After sprinting untrained people feel muscular pain as a result of lactate accumulation. I may be connected with intensification of the following biochemical process:

\{=\text{Glycolysis} \sim \text{Glyconeogenesis} \sim \text{Pentose-phosphate cycle} \sim \text{Lipogenesis} \sim \text{Glycogenesis}\}

What vitamin deficiency leads to both disorder of reproductive function and distrophy of skeletal muscles?

\{=\text{Vitamin E} \sim \text{Vitamin A} \sim \text{Vitamin K} \sim \text{Vitamin D} \sim \text{Vitamin B}_1\}

Toxic pulmonary edema was reproduced on a laboratory rat by means of ammonium chloride solution. What is the leading pathogenetic factor of this edema?

\{=\text{Increased permeability of capillaries} \sim \text{Increase of venous outflow} \sim \text{Decrease of colloid osmotic pressure} \sim \text{Disorder of neural and humoral regulation} \sim \text{Increase of lymph outflow}\}

A patient has disorder of airways patency at the level of small and middle bronchs. What changes of acid-base balance may take place?

\{=\text{Respiratory acidosis} \sim \text{Respiratory alkcalosis} \sim \text{Metabolic acidosis} \sim \text{Metabolic alkalosis} \sim \text{Acid-base balance won't change}\}

The body temperature of a patient with an infectious disease rises once in two days up to 39,5-40,5°C and stays so for about an hour and then drops to the initial level. What type of fever is it?

\{=\text{Intermittent} \sim \text{Continued} \sim \text{Remittent} \sim \text{Hectic} \sim \text{Atypical}\}

Climbing the mountains at a height of 5000 m climbers started complaining of breath shortness, palpitation, vertigo, ring in the ears. What pathogenetic factor determines the development of these occurrences?

\{=\text{Hypoxemia} \sim \text{Hypokalemia} \sim \text{Decreased oxygen capacity of blood} \sim \text{Lactacidemia} \sim \text{Hypernatremia}\}

A 12 year old boy came home from school and started complaining of headache, sickness, chill, periodical muscle pain, appetite loss, flabbiness. What period of illness are these symptoms typical for?
After a long-lasting and grave illness the blood pressure of a patient fell up to 60/40 mm; he has tachicardia, dyspnea, black-out. How can this state be defined?

\{ Prodroma \\
\sim Latent \\
\sim Incubative \\
\sim High point of illness \\
\sim End of illness \}

A newborn child ill with pylorostenosis has frequent vomiting accompanied by apathy, weakness, muscular hypertonia, sometimes convulsions. What form of acid-base balance disorder has developed?

\{ Nongaseous alkalosis \\
\sim Gaseous alkalosis \\
\sim Gaseous acidosis \\
\sim Metabolic acidosis \\
\sim Excretory acidosis \}

After recovering from epidemic parotiditis a patient began to lose weight, he was permanently thirsty, drank a lot of water, had frequent urination, voracious appetite. Now he has complaints of skin itch, weakness, furunculosis. His blood contains: glucose - 16 mmole/L, ketone bodies - 100 mcmole/L; glucosuria. What disease has developed?

\{ Insulin-dependent diabetes \\
\sim Insulin-independent diabetes \\
\sim Steroid diabetes \\
\sim Diabetes insipidus \\
\sim Malnutrition diabetes \}

A patient dropped into an ice hole, froze in the wind and fell ill. Body temperature rose up to 39,7°C and varied from 39,0°C to 39,8°C. Name the type of the patient's temperature profile?

\{ Febris continua \\
\sim Febris recurrens \\
\sim Febris hectica \\
\sim Febris intermittens \\
\sim Febris remittens \}

A diver who has been staying at the depth of 40 m for a long time fell ill with caisson disease as a result of decompression. The main pathogenetic factor is the following embolism:

\{ Gaseous \\
\sim Air \\
\sim Fat \\
\sim Paradoxical \\
\sim Tissue \}

A 65 year old patient suddenly died. She suffered from thrombophlebitis of deep veins of shin. Autopsy revealed: trunk and bifurcation of pulmonary artery contain red loose masses with dull corrugated surface. What pathological process did the morbid anatomist reveal in pulmonary artery?
Skin samples of a patient with bronchial asthma revealed allergen sensitization of poplar fuzz. What factor of immune system plays the main part in development of this immunopathological state? 

\{ IgE, IgM, Sensitized T-lymphocytes \}

A patient with insulin-dependent diabetes had an insulin injection. Some time later he felt weakness, irritability, excessive sweating. What is the main reason of these disorders? 

\{ Carbohydrate starvation of brain, Intensified glycogenolysis, Intensified ketogenesis, Intensified lypogenesis, Reduced glyconeogenesis \}

For the purpose of disinfection of nonmetallic surgical instruments the formaldehyde solution was used. What group does this anticeptic preparation belong to according to its chemical structure? 

\{ Aliphatics, Aromatics, Alcohols, Halogenated compounds, Detergents \}

A patient with inflammation of trigeminal nerve has been having progressive paradontitis for some years. What factor is the most important for parodontitis development? 

\{ Neurodistrophic disorders, Low activity of leukocytic elastase, Poor formation of immunoglobulins, Increased tone of vagus nerve, Low activity of kallikrein-kinin system \}

Potassium cyanide that is a poison came into a patient's organism and caused death a few minutes after it. The most probable cause of its toxic effect was abnormal activity of: 

\{ Cytochrome oxidase, Catalase, ATP-synthetase, NADP-H-dehydrogenase, Haemoglobin synthesis \}

Hydrocyanic acid and cyanides are the most violent poisons. According to the dose the death follows after a few seconds or minutes. The death is caused by the inhibited activity of the following enzyme: 

\{ Cytochrome oxidase, Acetylcholinesterase, ATP-synthetase \}
A newborn has signs of dyspepsia after milk feeding. Symptoms of dyspepsia disappear when milk is substituted for glucose solution. The newborn has low activity of the following enzyme:

\{=Lactase
~Invertase
~Maltase
~Amylase
~Isomaltase\}

A married couple applied to the genetic consultation in order to consult about their child with multiple abnormalities (microcephaly, idiocy etc). The woman has had an illnesses during her pregnancy but she didn’t take any teratogens or mutagens. The parents and the child’s karyotype is normal. Anamnesis study revealed that the family kept a cat. What gravidic disease caused the child’s abnormalities?

\{=Toxoplasmosis
~Dysentery
~Trichomoniasis
~Balantidiasis
~Leishmaniasis\}

As a result of improper feeding an infant got full-blown diarrhea. One of its main consequences is excretion of large amount of sodium bicarbonate. What form of acid-base balance disturbance is it?

\{=Excretory acidosis
~Metabolic alkalosis
~Respiratory alkalosis
~Acid-base balance won’t be disturbed
~Respiratory acidosis\}

After sprinting untrained people feel muscular pain as a result of lactate accumulation. It may be connected with intensification of the following biochemical process:

\{=Glycolysis
~Lipogenesis
~Glycogenesis
~Glyconeogenesis
~Pentose-phosphate cycle\}

What vitamin deficiency leads to both disorder of reproductive function and distrophy of skeletal muscles?

\{=Vitamin E
~Vitamin K
~Vitamin B1
~Vitamin D
~Vitamin A\}

Toxic pulmonary edema was reproduced on a laboratory rat by means of ammonium chloride solution. What is the leading pathogenetic factor of this edema?

\{=Increased permeability of capillars
~Disorder of neural and humoral regulation
~Increase of lymph outflow
~Increase of venous outflow
A pregnant women developed severe toxemia with exhausting recurrent vomiting throughout a day. By the end of the day she developed tetanic convulsions and bodily dehydration. The described changes were caused by the following type of acid-base disbalance:

- Nongaseous excretory alkalosis
- Gaseous acidosis
- Nongaseous excretory acidosis
- Nongaseous metabolic acidosis
- Gaseous alkalosis

After a diver had dived to a depth of 60 meters he got the following symptoms of CNS dysfunction: anxiety, euphoria, lack of attention, professional errors. These symptoms are associated with neurons being under a toxic effect of:

- Nitrogen
- Ammonia
- Lactate
- Oxygen
- Carbon dioxide

A patient has disorder of airways patency at the level of small and middle bronchs. What changes of acid-base balance may take place?

- Respiratory acidosis
- Metabolic alkalosis
- Acid-base balance wont change
- Respiratory alkalosis
- Metabolic acidosis

The body temperature of a patient with an infectious disease rises once in two days up to 39,5-40,5°C and stays so for about an hour and then drops to the initial level. What type of fever is it?

- Intermittent
- Hectic
- Atypical
- Continued
- Remittent

A patient with periodontitis has developed gingival edema. The gums are of dark red colour. What local circulation disorder prevails in the gums of the patient?

- Venous hyperemia
- Thrombosis
- Embolism
- Arterial hyperemia
- Ischemia

To prevent the transplant rejection after organ transplantation it is required to administer hormonotherapy for the purpose of immunosuppression. What hormones are used for this purpose?

- Glucocorticoids
- Mineralocorticoids
- Catecholamines
- Thyroid
- Sexual hormones
Climbing the mountains at a height of 5000 m climbers started complaining of breath shortness, palpitation, vertigo, ring in the ears. What pathogenetic factor determines the development of these occurrences?

\{= \text{Hypoxemia} \\
- \text{Hypokalemia} \\
- \text{Lactacidemia} \\
- \text{Hypernatremia} \\
- \text{Decreased oxygen capacity of blood}\}

A 45 year old patient was taken to the hospital by an emergency team with serious cranial trauma in shock condition. Objectively: unconscious, skin is pale, body temperature- 35°C, low muscular tonus, reflexes are absent, pulse is rapid and weak, AP- 50/30 mm Hg. What clinical shock stage is it?

\{= \text{Terminal stage} \\
- \text{Erectile stage} \\
- \text{Inhibition stage} \\
- \text{Torpid stage} \\
- \text{Excitement stage}\}

A teenager had his tooth extracted under novocain anaesthesia. 10 minutes later he presented with skin pallor, dyspnea, hypotension. When this reaction is developed and the allergen achieves tissue basophils, it reacts with:

\{= \text{IgE} \\
- \text{IgA} \\
- \text{IgM} \\
- \text{T-lymphocytes} \\
- \text{IgD}\}

A 12 year old boy came home from school and started complaining of headache, sickness, chill, periodical muscle pain, appetite loss, flabbiness. What period of illness are these symptoms typical for?

\{= \text{Prodromal} \\
- \text{Latent} \\
- \text{High point of illness} \\
- \text{End of illness} \\
- \text{Incubative}\}

Examination of experimental rats that have been getting only carbohydrate feed for a long time revealed accumulation of water in tissues. What is the leading pathogenetic mechanism of edema development?

