. Name this factor:
The presence of a competitive inhibitor
Temperature
Pressure
+pH medium
The surplus of a product

16. Succinate dehydrogenase catalyses the dehydrogenation of succinate. Malonic acid HOOC-CH2-COOH is used to interrupt the action of this enzyme. Choose the inhibition type:
Allosteric
+Competitive
Non-competitive
Dephosphorylation
Limited proteolysis

17. There are three residues of aromatic acids in protein structure, but all of them are synthesized in human, except
+Thyr
Trp
Phe
Ser
Ala

18. Heme synthesis starts from glycine and succinyl-SCoA interaction with (-aminolevulinate synthetase help. It is inhibited by the terminal metabolic product – heme. Name the inhibition type:
+Feedback inhibition
Uncompetitive regulation
Non-competitive inhibition
Limited proteolysis
Competitive inhibition

19. The molecule of insulin contains two polypeptide chains. Specify the level of protein organization, at which insulin is able to act as hormone:
+Quaternary
Tertiary
Primary
Secondary
Denaturated molecule

20. The receptors of hormones are referred to the conjugated proteins. Specify the class of those proteins:
+Glycoproteins
Phosphoproteins
Flavoproteins
Hemoproteins
Nucleoproteins

21. Which of the following amino acids is post-translationally hydroxylated in the cytoplasm of fibroblasts?
Cysteine
Glycine
+Proline
Serine
Tyrosine

Vitamins

1. Patient with carcinoma has the insufficiency of vitamin B5 , serotonin concentration at blood is extreamly incresed. What is the reason of this state?
Infringement of serotonin metabolism in organism
+Tryptophan mainly turns in serotonin
Alimentary deficiency of vitamin PP
Increased use of vitamin PP
Serotonin promotes reduction of vitamin PP in an organism

2. After epileptic attack the baby was examined by the pediatrist, baby is given artificial meal. Dermatitis was also diagnosed. After laboratory tests the decrease of alanin - and aspartataminotransferase level activity of erythrocytes was detected. What vitamin insufficiency can be detected?
Cobalamin
Ackorbinic acid
+Pyridoxine
Riboflavin
Calcipherol

3. During obstructive jaundice deficiency of protrombin is often registered. Deficiency of what vitamin is it connected with?
E
B6
A
D
+K

4. The symptoms of rickets at child (4 month). Digestion disturbance are not registered. The child spends much time outdoors(sun bathes). During 2 months the child received vitamin D3, however rickets symptoms have not decreased. What is the possible explain of rickets development at this child?
Infringement of calcitryol synthesis+
Infringement of calcitonin synthesis
+Infringement of parathormon synthesis
Infringement of thyroxin synthesis
Infringement of insulin synthesis

5. Treatment of some infectious diseases which are caused by bacterias is based on, sulfanilamide medicines, these medicines block synthesis of the growth factor of bacteria. Choose the mechanism of sulfanilamide's medicines:
Inhibition of absorption of folic acid
+these drugs are antivitamins of paraaminobenzoic acid
inhibitor of same enzymes
these drugs take part in oxide-redactions reactions
these drugs are allosteric enzymes of paraaminobenzoic acid

6. On reception to the doctor the patient with symmetric dermatitis of open sites of skin has come. From patient's story it is established that he eats, basically, sereals and few meat, milk and eggs. Deficiency of which vitamin is principally detected?
Folic acid

Calciferol
+Nikotinamide
Biotin
Tokoferol

7. Carrot, pumpkin and other red vegetables contain carotin. Defficiency of what vitamin is supplied with these vegetative pigments?
Tokoferol
Naftohinon
Riboflavin
+Retinol
Calciferol

8. Avitaminosis of what vitamin can significantly decrease the aminotransferesis activity in blood serum?
B9, folic acid
B1 thiamin
B2 riboflavin
B5 nicotinic acid
+b6 pyridoxine

9. At woman for a long time is on a diet with cleared rice, polyneuritis (illness beriberi) was diagnosed. What vitamin insufficiency at food leads to development of this disease?
+Thiamin
Ackorbinic acid
Pyridoxine
Folic acid
Riboflavin