\{= \text{Hypooncotic} \\
- \text{Hyperosmolar} \\
- \text{Dysregulatory} \\
- \text{Membranogenic} \\
- \text{Lymphogenous}\}

A man who took part in disaster-management at a nuclear power plant had hemorrhagic syndrome at the same time with acute radiation sickness. What is the most important thing for the pathogenesis of this syndrome?

\{= \text{Thrombocytopenia} \\
- \text{High activity of fibrinolysis factors} \\
- \text{Destructed structure of vessel walls}\}
High activity of anticoagulative blood system
Low activity of anticoagulative blood system

After a long-lasting and grave illness the blood pressure of a patient fell up to 60/40 mm; he has tachicardia, dyspnea, black-out. How can this state be defined?
{Preagonry
Shock
Apparent death
Agony}

A newborn child ill with pylorostenosis has frequent vomiting accompanied by apathy, weakness, muscular hypertonia, sometimes convulsions. What form of acid-base balance disorder has developed?
{Nongaseous alkalosis
Gaseous acidosis
Gaseous alkalosis
Metabolic acidosis
Excretory acidosis}

A 10-year-old child cut his leg with a piece of glass and was sent to a clinic for an anti-tetanus serum injection. In order to prevent the development of anaphylactic shock the Besredka desensitisation method was applied. What mechanism underlies this method?
{Binding to IgE fixed to mast cells
Binding of IgE receptors on mast cells
Stimulation of the immunological antigen tolerance
Inhibited synthesis of mast cells mediators
Stimulation of antigen-specific IgG2 synthesis}

After recovering from epidemic parotiditis a patient began to lose weight, he was permanently thirsty, drank a lot of water, had frequent urination, voracious appetite. Now he has complaints of skin itch, weakness, furunculosis. His blood contains: glucose - 16 mmole/L, ketone bodies - 100 mcmole/L; glucosuria. What disease has developed?
{Insulin-dependent diabetes
Malnutrition diabetes
Steroid diabetes
Insulin-independent diabetes
Diabetes insipidus}

A patient dropped into an ice hole, froze in the wind and fell ill. Body temperature rose up to 39,7°C and varied from 39°C to 39,8°C. Name the type of the patient's temperature profile?
{Febris continua
Febris hectica
Febris recurrens
Febris intermittens
Febris remittens}

A woman with intractable vomiting was admitted to the infectious disease ward. What changes of water-salt metabolism are likely to be observed?
{Hypo-osmolar dehydration
Hyperosmolar dehydration
Iso-osmolar dehydration
A 65 year old patient suddenly died. She suffered from thrombophlebitis of deep veins of shin. Autopsy revealed: trunk and bifurcation of pulmonary artery contain red loose masses with dull corrugated surface. What pathological process did the morbid anatomist reveal in pulmonary artery?

{Thromboembolism
Fat embolism
Tissue embolism
Thrombosis
Foreign body embolism}

Skin samples of a patient with bronchial asthma revealed allergen sensitization of poplar fuzz. What factor of immune system plays the main part in development of this immunopathological state?

{IgE
IgM
IgD
Sensitized T-lymphocytes
~}

A patient with insulin-dependent diabetes had an insulin injection. Some time later he felt weakness, irritability, excessive sweating. What is the main reason of these disorders?

{Carbohydrate starvation of brain
Reduced glyconeogenesis
Intensified ketogenesis
Intensified glycogenolysis
Intensified lipogenesis}

A patient with inflammation of trigeminal nerve has been having progressive paradontitis for some years. What factor is the most important for parodontitis development?

{Neurodistrophic disorders
Low activity of kallikrein-kinin system
Poor formation of immunoglobulins
Low activity of leukocytic elastase
Increased tone of vagus nerve}

During a prophylactic medical examination a 7-year-old boy was diagnosed with daltonism. His parents are healthy and have normal colour vision, but his grandfather on his mother’s side has the same abnormality. What is the type of the abnormality inheritance?

{Recessive, sex-linked
Autosomal dominant
Semidominance
Dominant, sex-linked
Autosomal recessive}

12-year-old teenager has significantly put off weight within 3 months; glucose concentration rose up to 50 millimole/L. He fell into a coma. What is the main mechanism of its development?

{Hyperosmolar
Ketonemic
Hypoglycemic
Lactacidemic}
A patient was stung by a bee. Examination results: his left hand is hot, pink and edematous, there is a big blister on the spot of the sting. What is the leading mechanism of edema development?

- Increased vascular permeability
- Vascular damage caused by the sting
- Reduction of osmotic pressure of tissue
- Reduction of oncotic pressure of tissue
- Reduced blood filling of vessels

A surgeon used novocaine as an anaesthetic during surgical manipulations. 10 minutes after it the patient became pale, he got dyspnea and hypotension. What type of allergic reaction is it?

- Anaphylactic
- Immune complex
- Cytotoxic
- Stimulating
- Cell-mediated

Examination of a patient revealed glycosuria and hyperglycemia. He complains of dry mouth, itchy skin, frequent urination, thirst. He has been diagnosed with diabetes mellitus. What is the cause of polyuria in this patient?

- Increased urine osmotic pressure
- Increased filtration pressure
- Decreased plasma oncotic pressure
- Decreased cardiac output
- Increased plasma oncotic pressure

Hydrocyanic acid and cyanides are the most violent poisons. According to the dose the death follows after a few seconds or minutes. The death is caused by the inhibited activity of the following enzyme:

- Cytochrome oxidase
- ATP-synthetase
- Methemoglobin reductase
- Catalase
- Acetylcholinesterase

A typical symptom of cholera is great loss of water and sodium ions. What mechanism underlies development of diarrhea in this case?

- Activation of adenylate cyclase of enterocytes
- Inhibition of vasopressin synthesis in hypothalamus
- Increased corticotropin synthesis
- Increased secretion of renin by the cells of renal arterioles
- Aldosterone oxidation in adrenal cortex

A patient with enteritis accompanied with intense diarrhea has reduced quantity of water in the extracellular space and increased quantity of water inside the cells as well as low blood osmolarity. Name this disorder of water-electrolytic metabolism:

- Hyposmolar hypohydration
- Osmolar hypohydration
- Hyperosmolar hyperhydration
- Hyposmolar hyperhydration
- Hyperosmolar hypohydration
It is known that patients with diabetes mellitus are more subject to inflammative processes, they have low regeneration and slower wound healing. What is the reason for this?

- Decrease in protheosynthesis
- Accelerated gluconeogenesis
- Intensification of catabolism
- Decrease in lipolysis
- Increase in lipolysis

A patient was admitted to the infectious diseases department. His skin was dry, with low turgor; he had rice-water stool. The patient was diagnosed with cholera. This disease is ordinarily accompanied by the following disorder of water-electrolytic balance:

- Isoosmotic hypohydration
- Hypoosmotic hypohydration
- Hyperosmotic hyperhydration
- Hyperosmotic hypohydration
- Hyposmotic hyperhydration

Prophylactic examination of a patient revealed hyperglycemia, ketonuria, polyuria, glycosuria. What form of acid-base balance disorder is the case?

- Metabolic acidosis
- Nongaseous acidosis
- Gaseous acidosis
- Gaseous alkalosis
- Metabolic alkalosis

As a result of a trauma a patient has developed traumatic shock that led to the following disorders: AP is 140/90 mm Hg, Ps is 120 bpm. The patient is fussy, talkative, pale. Such state relates to the following shock phase:

- Erectile
- Terminal
- Latent period
- Torpid

A patient consulted a dentist about a lesion of his oral mucosa. He was diagnosed with herpetic stomatitis. Which of the following drugs will have an effect on etiotropic factor?

- Acyclovir
- Levamisole
- Furacilinum
- Dimedrol
- Paracetamol

Examination of an 18-year-old girl revealed the following features: ovarian hypoplasia, broad shoulders, narrow hips, shortening of the lower extremities, webbed neck. Mental development is normal. The patient has been diagnosed with Turner’s syndrome. What chromosomal abnormality does this patient have?

- Monosomy X
- Trisomy X
- Trisomy 13
- Trisomy 18
- Nullisomy X
Mother and father are healthy. Mother underwent amniocentesis for fetal karyotyping. The fetal karyotype turned out to be 45, XO. What syndrome can be expected in a newborn baby?

- Turner's
- Edwards’
- Patau’s
- Cri du chat
- "Superwoman"

Genealogical study of a family with hereditary enamel hypoplasia has revealed that the disease occurs in every generation. In women, the anomaly occurs more frequently than in men. Male patients only pass this trait to their daughters. What type of inheritance takes place in this case?

- X-linked dominant
- Autosomal dominant
- Autosomal recessive
- Y-linked
- X-linked recessive

A female patient with toxemia of pregnancy has hypersalivation resulting in a daily loss of 3-4 liters of saliva. What disorder of water-salt metabolism occurs in such cases?

- Hyperosmolar hypohydration
- Hypoosmolar hypohydration
- Isoosmolar hypohydration
- Hypokalemia
- Hyponatremia

A 28-year-old liquidator of Chernobyl disaster consulted a doctor about marked weakness, skin hemorrhages, diarrhea. Blood test results: ESR- 25 mm/h, RBC- 2, 4 · 10¹²/L, WBC - 2, 2 · 10⁹/L, platelets - 70 · 10⁹/L. What stage of acute radiation sickness are these presentations typical for?

- Manifest illness stage
- Prodromal stage
- Latent stage
- Recovery stage
- Outcome of the disease

A 10-year-old child cut his leg with a piece of glass and was sent to a clinic for an anti-tetanus serum injection. In order to prevent the development of anaphylactic shock, the Besredka desensitization method was applied. What mechanism underlies this method?

- Binding to IgE fixed to mast cells
- Inhibited synthesis of mast cells mediators
- Stimulation of the immunological antigen tolerance
- Stimulation of antigen-specific IgG2 synthesis
- Binding of IgE receptors on mast cells

A 28-year-old patient had been diagnosed with multifragmental fracture of the right hip. On the third day after the injury he began to complain of pain in the right side of chest, difficult respiration. A day later the patient died of progressive heart and respiratory failure. Histological study of pulmonary and cerebral blood vessels revealed orange sudanophilic droplets that completely obstructed the vessels of microvasculature. What complication caused the death of the patient?

- Fat embolism
- Gas embolism
An animal sensitized with tuberculin had been administered tuberculin intraperitoneally. 24 hours later, during laparotomy, the animal was found to have venous congestion and peritoneal edema. Impression smears from the peritoneum contained a large number of lymphocytes and monocytes. What pathological process was detected in the animal?