10. Patient has disturbance in calcium absorption processes in intestine after removal of gold bladder. What vitamin will stimulate this process?
PP
+D3
C
B12
K

11. The symptoms of beriberi are present at the patient. Activity of what enzyme is broken at the patient?
Malate dehydrogenase
Citrate sintatese
+Pyruvate dehydrogenase
Suktsinate dehydrogenase
Fumarase

12. At the patient with frequent bleedings from an internal organs and mucous membrane, proline and lysine as a part of collagen’s fibers are found out. What vitamin absence causes hydroxylation of proline and lysine?
Thymine
B1
A
+C

E

13. At the patient, which accepts anticoagulants of indirect action, decrease of prothrombin level from 0, 15 g/l to 0, 05 g/l is detected. Prothrombin takes part in the second phase of blood clloting - formations of thrombin. It has taken place as a result of:
Decrease of quantity of globulin of blood
Deficiency of vitamin B12
Deficiency of vitamin C
Decrease of concentration of Ca ++
+Deficiency of vitamin K

14. Increased concentration of pyruvate is detected at the patient's blood and urine. What avitaminosis is observed at the patient?
+Avitaminosis B1
Avitaminosis E
Avitaminosis B3
Avitaminosis B6
Avitaminosis B2

15. Anticoagulant pelentan was prescribed to the patient with thromboembolitic illness. What vitamin antagonist is this compound?
Vitamin C
Vitamin E
Vitamin A
Vitamin D
+Vitamin K

16. At patient a night blindness (nyctalopia) is detected. What of the low listed substances will have medical effect?
Karnitin
Keratin
Kreatin
+b Carotene
Karnozin

17. The patient complains on general weakness and bleeding from gums. What vitamin lack can cause such state?
Vitamin A
Vitamin E
+Vitamin C
Vitamin H
Vitamina D

18. During child (age of 11 months) examination by pediatrist, bended bones of the low limbs and retardment of bones mineralization of skull were found. What vitamin lack leads to the pathology?
Thiamin
+Cholecalciferol
Pantothenic acid
Bioflavonoid
Riboflavin

19. During treatment of inflammatory process (Infectious process) by antibiotics, infringement of

blood clotting at patient emerged, as a result of suppression of intestines microflora. Insufficiency of what vitamin is detected at the patient?
+K
B1
D
C
B12

20. The patient has symptoms of diarrhoea, dementia and dermatitis as a result of wrong diet. Lack what of vitamin causes these state?
Vitamin B1
+Vitamin pp
Vitamin B2
Vitamin C
Vitamin B12

21. The patient suffers from pernicious anemia. The patient eats normally. One month ago he had operation on a stomach. What is reason of the anaemia?
Deficiency of folic acid in food
Deficiency of vitamin C
Deficiency of vitamin PP in food
Deficiency of proteins in food
+Deficiency intrinsic factor Castle

22. During routine inspection of a child the retardment of a bones mineralization was revealed. What vitamin lack could serve the reason of this?
Folic acid
Riboflavin
Tocopherol
+Calciferol
Cyanocobalamine

23. Hydroxyproline is the important amino acid in the structure of collagen. Which vitamin does help in formation of this amino acid by hydroxylation of proline?
B2
D
B1
+C
B6

24. During enterobyosis structural analogue of vitamin B2- acrichine is used. What enzymes synthesis infringement at microorganisms causes this medicines?
Peptidase
Cytochrome oxidase
+FAD- dependent dehydrogenase
NAD - dependent dehydrogenase
Aminotransferase

25. The 10 year-girl is often affected respiratory infections. After respiratory infections plural hemorrhage dot in places of a friction of clothes are observed. Specify what hypovitaminosis has taken place at the girl.
B6

+c
B1
And
B2

26. Vitamin therapy was prescribed to the pregnant woman who had some spontaneous abortions in the anamnesis. Specify vitamin, which promotes carrying of a pregnancy.
Folic acid
+@-tocopherol
Cyanocobalamine
Pyridoxin
Rutin