- Allergic inflammation
- Serous inflammation
- Purulent inflammation
- Fibrinous inflammation
- Aseptic inflammation

As a result of treatment of viral RNA with nitrous acid, UCA triplet mutated to UGA triplet. What kind of mutation occurred?

- Transition
- Nucleotide deletion
- Missense
- Nucleotide insertion
- Inversion

A 36-year-old female patient who has been limiting the number of foodstuffs in her diet for 3 months presents with a decrease in body weight, deterioration of physical and mental health, face edema. These changes may be caused by the deficiency of the following nutrients:

- Proteins
- Vitamins
- Fats
- Carbohydrates
- Micronutrients

During anesthesia of the oral mucosa a 37-year-old patient has had anaphylactic reaction (widespread vasodilation, increased vascular permeability with liquid exiting the blood vessels and penetrating in the tissues). What type of hypersensitivity reaction occurred in the patient?

- Type I (anaphylactic)
- Type II (antibody-dependent)
- Type III (immune complex)
- Type IV (cell cytotoxicity)
- Type V (granulomatosis)

In patients with glycogenolysis, that is von Gierke’s disease, the conversion of glucose-6-phosphate into glucose is inhibited, which is accompanied by the improper breakdown of glycogen in the liver. The cause of this condition is the following enzyme deficiency:

- Glucose-6-phosphatase
- Glycogen phosphorylase
- Glucose-6-phosphate dehydrogenase
- Phosphofructokinase
- Phosphoglucomutase

After arriving in the polar region, researchers from Australia have complained of nervous disorders, loss of appetite, aggravation of chronic diseases for 6 months. What process has been disrupted in extreme conditions?
The surgically excised connective tissue of the deformed mitral valve gives a basophilic reaction when stained with hematoxylin and eosin. When stained with toluidine blue, it turns purple (metachromasia). What changes of the connective tissue can be detected by these reactions?

\[\text{Mucoid edema} \quad \text{Fibrinoid necrosis of connective tissue} \quad \text{Connective tissue edema} \quad \text{Petrification} \quad \text{Hyalinosis}\]

If a trait is determined mostly by genetic factors, the percentage of concordance between the twins is much higher in monozygotic twins than in dizygotic ones. What is the percentage of blood group concordance in monozygotic twins?

\[\text{100\%} \quad \text{75\%} \quad \text{50\%} \quad \text{25\%} \quad \text{0\%}\]

During auscultation a 26-year-old patient was asked to breathe deep. After 10 breaths the patient lost consciousness, which is associated with the development of the following condition:

\[\text{Respiratory alkalosis} \quad \text{Carbon dioxide acidosis} \quad \text{Erythropenia} \quad \text{Polycythemia} \quad \text{Reduced oxygen capacity of blood}\]

A 31-year-old patient has deep caries of the fifth maxillary tooth on the right. Acute purulent inflammation in the region of the tooth apex has developed. There is marked edema with isolated neutrophils in the perifocal tissues and soft tissues of cheek and palate. Diagnose the pathologic process in the soft tissues of cheek and palate:

\[\text{Acute serous inflammation} \quad \text{Acute supplicative periodontitis} \quad \text{Acute supplicative periostitis} \quad \text{Phlegmon} \quad \text{~}\]

A 35-year-old patient complains of pain in the upper jaw, bleeding, a slight loosening of teeth. He has been diagnosed with periodontitis. What is a typical pathological process in this case?

\[\text{Inflammation} \quad \text{Bleeding} \quad \text{Caries} \quad \text{Pain} \quad \text{Redness}\]
A female patient has scalded her hand with boiling water. The affected skin area became red, swollen and painful. This effect is caused by accumulation of the following substance:

- Histamine
- Lysine
- Thiamine
- Glutamine
- Asparagine

Mother had noticed her 5-year-old child's urine to become dark in colour. Bile pigments in urine were not detected. The diagnosis of alkaptonuria was made. What pigment is deficient?

- Homogentisic acid oxidase
- Phenylalanine hydroxylase
- Tyrosinase
- Oxyphenylpyruvate oxidase
- Phenylpyruvate decarboxylase

There are various diseases that cause sharp increase of active oxygen, leading to cell membranes destruction. Antioxidants are used to prevent it from happening. The most potent natural antioxidant is:

- Alpha-tocopherol
- Glucose
- Vitamin D
- Fatty acids
- Glycerol

A patient with liver cirrhosis has been given intravenously 500,0 ml of 5% glucose solution along with other drugs. There is a high risk of the following water-electrolytic balance disruption:

- Hyposmolar hypohydration
- Hyperosmolar hypohydration
- Iso-osmolar hypohydration
- Hyposmolar dehydration
- Hyperosmolar dehydration

A patient has oliguria caused by acute renal failure. What daily amount of urine corresponds with this symptom? A. 100-500 ml B. 1500-2000 ml C. 1000-1500 ml D. 500-1000 ml E. 50-100 ml

A 7-year-old child suffers from acute disease. A pediatrician observed the following during examination: pharynx mucosa is hyperemic, edematous, swollen, cowered with large amount of mucus. Buccal mucosa has whitish discoloured spots. On the next day the child came out in rash with large spots covering the skin of his face, neck and torso. What kind of inflammation causes changes in pharynx mucosa?

- Catarrhal
- Serous
- Sero-fibrinous
- Fibrinous
- Hemorrhagic

A 28-year-old patient had been diagnosed with multifragmental fracture of the right hip. On the third day after the injury he began to complain of pain in the right side of chest, difficult respiration. A day later the patient died of progressive heart and respiratory failure. Histological study of pulmonary and cerebral blood vessels revealed orange sudanophilic droplets that completely obstructed the vessels of microvasculature. What complication caused the death of the patient?

- Fat embolism
A 39-year-old patient has been suffering from gastric ulcer for the last 4 years. Krok 1 Stomatology 2015 7 His condition exacerbates in spring and autumn: he suffers from pain in epigastrium, heartburn, nausea, constipation. What nosological term can be applied to the period between two exacerbations?

{=Pathological state
~Pathological process
~Pathological reaction
~Typical pathological process
~Good health}

A patient at the early stage of diabetes mellitus was found to have polyuria. What is its cause?

{=Hyperglycemia
~Ketonemia
~Hypocholesterolemia
~Hypercholesterolemia
~Hyperkaliemia}

As a result of a trauma a patient has developed traumatic shock. The patient is fussy, talkative, pale. AP- 140/90 mm Hg, Ps-120 bpm. This condition is consistent with the following shock phase:

{=Erectile
~Latent
~Terminal
~Torpid
~}

In Western Europe nearly half of all congenital malformations occur in the children conceived in the period when pesticides were used extensively in the region. Those congenital conditions result from the following influence:

{=Teratogenic
~Carcinogenic
~Malignization
~Mutagenic
~Mechanical}

A 50-year-old patient has been referred for treatment of neck lymphadenitis. His individual penicillin sensitivity was tested. In 30 seconds full-body fever raised in the patient and his arterial blood pressure dropped to 0 mm Hg, followed by cardiac arrest. Resuscitation was unsuccessful. Autopsy revealed acute venous hyperemia of viscera. Histological study revealed mast cells (tissue basocytes) degranulation in the skin (at the area of injections), myocardium and lungs. What kind of hypersensitivity reaction occurred in patient?

{=Anaphylactic
~Delayed-type hypersensitivity
~Complement-mediated cytotoxic
~Immune complex-mediated
~}

After arriving in the polar region, researchers from Australia have complained of nervous disorders,
loss of appetite, aggravation of chronic diseases for 6 months. What process has been disrupted in extreme conditions?
{=Adaptation
~Tolerance
~Tachyphylaxis
~Stress
~Reparation}

Pyrogenal administered to a rabbit, in the course of an experiment, resulted in increase of its body temperature. What substance of those named below acts as a secondary pyrogen that is a part of fever inducing mechanism?
{=Interleukin 1
~Pseudomonas polysaccharide (Piromen)
~Histamine
~Bradykinin
~Immunoglobulin}

Phenylketonuria is a disease caused by a recessive gene that is localized in the autosome. The parents are heterozygous for this gene. They already have two sons with phenylketonuria and one healthy daughter. What is the probability that their fourth child will have the disease too?
{=25%
~0%
~50%
~75%
~100%}

X-chromatin test of somatic cells is used for quick diagnostics of hereditary diseases caused by variations of sex chromosomes number. What is the karyotype of a male, whose cells mostly contain one X-chromatin body?
{=47, XXY
~45, X0
~46, XY
~48, XXXY
~49, XXXXY}

When examining a female patient a doctor observed the following: misshapen auricles, elevated palate, teeth growth disorder; mental retardation; no disruption of reproductive function. Provisional diagnosis is the "super woman" syndrome. Point out the karyotype of this disease.
{=(47, XXX)
~(47, XXY)
~(47, YYY)
~(47, XYY)
~(45, X0)}

The patient’s condition after blood transfusion has been aggravated by posttransfusion shock. Name the type of allergic reaction causing this pathology.
{=Cytotoxic
~Anaphylactic
~Immune complex
~Delayed-type hypersensitivity
~Receptor-mediated}
A patient with gastric juice hypersecretion has been recommended to exclude from the diet rich broths and vegetable infused water. A doctor recommended it, because these food products stimulate production of the following hormone:

\{=\text{Gastrin} \\
-\text{Secretin} \\
-\text{Cholecystokinin} \\
-\text{Somatostatin} \\
-\text{Neurotensin}\}

An oculist detected increased time of darkness adaptation of a patient’s eye. What vitamin deficiency can cause such symptom?

\{=\text{A} \\
-\text{E} \\
-\text{C} \\
-\text{K} \\
-\text{D}\}

A woman has scalded her hand with boiling water. The affected area of her skin became red, swollen and painful. This effect is caused by accumulation of the following substance:

\{=\text{Histamine} \\
-\text{Lysine} \\
-\text{Thiamine} \\
-\text{Glutamine} \\
-\text{Asparagine}\}

There are various diseases that cause sharp increase of active oxygen, thus leading to cell membranes destruction. Antioxidants are used to prevent it from happening. The most potent natural antioxidant is:

\{=\text{α-tocopherol} \\
-\text{Glucose} \\
-\text{Vitamin D} \\
-\text{Fatty acids} \\
-\text{Glycerol}\}

A pregnant woman developed severe toxemia with exhausting recurrent vomiting throughout a day. By the end of the day she developed tetanic convulsions and bodily dehydration. The described changes were caused by the following type of acid-base disbalance:

\{=\text{Nongaseous excretory alkalosis} \\
-\text{Gaseous alkalosis} \\
-\text{Gaseous acidosis} \\
-\text{Nongaseous metabolic acidosis} \\
-\text{Nongaseous excretory acidosis}\}

Due to recurring vomiting a patient has lost significant amount of gastric juice, which led to development of acid-base dysbalance. What type of acid-base dysbalance has developed?