27. At the child (6 month) frequent and strong hypodermic bleedings were observed. An appointment of synthetic analogue of vitamin K (vicasol) has given positive effect. This vitamin takes part in carboxylation of glutamate in molecules of blood factor (coagulation proteins). Specify this protein?
Antihemophilic globulin, factor VIII
fibrinogen
The factor of Hageman
+Prothrombin, factor II
Rosenthal's factor

28. At patients, with obturation of the general bile duct, hemorrhages arise, which are connected with bad absorption of vitamin:
E
+k
K
D
F

29. Patient suffers from diarrhoea, dementia and dermatitis. At the anamnesis is known that the basic foodstuff of the patient is corn. These infringements are connected with bad mastering of vitamin:
Vitamin B1
+Vitamin pp
vitamin B2
vitamin B9
vitamin B8

30. The oculist has found out increase of adaptation time of an eye to the darkness at patient. What vitamin insufficiency can cause such symptoms?
Vitamin C
Vitamin E
+Vitamin A
Vitamin K
Vitamin D

31. The patient complained on the general weakness and bleeding from gums. What vitamin insufficiency can it be at patient?
Vitamin B1
Vitamin E

Vitamin PP
Vitamin D
+Vitamin C

32. Durind examination of the patient diarrhoea, dementia and dermatitis are diagnosed. Specify absence of what vitamin is the cause of this state.
Ascorbic acid
+Niacin
Folic acid
Biotin
Rutin

33. The megaloblastic anemia is diagnosed at the patient. Specify the substance which insufficientcy can cause the development of this illness.
Cholecalciferol
Glycine
Copper
+Cyanocobalamine
Magnesium

34. At patient, with frequent bleedings in to visceral organs and mucous membranes, in the structure of collagen fibers proline and lysine were found out. Absence of what vitamin causes such infringement of hydroxylation of this amino acid?
Vitamin E
+Vitamin C
Vitamin K
Vitamin A
Vitamin D

35. According with clinical symptoms pyridoxalphosphate was prescribed to the patient. For what processes correction this medicine is recommended?
+Transamination and decarboxylation of amino acids
Oxidative decarboxylation of keto acid
Deamination of amino acids
Synthesis purine and pyrimidine bases
Synthesis of proteins

36. Dermatitis has appeared at patient after eating raw (unboiled) eggs. What avitaminosis has emerged?
Avitaminosis of folic acid
+Avitaminosis of biotin
Avitaminosis of pantothenik acid
Avitaminosis of paraaminobenzoic acid
Avitaminosis of inositol

37. A pyruvate concentration is increased at the patient’s blood. The much pyruvate is excreted via urine. What avitaminosis is observed at the patient?
avitaminosis of vitamin B6
avitaminosis of vitamin E
avitaminosis of vitamin B3
+avitaminosis of vitamin B1
avitaminosis of vitamin B2

38. The patient has symptoms of pellagra. During interrogation it became known that throughout long time he ate mainly corn and little meat. What became the cause of pellagra ?
Deficiency proline in corn
Deficiency tyrosin in corn
+Deficiency tryptophan in corn
Deficiency alanine in corn
Deficiency hystidine in corn

39. During various diseases level of active forms of oxygen increases extreamly that leads to destruction of cellular membranes. For prevention of it antioxidants are used. Strong natural antioxidant is:
Glucose
+@-tocopherol
Vitamin D
Fatty acids
Glycerine

40. The newborn child has symptoms of hemorrhagic illnesses which connected with vitamin K hypovitaminosis. This disease is caused by inhibition of the vitamin K biological role, which:
inhibits synthesis of heparin
Is cofactor of prothrombin, factor II
Is specific inhibitor of antithrombin
Influences on proteolytic activity of thrombin
+Is cofactor @-glutamat - carboxylase

41. Morbidity along large nervous trunks and the raised pyruvate level in blood is found out at the patient. What vitamin insufficiency can cause such changes?
PP
B2
+b1
Pantothenic acid
Biotin

42. Most participants of Magellan expedition to America died from avitominosis. This disease debuted with general weakness, subcutaneous hemmorhages, falling of teeth, gingival hemmorhages. What is the name of this avitiminosis?
Biermer's anemia
Pellagra
Rachitis
Polyneuritis (beriberi)
+Scurvy

43. While examining the child, doctor found symmetric cheeks roughness, diarrhea and disfunction of the nervous system. Lack of what food components caused it?
Threonine, pantothenic acid
Methionine, lipoic acid
Lysine, ascorbic acid
+Nicotinic acid, tryptophane
Phenylalanine, pangamic acid

44. It is known that the collagen molecule contains amino acids (oxyproline, oxylysine). Which one

of the listed low substances takes part in hydroxylation of proline and lysine during synthesis?
Asparaginic acid
Folic acid
Pantothenic acid
Glutamic acid
+Ascorbic acid

45. At the newborn spasms are registered,they've disappeared after appointment of vitamin B6. This effect is most possibly caused by the fact that vitamin B6 takes part in formation of:
histamine
non-essential amino acids
heme
+gama-amino butyric acid (GABA)
Nicotinamide

46. At the young man 20 years old macrocytic anaemia has emerged, increased level of methyl malonic acid is registered in urine. It is first of all caused by deficiency of:
Pantothenic acid
Nicotinic acid
+Cyanocobalamin
Ascorbic acid
Biotin

47. The gerontology institute advises to old people to use a complex of vitamins which contains vitamin E. What main function does it carry out?
Antiscorbutic function
Antihemorrhagic function
+Antioxidant function
Antineuritic function
Antidermatitic function

48. After a course of therapy the doctor offers to the patient with an ulcer of a duodenum to use cabbage and potato juices. What substances in this food promotes preventive maintenance and healing of ulcers?
Pantothenic acid
+Vitamin U
Vitamin C
Vitamin B1
Vitamin K

49. The doctor advises to use half-cooked liver in ratio of the patient during treatment of pernicious anemia. What vitamin presence in this product will have medical effect?
+Vitamin b12
Vitamin B1
Vitamin B2
Vitamin C
Vitamin H

50. At the man who did not recieved fats with meal for a long time, but received enough of carbohydrates and proteins, dermatitis, bad healing of wounds, sight deterioration are found out. What is the cause of metabolism infringement?
A lack of palmitic acid

+A lack of linoleic acid, vitamins A, Д, E, K
A lack of vitamins PP, H
Low caloric content of diet
A lack of oleic acid

51. People, who suffers from alcoholism, receive main part of calories with alchoholic beverages. They can have a characteristic insufficiency of thiamine (a syndrome of Wernicke), which causes a nervous system functions infringement, psychoses, memory loss. With what enzyme activity inhibition is it connected?
Transaminase
Alcohol dehydrogenase
+Pyruvate dehydrogenase
Aldolase
Hexokinase

52. Treatment of the child who suffers from rickets with vitamin D did not give positive results. What is the most plausible reason of treatment inefficiency?
Raised use of vitamin D by microflora of intestines
Insufficiency of lipids in meal
Infringement of vitamin D inclusion to enzyme
+Infringement of vitamin D hydroxylation
Infringement of vitamin D transport by blood proteins

53. At person who suffers from alcoholism, hypovitaminosis B1 is often observed, which is the reson of diet infringements. Symptoms of B1 hypovitaminosis are the nervous system frustration, psychoses, memory loss. Why cells of a nervous tissue are especially sensitive to vitamin B1 deficiency?
Decreases intensity of glycolysis
Amplifies lipolysis in adipose tissue
Oxidation of fatty acids is broken
Intensity of glycolysis is raises
+Infringement of glucose aerobic oxidation

54. After treatment with antibiotics as a result - fringement of intestine microflora is possible with development of hypovitaminosis:
D
C
A
p
+b12

55. For treatment of malignant tumours methotrexate (structural analogue of Folic acid) is prescribed which is the competitive inhibitor of dehydrofolatreductase and consequently suppresses synthesis of:
Glycerophosphates
Monosaccharides
Fatty acids
+Nucleotides
Glycogen

56. Vitamin A in a complex with specific cytoreceptors penetrates through a nuclear membrane and induces transcription processes, which stimulate the growth and differentiation of cells. This

biological function is realised through the following form of vitamin A:
Retinol
Tranc-retinal
Cis-retinal
+Trans-retinoic acid
Carotene