\{=\text{Nongaseous alkalosis} \\
-\text{Gaseous acidosis} \\
-\text{Nongaseous acidosis} \\
-\text{Gaseous alkalosis} \\
-\text{Metabolic acidosis}\}
A 28-year-old patient had been diagnosed with multifragmental fracture of the right hip. On the third day after the injury he began to complain of pain in the right side of the chest, difficult respiration. One day later the patient died of progressive heart and respiratory failure. Histological study of the pulmonary and cerebral blood vessels revealed orange sudanophilic droplets that completely obstructed the vessels of microvasculature. What complication caused the death of the patient?

\{\text{Fat embolism} \quad \text{Gas embolism} \quad \text{Drug-induced embolism} \quad \text{Microbial embolism} \quad \text{Thromboembolism}\}

A woman who had been consuming alcohol excessively during her pregnancy had a child with cleft palate and upper lip. These presentations are indicative of some chromosomal anomalies. What process do they result from?

\{\text{Teratogenesis} \quad \text{Carcinogenesis} \quad \text{Mutagenesis} \quad \text{Phylogenesis} \quad \text{Ontogenesis}\}

What factor results in maximal dilation of the gemonmicirculatory pathway vessels and their increased permeability?

\{\text{Histamine} \quad \text{Endothelin} \quad \text{Vasopressin} \quad \text{Noradrenaline} \quad \text{Serotonin}\}

A patient with diabetes mellitus has been delivered to a hospital unconscious. BP is low, Kussmaul’s respiration is observed, the smell of acetone can be detected from the patient’s mouth. What mechanism is leading in the coma development in this case?

\{\text{Accumulation of ketone bodies in blood} \quad \text{Accumulation of potassium ions} \quad \text{Accumulation of sodium ions} \quad \text{Accumulation of chlorine ions} \quad \text{Accumulation of urea}\}

In Western Europe nearly half of all congenital malformations occur in the children conceived in the period when pesticides were used extensively in the region. Those congenital conditions result from the following influence:

\{\text{Teratogenic} \quad \text{Carcinogenic} \quad \text{Malignization} \quad \text{Mutagenic} \quad \text{Mechanical}\}

A 40-year-old woman suffering from diffuse toxic goiter presents with constant increase of her body temperature. What mechanism results in such clinical presentation?

\{\text{Separation of oxidation and phosphorization in cell mitochondria} \quad \text{Increased breakdown of glycogen in hepatic cells} \quad \text{Increased catabolism of protein in cells}\}
Increased excitability of nerve cells
Increased cell sensitivity to catecholamines

Periodontitis induces development of lipid peroxidation in the periodontal tissues, as well as increase in malondialdehyde and hydrogen peroxide concentration in the oral cavity. Which of the following enzymes provides antioxidant protection?
- Catalase
- Amylase
- Maltase
- Lactase
- Invertase

A victim of an earthquake has been remaining under debris for 7 days without food or water. What type of starvation is it?
- Complete
- Complete with continued hydration
- Quantitative
- Qualitative
- Incomplete

A 50-year-old patient has been referred for treatment of neck lymphadenitis. His individual penicillin sensitivity was tested. In 30 seconds fullbody fever raised in the patient and his arterial blood pressure dropped to 0 mm Hg followed by cardiac arrest. Resuscitation was unsuccessful. Autopsy revealed acute venous hyperemia of viscera. Histological study revealed mast cells (tissue basocytes) degranulation in the skin (at the area of injections), myocardium and lungs. What kind of hypersensitivity reaction occurred in the patient?
- Anaphylactic
- Delayed-type hypersensitivity
- Complement-mediated cytotoxic
- Immune complex-mediated

A 42-year-old woman has been administered propranolol for the ischemic heart disease. Yet she has been found to have a concomitant condition that renders propranolol to be contraindicated. What disease is it?
- Bronchial asthma
- Cholecystitis
- Arterial hypertension
- Duodenal ulcer
- Myasthenia

A man submerged into the ice cold water and died soon as a result of abrupt exposure to cold. In such cases an organism loses heat most intensively by the way of:
- Heat conduction
- Radiation
- Convection
- Heat conduction and radiation
- No correct answer

A woman had been taking synthetic hormones during her pregnancy. Her newborn girl presents with excessive hairiness which has formal resemblance to adrenogenital syndrome. This sign of variability is called:
Ketoacidosis that develops due to accumulation of ketone bodies in blood serum is a primary complication of diabetes mellitus. What acid-base disbalance develops during this condition?

- Metabolic acidosis
- Metabolic alkalosis
- Respiratory acidosis
- Respiratory alkalosis

During auscultation a 26-year-old patient was asked to breathe deep. After 10 breaths the patient lost consciousness, which is associated with the development of the following condition:

- Respiratory alkalosis
- Carbon dioxide acidosis
- Erythropenia
- Polycythemia
- Reduced oxygen capacity of blood

Phenylketonuria is a disease caused by a recessive gene that is localized in an autosome. Parents are heterozygous for this gene. They already have two sons with phenylketonuria and one healthy daughter. What is the probability that their fourth child will have the disease too?

- 25%
- 0%
- 50%
- 75%
- 100%

A doctor examines a 17-year-old girl. The following is detected: pharyngitis, cervical lymphadenopathy, fever. The preliminary diagnosis is infectious mononucleosis. What method of investigation allows to confirm this diagnosis at the disease onset?

- Determining antibodies IgM to Epstein-Barr virus
- Microscopy of blood smear according to Giemsa method
- Determining antibodies IgG to Epstein-Barr virus
- Sabin-Feldman dye test
- Determining the amount of C-reactive Protein

When examining a female patient a doctor observed the following: misshapen auricles, elevated palate, teeth growth disorder; mental retardation; no disruption of reproductive function. Provisional diagnosis is the "super woman" syndrome. Point out the karyotype of this disease:

- (47, XXX)
- (47, XXY)
- (47, YYY)
- (47, XYY)
- (45, X0)

A patient has been administered conduction anesthesia with novocaine in preparation for tooth extraction. After the anesthesia administration the patient developed swelling and hyperemia around the injection site, skin itch, general fatigue, motor agitation. Name the developed complication:
A woman is diagnosed with Turner’s syndrome (karyotype 45, X0). How many autosomal pairs would her somatic cells contain?

1. 22
2. 24
3. 23
4. 44
5. 45

A diet must include fats. Fats perform plastic function in an organism due to their inclusion in:

1. Cell membranes
2. Cell ion channel
3. Cell ion pumps
4. Cell end-organs
5. Glycocalyx

A 30-year-old man addressed a doctor with complaints of enlarged submandibular lymph nodes. Anamnesis states that the patient previously had been treated for acute apical periodontitis of the 36th and 46th teeth. Histologically the following could be detected in the removed lymph node: hyperemia, edema, increased amount of plasmocytes and plasmablasts in the medullary area and germinal centers of follicles. What can cause such changes in lymph nodes?

1. Antigenic stimulation
2. Immunodeficiency state
3. Metastasis of a malignant tumor
4. Granulomatous inflammation
5. Lymphoma

A 12-year-old patient suffering from acute leukemia presents with fever up to 39.8°C, acute pain in the throat. Examination of the oral cavity has revealed swollen tonsils, their surface is covered in deep lesions with uneven margins, numerous petechial hemorrhages in the pharyngeal mucosa and around the tonsils. Determine the type of tonsillitis that complicates the disease progress in this case:

1. Necrotic
2. Catarrhal
3. Fibrinous
4. Lacunar
5. Purulent

Heterozygous parents with A (II) and B (III) blood groups according to AB0 system gave birth to a child. What is the probability of the child having 0 (I) blood group?

1. 50%
2. 0%
3. 100%
4. 75%
5. 25%

An oculist has detected increased time of darkness adaptation of a patient’s eye. What vitamin
After anaesthetic application during tooth extraction the patient developed marked soft tissue edema of the upper and lower jaw, skin rash on the face, reddening, and itching. What pathological process results in such reaction to the anaesthetic?
- Disturbed lymph drainage
- Allergy
- Inflammation
- Toxic action of a drug
- Circulatory deficiency

After introduction of adrenaline the patient’s blood glucose level increased. It is caused by intensified:
- Glycolysis in the skeletal muscles
- Glycolysis in the liver
- Glycogenolysis in the liver
- Glycogen synthesis
- Glycogenolysis in the muscles

A 20-year-old young man, who started to train systematically in athletics, has the following resting-state blood values: erythrocytes — 5.5×10^12/l, reticulocytes — 12%, hemoglobin — 160 g/l, color index — 1.03. Such blood values indicate erythropoiesis stimulation due to the following occurring in the process of his training:
- Physical activity
- Hypercapnia
- Hypoxemia
- Hyperventilation
- Hyperglycemia

In the armpits of a patient there are small (1-1.5 mm), dorsoventrally flattened, wingless, blood-sucking insects. Their larvae have been developing in the armpits as well. What disease is caused by these insects?
- Relapsing fever
- Phthiriasis
- Chagas’ disease
- Sleeping sickness
- Plague

In student, who unexpectedly met his girlfriend, developed an increase in systemic arterial pressure. This pressure change was caused by the intensified realization of the following reflexes:
- Conditioned parasympathetic
- Unconditioned parasympathetic
- Unconditioned sympathetic
- Conditioned sympathetic
- Conditioned sympathetic and parasympathetic

A patient with diabetes mellitus has been delivered to a hospital unconscious. BP is low, Kussmaul’s
respiration is observed, the smell of acetone can be detected from the patient’s mouth. What mechanism is leading in the coma development in this case?

{ = Accumulation of potassium ions
~ Accumulation of chlorine ions
~ Accumulation of urea
~ Accumulation of ketone bodies in blood
~ Accumulation of sodium ions
}

A patient complains of toothache. On examination he has been diagnosed with pulpitis. Which factor played the main pathogenic role in the development of pain syndrome in this case?

{ = Vasospasm
~ Activation of one of the complement system components
~ Interleukin action
~ Increased intratissular pressure in the dental pulp
~ Inadequate stimulation of the mandibular nerve branch
}

A victim of an earthquake has been remaining under debris for 7 days without food or water. What type of starvation is it?

{ = Incomplete
~ Complete
~ Quantitative
~ Complete with continued hydration
~ Qualitative
}

A 42-year-old woman, who has been keeping to a vegetarian diet for a long period of time, consulted a doctor. Examination revealed negative nitrogen balance in the patient. What factor is the most likely cause of such a condition?

{ = Excessive amount of fats in the diet
~ Insufficient amount of dietary fiber
~ Insufficient amount of proteins in the diet
~ Insufficient amount of fats in the diet
~ Decreased rate of metabolic processes
}

Cytogenetic analysis allowed to determine the patient’s karyotype — 47, XY, +21/46, XY. Name this condition:

{ = Genocopy
~ Phenocopy
~ Deletion
~ Translocation
~ Mosaicism
}

A patient with acute bronchitis has been prescribed sulfanilamide drugs for treatment. In an hour after administration the patient developed itching and vesicles filled with light transparent liquid on the face, palms and soles. Name the mechanism of immune response:

{ = Reaginic reaction
~ Cell cytotoxicity
~ Immune complex-mediated hypersensitivity
~ Antibody-mediated cytolysis
}
A 68-year-old man, who had been suffering from essential hypertension for a long time, was delivered to a resuscitation unit with hemiplegia. The patient died after 7 hours. On autopsy: in the right cerebral hemisphere there is a cavity 5x5 cm in size with uneven margins, filled with dark red blood clots. What cerebral circulation disorder developed in the patient?

{Thrombosis
Hemorrhagic infiltration
Hematoma
Petechial hemorrhage
Local venous hyperemia}

What factor results in the highest energy expenditure under the normal vital activity conditions?

{Mental work
Food rich in calories
Increase of environment temperature
Decrease of environment temperature
Action of skeletal muscles}

During thermal stimulation it is characteristic of oral cavity blood vessels to:

{Respond with constriction to hot stimuli
Respond depending on the vessel functional condition
Present no response towards thermal stimuli
Respond with constriction to cold stimuli
Dilate in response to both cold and hot stimuli}

Deaf parents with genotypes DDee and ddEE gave birth to a girl with normal hearing. Specify the form of D and E genes interaction:

{Polymery
Overdominance
Complete dominance
Epistasis
Complementary interaction}

During postmortem examination of a 9-month-old infant it was determined that the cause of death was cerebral edema. What water-electrolyte imbalance is the most likely cause of the edema development?

{Isoosmolar hyperhydration
Hyperosmolar dehydration
Hyperosmolar hyperhydration
Isoosmolar dehydration
Hypoosmolar hyperhydration}

An accident had resulted in a 65-year-old man drowning in a lake. Resuscitation measures allowed to restore his respiration and cardiac function. What factor prolongs the period of apparent death?

{Hyperthermia
Elderly age
Hypothermia
Prolonged preagony and agony}

A girl is diagnosed with primary microcephaly that is a monogenic autosomal recessive disease. Her natural brother develops normally. What genotypes do the parents of these children have?

{aa x aa}
High-altitude dwellers typically demonstrate chronically intensified respiration and decreased pCO2 value of blood. What mechanism is leading in the compensation of their asid-base imbalance?

\{- Decreased pulmonary ventilation
- Increased ammonia excretion with urine
- Decreased renal reabsorption of bicarbonate
- Increased pulmonary ventilation\}

A 50-year-old man came to a hospital with complaints of memory disorders, painful sensations along the nerve trunks, decreased mental ability, circulatory disorders and dyspepsia. Anamnesis states excessive alcohol consumption. What vitamin deficiency can result in such symptoms?

\{- Retinol
- Niacin
- Thiamine
- Calciferol
- Riboflavin\}

A patient presents with lymphocytic-monocytic leukogram pattern. It is characteristic of:

\{- Chronic radiation sickness
- Acute inflammatory process
- Allergies
- Chronic inflammatory process\}

A patient has undergone recurring blood tests that revealed sharp fluctuations of glucose content: significant increase in absorptive state and significant decrease in postabsorptive state. What pathology can be the cause of it?

\{- Diabetes mellitus type II
- Diabetes mellitus type I
- Aglycogenosis (glycogenosis type 0)
- Acromegaly
- Endemic goiter\}

Ulcer disease of the duodenum has been detected in a 38-year-old man. A treatment was prescribed after which the patient considered himself to be healthy. However, half a year later the patient developed pain in the epigastrium, heartburn, and insomnia. The patient’s condition can be estimated as a:

\{- Latent period
- Pathological state
- Remission
- Development of chronic disease
- Relapse\}

Autosomal nondisjunction had occurred in a woman during meiosis. An ovum with the third copy of the 18th chromosome was formed. The ovum was impregnated by normal spermatozoon. The resulting child will suffer from:

\{- Down’s syndrome\}
Autopsy of a 58-year-old man, who had been suffering from rheumatic heart disease and died of cardiopulmonary decompensation, revealed gray diffuse film- and fiber-shaped coating in his pericardium. What type of inflammation is characteristic of this pericarditis?

- Diphtheritic fibrinous
- Suppurative
- Serous
- Hemorrhagic
- Croupous fibrinous

A patient was diagnosed with a monogenic hereditary disease. Name this disease:

- Hemophilia
- Hypertension
- Peptic ulcer disease of the stomach
- Poliomyelitis
- Hymenolepiasis

A diabetus mellitus patient developed unconsciousness and convulsions after administration of insulin. What result of blood glucose analysis is the most likely in this case?

- 1.5 mmol/L
- 3.3 mmol/L
- 8 mmol/L
- 10 mmol/L
- 5.5 mmol/L

A pregnant woman developed severe toxemia with exhausting recurrent vomiting throughout a day. By the end of the day she developed tetanic convulsions and dehydration. The described changes were caused by the following type of acid-base imbalance:

- Nongaseous excretory alkalosis
- Gaseous alkalosis
- Gaseous acidosis
- Nongaseous metabolic acidosis
- Nongaseous excretory acidosis

Often the cause of secondary immunodeficiency is an infectious affection of an organism, when agents reproduce directly in the cells of immune system and destroy them. Specify the diseases, during which the described above occurs:

- Infectious mononucleosis, AIDS
- Tuberculosis, mycobacteriosis
- Poliomyelitis, viral hepatitis type A
- Dysentery, cholera
- Q fever, typhus

A patient presents with disturbed patency of the airways at the level of small and medium bronchial tubes. What acidbase imbalance can the patient develop?

- Respiratory acidosis
- Respiratory alkalosis
- Metabolic acidosis
A woman had been taking synthetic hormones during her pregnancy. Her newborn girl presents with excessive hairiness which has formal resemblance to adrenogenital syndrome. This sign of variability is called:
- Phenocopy
- Mutation
- Recombination
- Heterosis
- Replication

A 42-year-old woman, who has been keeping to a vegetarian diet for a long period of time, consulted a doctor. Examination revealed negative nitrogen balance in the patient. What factor is the most likely cause of such a condition?
- Insufficient amount of proteins in the diet
- Insufficient amount of dietary fiber
- Excessive amount of fats in the diet
- Insufficient amount of fats in the diet
- Decreased rate of metabolic processes

In hot weather the bus passengers asked to open the roof hatches. What way of heat transfer is activated in this situation?
- Convection
- Conduction
- Radiation
- Conduction and radiation
- Sweat evaporation

At the end of winter a student, who had been lately in the state of nervous tension, developed a case of URTI after overexposure to cold. What is the case of this disease?
- Pathogenic agent
- Nervous stress
- Overexposure to cold
- Improper diet
- Hypovitaminosis

A patient was diagnosed with Klinefelter’s syndrome. The patient with this disease will have the karyotype (47, XXY). How many sex chromosomes are in this complement?
- Three
- Zero
- One
- Two
- Forty four

30 minutes after dental treatment the patient developed red itching spots on the face and oral mucosa. The patient was diagnosed with urticaria. What bioactive substance with vasodilating and pruriginous effect is produced during this type of allergic reaction?
- Histamine
- Prostaglandin E2
- Leukotriene B4
- Interleukin-1
A patient has been administered conduction anesthesia with novocaine in preparation for tooth extraction. After the anesthesia administration the patient developed swelling and hyperemia around the injection site, skin itch, general fatigue, motor agitation. Name the developed complication:
{=Allergy
~Idiosyncrasy
~Tachyphylaxis
~Drug dependence
~Inflammation}

A 16-year-old girl, who has been starving herself for a long time to lose weight, developed an edema. This phenomenon is mainly caused by:
{=Hypoproteinemia due to protein synthesis disturbance
~Hypoglycemial due to glycogen synthesis disturbance
~Venous congestion and increased venous pressure
~Deceleration of glomerular filtration rate
~Decreased production of vasopressin in the hypothalamus}

A woman is diagnosed with Turner’s syndrome (karyotype 45, X0). How many autosomal pairs would her somatic cells contain?
{=22
~24
~23
~44
~45}

A 50-year-old man came to a hospital with complaints of memory disorders, painful sensations along the nerve trunks, decreased mental ability, circulatory disorders and dyspepsia. Anamnesis states excessive alcohol consumption. What vitamin deficiency can result in such symptoms?
{=Thiamine
~Niacin
~Retinol
~Calciferol
~Riboflavin}

Differentiation of B-lymphocytes into plasma cells leads to synthesis of immunoglobulins that ensure specific immune response of the body. Differentiation of B-lymphocytes takes place in the following organ of immune system:
{=Tonsils
~Red bone marrow
~Liver
~Thymus
~Thyroid gland}
A patient who takes a blocker of membrane cytoreceptors of efferent conductor synapses of autonomic nervous system complains about dry mouth. What receptors are blocked?
{=Muscarinic cholinoreceptors
~Nicotinic cholinoreceptors
~H₂-receptors
~α-adrenoreceptors
~β-adrenoreceptors
}

Examination of a patient revealed enlargement of some body parts (jaw, nose, ears, feet, hands), but body proportions were conserved. It might be caused by intensified secretion of the following hormone:
{=Somatotropin
~Somatostatin
~Tetraiodothyronine
~Triiodothyronine
~Cortisol
}

15 minutes after a car accident examination of a 35 year old man revealed massive injury of lower extremities without serious external loss of blood. The victim is in excited state. What component of pathogenesis of traumatic shock is basic and requires urgent correction?
{=Pain
~Acute renal insufficiency
~Intoxication
~Cardiac function disorder
~Internal loss of plasma
}

A 23 year patient was admitted to the hospital in grave condition with craniocerebral trauma. His respiration is characterized by a spasmodic long inspiration interrupted by a short expiration. What respiration type is it typical for?
{=Apneustic
~Gasping
~Kussmaul's respiration
~Cheyne-Stokes respiration
~Biot's respiration
}

Two days after myocardial infarction a patient had a sudden systolic pressure decrease up to 60 mm, tachycardia up to 140/min, dyspnea; the patient lost consciousness. What mechanism is principal for the shock pathogenesis?
{=Decrease of cardiac volume
~Intoxication
~Decrease of circulating blood volume
~Paroxysmal tachycardia
~Anaphylactic reaction
}

After a psychoemotional stress a 48 year old patient had a sudden attack of acute heart pain with irradiation to the left hand. Nitroglycerine suppressed pain in 10 minutes. What pathogenetic mechanism is principal for the pain development?
{=Spasm of coronary vessels
~Dilatation of peripheral vessels
~Coronary vessel occlusion
~Embarrassement of coronary vessels
~Increased need of myocardium in oxygen}
A 40 year old man who took part in disaster-management at a nuclear power plant fell sick with paradontitis. What etiological agent is the most important for the development of this pathology?