57. Malignant macrocytic anaemia – Birmer desiase– is a result of vitamin B12 lack. What microelement is a part of this vitamin?
Zinc
Molybdenum
+Cobalt
Iron
Magnesium

58. During parodontosis treatment an antioxidant of a natural and artificial origin is used. Specify, what of natural compounds is used as antioxidant?
Gluconate
Thiamine
+Tocopherol
Pyridoxine
Choline

59. At patients, with impassability of bile-excreting ducts, infringement of blood coagulation bleedings emerge which are the consequence of wrong metabolism of vitamin:
A
K
D
+k
Carotene

60. At the patient such changes are registered: sight infringement in dark, dryness of conjunctiva and cornea. Such infringements can emerge because of deficiency of:
Vitamin B
+Vitamin A
Vitamin C
Vitamin D
Vitamin B12

61. After resection of 2/3 of stomach erythrocytes quantity has decreased in blood, erythrocytes volume has increased, haemoglobin level has decreased. Deficiency of what vitamin leads to such changes in blood?
PP
C
P
B6
+b12

62. At what hypovitaminosis simultaneous infringement of reproductive function and a dystrophy of skeletal muscles are observed?
+Vitamin e
Vitamin A

Vitamin K
Vitamin D
Vitamin B1

63. At the patient of 37 years after a long application of antibiotics, raised hemorrhagic bleeding from small damages is observed. At blood – decrease in activity of blood coagulation factors II, VII, X, lengthening of blood coagulation time. Deficiency of what vitamin has caused such changes?
Vitamin C
Vitamin A
+Vitamin K
Vitamin D
Vitamin E

64. At the patient of 36 years old who suffers from chronic alcoholism, accumulation of pyruvate is registered in blood, in erythrocytes – transketolase activity is decreased. What coenzymes form of the vitamin which insufficiency causes noted changes?
Pyridoxal phosphate
Carboxybiotin
Methyl cobalamin
+Thiamine pyrophosphate
Tetrahydrofolate

65. At the 43-years-old patient the megaloblastic hyperchromic anaemia is observed, atrophic chronic gastritis. Methylmalonyl in urine is raising. Insufficiency of what vitamin has caused occurrence of these symptoms?
+Vitamin b12
Vitamin B2
Vitamin B3
Vitamin B5
Vitamin B1

66. For diagnostics of some diseases, aminotransferase activity is researched in blood. What vitamin is a coenzyme of these enzymes?
+b6
B2
b1
B9
B5

67. At the child of 2 years after a long antibiotic therapy the dysbacteriosis has developed: almost total absence of Escherichia coli. Insufficiency of which group vitamins can emerge in connection with a dysbacteriosis?
B
b+
C
E
D

68. At the patient frequent bleedings from internal organs and mucous membranes are observed. The analysis has defined insufficiency of hydroxyproline and hydroxylysine as a part of collagenic fibres. Lack of what vitamin does bring disturbance in the process of hydroxylation of these aminoacids?

Vitamin K
Vitamin A
Vitamin H
+Vitamin C
Vitamin PP

69. The oxidative decarboxylation of ?-ketoglutarate is broken because of vitamin B1 deficiency. Synthesis of what coenzyme is broken?
Nicotinamide adenine dinucleotide (NAD)
+Thiamine pyrophosphate (TPP)
Flavine adenine dinucleotide (FAD)
Lipoic acid (LA)
E.Coenzyme A

70. According to clinical symptoms, pyridoxalphosphate was prescribed to the patient. For correction of what processes this medicine is recommended?
Deamination of purine nucleotides
Oxidative decarboxylation of keto-acid
+Transamination and decarboxylation of amino acids
Synthesis of purine and pyrimidine nucleotides
Synthesis of proteins

71. Hypovitaminosis of vitamine C leads to reduction of organic matrix formation, to infringement of collagen synthesis because this vitamin takes part in processes of:
Proline carboxylation
+Proline hydroxylation
Lysine carboxylation
Arginine hydroxylation
Tryptophan hydroxylation.