- Emotional stress
- Iron deficit
- Malnutrition
- Increased load of dentoalveolar apparatus
- Streptococcus

A woman after labor lost 20 kg of body weight, her hair and teeth fall out, she has muscle atrophy (hypophysial cachexia). Synthesis of what hypophysis hormone is disturbed?

- Somatotropic
- Corticotrophic
- Thyreotropic
- Gonadotropic
- Prolactin

Damage of one of the reactors at a nuclear power plant resulted in runout of radioactive products. People who were present in the high-radiation area got approximately 250-300 R. They were urgently taken to the hospital. What blood changes will be typical for this period?

- Lymphopenia
- Leukopenia
- Anemia
- Thrombocytopenia
- Neutropenia

A year after subtotal stomach resection on account of ulcer of lesser curvature the following blood changes were revealed: anemia, leukocytopenia and thrombocytopenia, color index - 1,3, megaloblasts and megalocytes. What factor deficiency caused the development of this pathology?

- Castle's factor
- Hydrochloride acid
- Mucin
- Pepsin
- Gastrin

A 45 year old patient was taken to the hospital by an emergency team with serious cranial trauma in shock condition. Objectively: unconscious, skin is pale, body t° 35,0°C, low muscular tonus, reflexes are absent, pulse is rapid and weak, AP 50/30 mm Hg. What clinical shock stage is it?

- Terminal stage
- Erectile stage
- Excitement stage
- Inhibition stage
- Torpid stage

After traumatic tooth extraction a patient complains of a severe dull pain without accurate localization in his gum, body temperature rise up to 37,5°C. He was diagnosed with alveolitis. What type of pain does the patient have?

- Protopathic
- Epicritic
- Visceral
- Referred
- Phantom
After poisoning with an unknown drug a 37 year old patient has stereotypical face muscle contractions that imitate blinking and squinting. What form of motor function disorder of nervous system is it?

={Hyperkinesia
~Hypokinesia
~Akinesia
~Ataxy
~}

Rabbits lived on food with addition of cholesterol. Five months later the atherosclerotic aorta changes were revealed. Name the main cause of atherogenesis in this case:

={Exogenous hypercholesterolemia
~Overeating
~Hypodynamia
~Endogenous hypercholesterolemia
~}

A patient with primary nephrotic syndrome has the following content of whole protein: 40 g/l. What factor caused hypoproteinemia?

={Proteinuria
~Transition of protein from vessels to tissues
~Reduced protein synthesis in liver
~Increased proteolysis
~Disturbance of intestinal protein absorption
~}

A man who took part in disaster-management at a nuclear power plant had hemorrhagic syndrome at the same time with acute radiation sickness. What is the most important thing for the pathogenesis of this syndrome?

={Thrombocytopenia
~Destructed structure of vessel walls
~High activity of fibrinolysis factors
~High activity of anticoagulative blood system
~Low activity of anticoagulative blood system
~}

Four months ago a 43 year old patient had a traumatic amputation of his lower extremity. Now he complains of sensing the amputated extremity and having constantly grave, sometimes unbearable pain in it. What type of pain does he have?

={Phantom
~Causalgia
~Neuralgia
~Thalamic
~Reflex
~}

In crisis period a 14 year old child ill with diphtheria has AP- 70/50 mm Hg accompanied by abrupt fall in temperature and tachycardia. What form of vascular tone disturbance is it?

={Acute hypotension
~Chronic hypotension
~Vegetovascular dystonia
~Essential arterial hypotension
~}
A patient ill with jaundice has increased content of conjugated bilirubin and bile acids in blood, no stercobilinogen in urine. What jaundice are these symptoms typical for?
{=Obstructive
~Hepatic
~Hepatocellular
~Hemolytic
~Cythemolytic}

A 19 year old patient was diagnosed with chronic acquired hemolytic anemia. What is the leading pathogenetic mechanism of this pathology's development?
{=Autoimmune hemolysis
~Toxic hemolysis
~Intracellular hemolysis
~Hyposmolarity of plasm
~Osmotic hemolysis}

A 56 year old man was taken to the hospital with complaints of general weakness, pain and burning in the region of tongue, extremity numbness. In the past he had resection of cardiac part of ventricle. Blood test: Hb- 80 g/L; RBC- 2,0 \times 10^{12}/L; colour index of blood- 1,2; leukocytes - 3,5 \times 10^{9}/L. What type of anemia is it?
{=B_{12} folic-deficient
~Hemolytic
~Posthemorrhagic
~Aplastic
~Iron-deficient}

A patient has the following diagnosis: renal hypertension. What is the initial pathogenetic factor of arterial hypertension development in this case?
{=Renal ischemia
~Hypernatremia
~Hyperaldosteronism
~Intensified renin synthesis
~Intensified angiotensin synthesis}

A patient with an acute myocarditis has the clinic presentations of cardiogenic shock. What pathogenetic mechanism plays the main part in shock development?
{=Disorder of pumping ability of heart
~Depositing of blood in veins
~Decrease of diastolic flow to the hear
~Decrease of vascular tone
~Increase of vascular tone}

A patient was admitted to a hospital with poisoning with unsound food. His stomach was lavaged with solution of potassium permanganate. What is its mechanism of action?
{=Release of atomic oxygen
~Release of chlorine
~Release of iodine
~Disturbance of synthesis of respiratory chain enzymes
~Destruction of bacteria membranes}

A typical symptom of cholera is great loss of water and sodium ions. What mechanism underlies development of diarrhea in this case?
A patient underwent a surgery for excision of a cyst on pancreas. After this he developed haemorrhagic syndrome with apparent disorder of blood coagulation. Development of this complication can be explained by:
\{-Activation of fibrinolytic system
~Insufficient fibrin production
~Activation of anticoagulation system
~Activation of Christmas factor
~Reduced number of thrombocytes\}

ECG of a 44-year-old patient shows signs of hypertrophy of both ventricles and the right atrium. The patient was diagnosed with the tricuspid valve insufficiency. What pathogenetic variant of cardiac dysfunction is usually observed in case of such insufficiency?
\{-Heart overload by volume
~Heart overload by resistance
~Coronary insufficiency
~Cardiac tamponade
~Primary myocardial insufficiency\}

A patient who takes a blocker of membrane cytoreceptors of efferent conductor synapses of autonomic nervous system complains about dry mouth. What receptors are blocked?
\{-Muscarinic cholinoreceptors
~Beta-adrenoreceptors
~H2-receptors
~Nicotinic cholinoreceptors
~Alpha-adrenoreceptors\}

Examination of a patient revealed enlargement of some body parts (jaw, nose, ears, feet, hands), but body proportions were conserved. It might be caused by intensified secretion of the following hormone:
\{-Somatotropin
~Tetraiodothyronine
~Cortisol
~Triiodothyronine
~Somatostatin\}

Blood of patients ill with diabetes mellitus has high content of free fatty acids. It may be caused by:
\{-High activity of triglyceride lipase of adipocytes
~Activation of ketone bodies utilization
~Low activity of phosphatidylcholine-cholesterol-acyltransferase of plasma
~Activation of synthesis of apolipoproteins A-1, A-2, A-4
~Accumulation of palmitoyl-CoA in the cytosol\}

An experimental rat got intra-abdominal injection of 10 ml of 40% glucose solution. 60 minutes later the rat passed into a comatose state as a result of dehydratation. What is the mechanism of development of this state?
\{-Rise of osmotic pressure of extracellular fluid\}
15 minutes after a car accident examination of a 35 year old man revealed massive injury of lower extremities without serious external loss of blood. The victim is in excited state. What component of pathogenesis of traumatic shock is basic and requires urgent correction?

\{=Pain
~Internal loss of plasma
~Intoxication
~Acute renal insufficiency
~Cardiac function disorder\}

A 50-year-old patient has been examined by a dentist and found to have crimson smooth tongue. Blood analysis revealed a decrease in RBC level and hemoglobin concentration, colour index of 1.3, symptoms of megaloblastic hematopoiesis, degenerative changes in WBCs. What blood disorder was found in this patient?

\{=B12-folic-acid-deficiency anemia
~Myeloid leukemia
~Iron deficiency anemia
~Aplastic anemia
~Hemolytic anemia\}

A 23 year patient was admitted to the hospital in grave condition with craniocerebral trauma. His respiration is characterized by a spasmodic long inspiration interrupted by a short expiration. What respiration type is it typical for?

\{=Apneustic
~Biots respiration
~Kussmauls respiration
~Gasping
~Cheyne-Stokes respiration\}

Two days after myocardial infarction a patient had a sudden systolic pressure decrease up to 60 mm, tachycardia up to 140/min, dyspnea; the patient lost consciousness. What mechanism is principal for the shock pathogenesis?

\{=Decrease of cardiac volume
~Decrease of circulating blood volume
~Anaphylactic reaction
~Paroxysmal tachycardia
~Intoxication\}

After a psychoemotional stress a 48 year old patient had a sudden attack of acute heart pain with irradiation to the left hand. Nitroglycerine suppressed pain in 10 minutes. What pathogenetic mechanism is principal for the pain development?

\{=Spasm of coronary vessels
~Coronary vessel occlusion
~Increased need of myocardium in oxygen
~Embarrassement of coronary vessels
~Dilatation of peripheral vessels\}

A 46-year-old patient suffering from the diffuse toxic goiter underwent resection of the thyroid
gland. After the surgery the patient presents with appetite loss, dyspepsia, increased neuromuscular excitement. The body weight remained unchanged. Body temperature is normal. Which of the following has caused such a condition in this patient?

{=Reduced production of parathormone
~Increased production of thyroliberin
~Reduced production of thyroxin
~Increased production of thyroxin
~Increased production of calcitonin}

18-year-old patient complains of general weakness, fatigue, low spirits. The patient is of the asthenic constitution type. Ps- 68/min., AP- 90/60 mm Hg. She has been found to have primary neurocirculatory hypotension. What is the leading factor of the arterial pressure drop in this patient?

{=Decreased cardiac output
~Decreased tonus of resistive vessels
~Hypovolemia
~Deposition of blood in the veins of the systemic circulation}

18-year-old patient complains of general weakness, fatigue, low spirits. The patient is of the asthenic constitution type. Ps- 68/min., AP- 90/60 mm Hg. She has been found to have primary neurocirculatory hypotension. What is the leading factor of the arterial pressure drop in this patient?

{=Decreased cardiac output
~Decreased tonus of resistive vessels
~Hypovolemia
~Deposition of blood in the veins of the systemic circulation}

A woman after labor lost 20 kg of body weight, her hair and teeth fall out, she has muscle atrophy (hypophysial cachexia). Synthesis of what hypophysis hormone is disturbed?

{=Somatotropic
~Thyreotropic
~Prolactin
~Gonadotropic
~Corticotrophic}

Damage of one of the reactors at a nuclear power plant resulted in runout of radioactive products. People who were present in the high-radiation area got approximately 250-300 R. They were urgently taken to the hospital. What blood changes will be typical for this period?

{=Lymphopenia
~Thrombocytopenia
~Neutropenia
~Leukopenia
~Anemia}

A year after subtotal stomach resection on account of ulcer of lesser curvature the following blood changes were revealed: anemia, leukocytopenia and thrombocytopenia, color index - 1,3, megaloblasts and megalocytes. What factor deficiency caused the development of those pathology?

{=Castles factor
~Hydrochloride acid
~Pepsin
~Gastrin
~Mucin}
A patient with a craniocerebral injury presents with respiration characterized by progressively deeper respiratory movements followed by a gradual decrease that results in a temporary stop in breathing. What pattern of abnormal respiration are these features typical for?

- Cheyne-Stokes
- Apneustic
- Biots
- Kussmauls

After the traumatic tooth extraction a patient is complaining of acute, dull, poorly-localized pain in gingiva, body temperature rise up to 37.5°C. The patient has been diagnosed with alveolitis. Specify the kind of pain in this patient:

- Protopathic
- Visceral
- Epicritic
- Heterotopic
- Phantom

After poisoning with an unknown drug a 37 year old patient has stereotypical face muscle contractions that imitate blinking and squinting. What form of motor function disorder of nervous system is it?

- Hyperkinesia
- Hypokinesia
- Ataxy
- Akinesia

Rabbits lived on food with addition of cholesterol. Five months later the atherosclerotic aorta changes were revealed. Name the main cause of atherogenesis in this case:

- Exogenous hypercholesterolemia
- Overeating
- Endogenous hypercholesterolemia
- Hypodynamia

A patient with primary nephrotic syndrome has the following content of whole protein: 40 g/l. What factor caused hypoproteinemia?

- Proteinuria
- Disturbance of intestinal protein absorption
- Reduced protein synthesis in liver
- Transition of protein from vessels to tissues
- Increased proteolysis

Four months ago a 43 year old patient had a traumatic amputation of his lower extremity. Now he complains of sensing the amputated extremity and having constantly grave, sometimes unbearable pain in it. What type of pain does he have?

- Phantom
- Reflex
- Neuralgia
- Causalgia
- Thalamic
In crisis period a 14 year old child ill with diphtheria has AP- 70/50 mm Hg accompanied by abrupt fall in temperature and tachycardia. What form of vascular tone disturbance is it?

\[=\text{Acute hypotension} \]
\[=\text{Essential arterial hypotension} \]
\[=\text{Chronic hypotension} \]
\[=\text{Vegetovascular dystonia} \]

A patient ill with jaundice has increased content of conjugated bilirubin and bile acids in blood, no stercobilinogen in urine. What jaundice are these symptoms typical for?

\[=\text{Obstructive} \]
\[=\text{Hepatocellular} \]
\[=\text{Cythemolytic} \]
\[=\text{Hemolytic} \]
\[=\text{Hepatic} \]

19 year old patient was diagnosed with chronic acquired hemolytic anemia. What is the leading pathogenetic mechanism of this pathology's development?

\[=\text{Autoimmune hemolysis} \]
\[=\text{Toxic hemolysis} \]
\[=\text{Hyposmolarity of plasm} \]
\[=\text{Osmotic hemolysis} \]
\[=\text{Intracellular hemolysis} \]

A 56 year old man was taken to the hospital with complaints of general weakness, pain and burning in the region of tongue, extremity numbness. In the past he had resection of cardiac part of ventricle. Blood test: Hb- 80 g/L; RBC- 2,0x10¹²/L; colour index of blood- 1,2; leukocytes - 3,5x10⁹/L. What type of anemia is it?

\[=\text{В12 folic-deficient} \]
\[=\text{Posthemorrhagic} \]
\[=\text{Iron-deficient} \]
\[=\text{Aplastic} \]
\[=\text{Hemolytic} \]

A patient has the following diagnosis: renal hypertension. What is the initial pathogenetic factor of arterial hypertension development in this case?

\[=\text{Renal ischemia} \]
\[=\text{Hypernatremia} \]
\[=\text{Intensified renin synthesis} \]
\[=\text{Intensified angiotensin synthesis} \]
\[=\text{Hyperaldosteronism} \]

A diver who has been staying at the depth of 40 m for a long time fell ill with caisson disease as a result of decompression. The main pathogenetic factor is the following embolism:

\[=\text{Fat} \]
\[=\text{Air} \]
\[=\text{Gaseous} \]
\[=\text{Paradoxical} \]
\[=\text{Tissue} \]

ECG of a patient shows such alterations: P-wave is normal, P-Q-interval is short, ventricular QRST
complex is wide, R-wave is double-peak or two-phase. What form of arrhythmia is it?
- WPW syndrome (Wolff-Parkinson-White)
- Atrioventricular block
- Fredericks syndrome (atrial flutter)
- Ventricular fibrillation
- Ciliary arrhythmia

A patient with an acute myocarditis has the clinic presentations of cardiogenic shock. What pathogenetic mechanism plays the main part in shock development?
- Disorder of pumping ability of heart
- Decrease of vascular tone
- Increase of vascular tone
- Depositing of blood in veins
- Decrease of diastolic flow to the heart

Potassium cyanide that is a poison came into a patient's organism and caused death a few minutes after it. The most probable cause of its toxic effect was abnormal activity of:
- Cytochrome oxidase
- ATP-synthetase
- Haemoglobin synthesis
- NADP-H-dehydrogenase
- Catalase

After the exposure to ionizing radiation a person was found to have a decrease in blood granulocyte level. What mechanism underlies these changes?
- Leikopoiesis inhibition
- Autoimmune process development
- Increased passage of granulocytes into the tissues
- Increased disintegration of leucocytes
- Disturbed release of mature leukocytes from the bone marrow

An unconscious patient had been delivered to a hospital by the ambulance. Objectively: absent reflexes, occasional convulsions, irregular breathing. After a laboratory examination he was diagnosed with hepatic coma. What metabolite accumulation is essential for the development of the central nervous system disorders?
- Ammonia
- Histamine
- Glutamine
- Urea
- Bilirubin

A patient was admitted to a hospital with poisoning with unsound food. His stomach was lavaged with solution of potassium permanganate. What is its mechanism of action?
- Release of atomic oxygen
- Release of iodine
- Release of chlorine
- Disturbance of synthesis of respiratory chain enzymes
- Destruction of bacteria membranes

A newborn has signs of dyspepsia after milk feeding. Symptoms of dyspepsia disappear when milk is substituted for glucose solution. The newborn has low activity of the following enzyme:
- Lactase
Injection of an anaesthetic before the tooth extraction resulted in development of anaphylactic shock accompanied by oliguria. What pathogenetic mechanism caused a decrease in diuresis in this case?

\{=Decrease in hydrostatic pressure in the renal corpuscle capillaries
~Increase in vasopressin secretion
~Damage of glomerular filter
~Increase in hydrostatic pressure in the Bowmans capsule
~Increase in oncotic pressure of blood plasma\}

A patient presents with icteritiousness of skin, scleras and mucous membranes. Blood plasma the total bilirubin is increased, stercobilin is increased in feces, urobilin is increased in urine. What type of jaundice is it?

\{=Haemolytic
~Parenchymatous
~Gilberts disease
~Obturational
~Cholestatic\}

A patient suffers from the haemorrhagic syndrome that shows itself in frequent nasal bleedings, posttraumatic and spontaneous intracutaneous and intra-articular haemorrhages. After a laboratory study a patient was diagnosed with the type B haemophilia. This disease is provoked by the deficiency of the following factor of blood coagulation:

\{=IX
~VIII
~V
~VII
~XI\}

A 23-year-old patient with acute pulpitis has elevated body temperature and an increase in the WBC count up to 14 · 10⁹/L. The leucogram is as follows: basophils - 0, eosinophils - 2, monocytes - 0, immature neutrophils - 4, stab neutrophils - 8, segmented neutrophils - 56, lymphocytes - 26, monocytes - 4. How can we interpret these changes in the white blood cells?

\{=Neutrophilia with a regenerative left shift
~Neutrophilia with a degenerative left shift
~Neutrophilia with a hyperregenerative left shift
~Lymphocytosis
~Neutrophilic leukocytosis with a right shift\}

A 39-year-old patient underwent hematologic tests. The following results were obtained: RBC- 2, 8 · 10¹²/L, Hb- 80 g/L, color index - 0,85, reticulocytes - 0,1%, platelets - 160 · 10⁹/L, WBC - 60 · 10⁹/L. Basophils - 2, eosinophils - 8, promyelocytes - 5, myelocytes - 5, immature neutrophils - 16, stab neutrophils - 20, segmented neutrophils - 34, lymphocytes - 5, monocytes - 5. What form of blood pathology are these results indicative of?

\{=Chronic myeloid leukemia
~Acute myeloid leukemia
~Hypoplastic anemia
~Undifferentiated leukemia\}
A 49-year-old patient was found to have a disproportionate enlargement of hands, feet, nose, ears, superciliary arches and cheek bones. Blood test revealed hyperglycemia, impaired glucose tolerance. What is the most likely cause of this pathology development?

- Hypersecretion of growth hormone
- Posterior pituitary hormone hypersecretion
- Insulin hyposecretion
- Vasopressin hyposecretion
- Glucocorticoid hypersecretion

A 44-year-old patient with obstructive jaundice has been admitted to a hospital with the symptoms of cholemic syndrome. On the ECG arrhythmia shows up. What kind of arrhythmia is the patient most likely to have?