72. Gingival hemorrhage has sharply emerged to the patient. What vitamins should be prescribed to this patient?
C, K
B1, B2
+C;K
pp, B12
Biotin, pantothenic acid

73. The peripheral blood smear of a severely anemic patient reveals oval macrocytes (color index = 1,5) hypersegmented neutrophils and decreased platelets. Simultaneously he had severe lifelong achylic gastritis. The most likely anemia is:
+Megaloblastic B12- folate deficiency anemia
Aplastic anemia
Iron deficiency
Thalassemia major
Sickle cell anemia

74. If there is insufficiency of thiamine - vitamin B1, bery-bery desiase (polyneuritis) and carbohydrate metabolism disorder occure. What metabolite accumulates in blood during these processes?
Malate
Lactate

Succinate
Citrate
+Pyruvate

75. Patient with hypochromic anemia has splitting hair and loss of hair, increased nail brittling and taste alteration. What is the mechanism of these symptoms development?
Deficiency of iron-containing enzymes
Deficiency of vitamin B12
Decreased production of parathyroid hormones
Deficiency of vitamin A
Decreased production of thyroid hormones.

76. Increased vessels, enamel and dentine destruction at scurvy patients are caused by disorder of collagen maturing. What stage of procollagen modification is damaged during this avitaminosis?
+Hydroxylation of proline
Formation of polypeptide chains
Glycosylation of hydroxylysine residues
Removal of C-ended peptide from procollagen
Detaching of N-ended peptide.

77. Concentration of pyruvate is increased in the patient's blood, the most of which is excreted with urine. What avitaminosis is observed in the patient?
+Avitaminosis b1
Avitaminosis E
Avitaminosis B3
Avitaminosis B6
Avitaminosis B2

78. There is an inhibited coagulation in the patients with bile ducts obstruction, bleeding due to the low level of absorbtion of a vitamin. What vitamin is in deficiency?
K
+k
D
A
Carotene

79. Pyruvate concentration in the patient’s urine has increased 10 times from normal amount. What vitamin deficiency can be the reason of this change:
Vitamin B6
Vitamin A
Vitamin E
Vitamin C
+Vitamin B1

80. Hydroxylation of endogenous substrates and xenobiotics requires a donor of protons. Which of the following vitamins can play this role?
+Vitamin C
Vitamin E
Vitamin P
Vitamin A
Vitamin B6.

81. A 2-year-old child has got intestinal dysbacteriosis, which results in hemorrhagic syndrome. What is the most likely cause of hemorrhage of the child?
Activation of tissue thromboplastin
PP hypovitaminosis
Fibrinogen deficiency
+Vitamin K insufficiency
Hypocalcemia.

82. In case of enterobiosis acrihine - the structural analogue of vitamin B2 - is administered. What enzymes synthesis disorder does this medicine cause in microorganisms?
NAD-dependet dehydrogenases
Cytochrome oxidases
+FAD-dependent dehydrogenases
Peptidases
Aminotransferases.

83. Patients with bile ducts obstruction suffer from inhibition of blood coagulation, bleedings as a result of low level of vitamin assimilation. What vitamin is in deficiency?
D
Carotene
K
+k
E

84. A patient who was previously ill with mastectomy as a result of breast cancer was prescribed radiation therapy. What vitamin preparation has marked radioprotective action caused by antioxidant activity?
Ergocalciferol
Thiamine chloride
+Tocopherol acetate
Folic acid
Riboflavin

85. The role of the majority of water-soluble vitamins is due to their ability to form a cofactor of enzyme. Name the vitamin that is unable to carry out this function:
+Ascorbic acid
Nicotinamide
Riboflavin
Biotin
Adenosine triphosphate

86. Name the enzyme class, whose structure often contains vitamin PP (its derivatives NAD or NADP):
+Oxidoreductases
Hydrolases
Ligases
Isomerases
Lyases

87. There is the osteoporosis in the patient with chronic renal failure. What vitamin’s metabolism infringement promotes this disorder?
+Vitamin D

Vitamin E
Vitamin A
Vitamin K
Vitamin K