- Sinus bradycardia
- Sinus tachycardia
- Atrial premature contraction
- Ventricular premature contraction
- Atrioventricular block

In a 52-year-old patient with chronic glomerulonephritis, the glomerular filtration rate (GFR) was reduced by 20% compared to normal. What causes the decrease in GFR in patients with chronic renal failure?

- Reduced number of active nephrons
- Tubulopathy
- Obstruction of the urinary tract
- Renal ischemia
- Renal artery thrombosis

A 36-year-old patient with diabetes mellitus had seizures with loss of consciousness after an insulin injection. What was the result of blood glucose test?

- 2,5 mmol/l
- 3,3 mmol/l
- 8,0 mmol/l
- 10 mmol/l
- 5,5 mmol/l

Following thyroid surgery, a 47-year-old female patient had fibrillary twitching of muscles in the arms, legs and face. These disorders can be treated by the introduction of the following hormone:

- Parathyroid hormone
- Triiodothyronine
- Thyrotropin
- Thyroxine
- Thyroid-stimulating hormone

A 42-year-old patient with tetanus developed an acute respiratory failure. What type of respiratory failure occurs in this case?

- Disregulatory impairment of alveolar ventilation
- Restrictive impairment of alveolar ventilation
- Obstructive impairment of alveolar ventilation
- Perfusion impairment
- Diffusion impairment
When students pass an exam, they often complain of having "dry mouth". The mechanism underlying the development of this condition is the activation of the following processes:
{=Conditioned sympathetic
~Unconditioned parasympathetic
~Conditioned parasympathetic
~Unconditioned sympathetic
~Unconditioned peripheral}

A female with Rh-negative blood of A (II) type has a child with AB (IV) type who has been diagnosed with hemolytic disease resulting from Rh-conflict. What blood type may the baby’s father have?
{=III (B), Rh-positive
~I (0), Rh-positive
~II (A), Rh-positive
~IV (AB), Rh-negative
~III (B), Rh-negative}

A 66-year-old male patient has liver carcinoma with syndrome of portal hypertension. What kind of portal hypertension does the patient have?
{=Intrahepatic
~Suprahepatic
~Subhepatic
~Combined
~}

A 39-year-old patient with pyelonephritis has been found to have hyposthenuria combined with polyuria. According to this data, what process is most likely to be disrupted?
{=Tubular reabsorption
~Glomerular filtration
~Tubular secretion
~Tubular excretion
~}

A 12-year-old child is of short stature, has disproportionate body structure and mental retardation. These characteristics might be caused by the hyposecretion of the following hormone:
{=Thyroxine
~Insulin
~Cortisol
~Somatotropin
~Glucagon}

A 48-year-old female patient with a history of cholelithiasis has recurring steatorrhea. What vitamin deficiency may develop as a complication of the current disease?
{=K
~B6
~C
~P P
~B12}

Transfusion of Rh-incompatible blood resulted in hemolytic jaundice development in the patient. What laboratory blood value confirms this type of jaundice?
Accumulation of unconjugated bilirubin
~Reduction of unconjugated bilirubin
~Accumulation of urobilinogen
~Reduction of stercobilin
~Reduction of conjugated bilirubin

For several days a 55-year-old female patient has had pain attacks in the right upper quadrant after eating fatty foods. Visually, there is yellowness of sclera and skin. The patient has acholous stool, beer-colored urine. What substance present in the patient's urine causes its dark color?

Conjugated bilirubin
~Ketone bodies
~Unconjugated bilirubin
~Stercobilin
~Bilirubin glucuronides

A 23-year-old patient with diabetes has hyperglycemia at the rate of 19 mmol/l which is clinically manifested by glucosuria, polyuria, polydipsia. Which of the listed below mechanisms is responsible for the development of glycosuria?

Exceedence of glucose renal threshold
~Non-enzymatic glycosylation of proteins
~Polyuria
~Polydipsia
~Tissue dehydration

Experimental stimulation of the peripheral segment of the vagus nerve of a cat will result in the following changes:

Decreased heart rate
~Increased heart rate
~Dilated pupils
~Increased respiratory rate
~Bronchiectasis

Arterial pH is 7,4; primary urine - 7,4; final urine - 5,8. Decrease in the pH of final urine is the result of the secretion of the following ions in the nephron tubules:

Hydrogen ions
~Potassium ions
~Hydrogen carbonate ions
~Urea
~Creatinine

A 49-year-old male patient with myocardial infarction has been admitted to the cardiology department. What changes in the peripheral blood cells are induced by the necrotic changes in the myocardium?

Neutrophilic leukocytosis
~Monocytosis
~Eosinophilia
~Thrombocytopenia
~Lymphopenia

During AB0 blood grouping by using coliclons (diagnostic monoclonal antibodies), haemagglutination did not occur with any of the coliclons. What is the blood group of the patient under examination?
A 64-year-old male patient died with symptoms of acute cardiovascular failure. Autopsy results: the section of the anterior wall of the left ventricle showed a yellowish flaccid 1,5-2 cm focus surrounded by a reddish rim. The convoluted coronary arteries had lumen irregularly narrowed by 75%. The vessel intima was thickened, dense, covered with whitish plaques, crunched when cut. What disease can you think of?

{=Acute myocardial infarction ~Continuously recurrent myocardial infarction ~Postinfarction cardiosclerosis ~Microfocal cardiosclerosis ~Recurrent myocardial infarction}

During a hypertensive crisis a patient has had a hemorrhagic stroke resulting in a lack of voluntary movements, increased tendon reflexes and muscle tone of the left arm and leg. What is this motor dysfunction called?

{=Hemiplegia ~Paraplegia ~Tetraplegia ~Monoplegia ~Flaccid paralysis}

A 42-year-old patient with gastric ulcer has a disbalance between the aggressive and defensive factors. Which of the following factors contributes to the development of gastric ulcer?

{=Helicobacter pylori ~Mucin ~Hydrocarbonate ~Prostaglandin ~Prostacyclin}

In the solution being used for perfusing the isolated heart of rat, the K+ concentration has been increased to 8 mmol/L. What changes in the heart are to be expected?

{=Diastolic arrest ~Systolic arrest ~Heart force increase ~Heart rate increase ~There will be no changes}

ECG of a 46-year-old patient shows an increase in the QRS duration. This might be caused by:

{=Increased ventricular activation time ~Conduction disturbances in the AV node ~Increased atrial excitability ~Increased atrial and ventricular excitability ~Increased atrial activation time}

A 28-year-old patient complains of frequent gingival haemorrhages. Blood test revealed the clotting factor II (prothrombin) deficiency. What phase of blood coagulation is impaired in this patient?

{=Thrombin generation
A 40-year-old patient was revealed to have blood clotting time of 2 minutes under a stressful condition. It is primarily caused by the following hormone affecting hemocoagulation:

\{-\text{Catecholamine} \\
\text{Cortisol} \\
\text{Aldosterone} \\
\text{Somatotropin} \\
\text{Vasopressin}\}

A 38-year-old female patient has been brought into admission room with uterine bleeding. What will be revealed by blood test?

\{-\text{Decrease of packed cell volume} \\
\text{Eosinophilia} \\
\text{Decreased erythrocyte sedimentation rate} \\
\text{Leukocytosis} \\
\text{Increased color index of blood}\}

There is high content of protein and erythrocytes in urine. This can be caused by increased:

\{-\text{Permeability of renal filter permeability} \\
\text{Effective filtration pressure} \\
\text{Hydrostatic blood pressure in glomerular capillaries} \\
\text{Hydrostatic pressure of primary urine in capsule} \\
\text{Oncotic pressure of blood plasma}\}

A 32-year-old patient has purulent wound in the lower third of forearm. Smear of purulent wound content has been made. What cells will be generally detected, if it is stained using Romanovsky-Giemsa stain?

\{-\text{Neutrophil} \\
\text{Eosinophil} \\
\text{Lymphocyte} \\
\text{Erythrocyte} \\
\text{Basocyte}\}

A pregnant woman complains of vaginal mucosa irritation, itching and genital tract secretion. Bacterioscopy of vaginal smears revealed large gram-positive oval oblong cells that form pseudomycelium. What is the most probable channel of infection?

\{-\text{Endogenous infection} \\
\text{Sexual transmission} \\
\text{Contact infection} \\
\text{Vector-borne transmission} \\
\text{Wound infection}\}

A patient has sustained a traumatic injury of the greater pectoral muscle. This resulted in a decrease of:

\{-\text{Inspiratory reserve volume} \\
\text{Expiratory reserve volume} \\
\text{Tidal volume} \\
\text{Residual volume}\}
Denture installation has caused excessive salivation in patient. It is caused by the following reflexes:

- Unconditioned
- Conditioned
- Conditioned and unconditioned
- Local

A 53-year-old patient with a long history of nephrolithiasis underwent nephrectomy. The kidney looks as a thin-walled sac filled with urine. Renal parenchyma is atrophied. Specify this complication of nephrolithiasis:

- Hydronephrosis
- Pyelonephritis
- Pyonephrosis
- Multicystic kidney disease
- Nephrosclerosis

A patient from Prykarpattia (at the foot of the Carpathian mountains) with endemic goiter consulted a doctor about suppuration of gingival angles and loosening of teeth. What is a major factor of periodontitis development in this case?

- Endocrine disorders
- Stress effects
- Hypersalivation
- Violation of swallowing
- Malnutrition

The total number of leukocytes in patient’s blood is 90 · 10^9/l. Leukogram: eosinophils - 0%, basophils - 0%, juvenile - 0%, stab neutrophils - 2%, segmentonuclear cells - 20%, lymphoblasts - 1%, prolymphocytes - 2%, lymphocytes - 70%, monocytes - 5%, Botkin-Gumprecht cells. Clinical examination revealed enlarged cervical and submandibular lymph nodes. Such clinical presentations are typical for the following pathology:

- Chronic lympholeukosis
- Acute lympholeukosis
- Lymphogranulomatosis
- Infectious mononucleosis
- Chronic myeloleukosis

A 67-year-old patient has atherosclerosis of cardiac and cerebral vessels. Examination revealed hyperlipidemia. What class of blood plasma lipoproteids is most important in atherosclerosis pathogenesis?

- Low-density lipoproteids
- Chylomicrons
- α-lipoproteids
- High-density lipoproteids

A 42-year-old patient with tetanus developed an acute respiratory failure. What type of respiratory failure occurs in this case?

- Disregulatory impairment of alveolar ventilation
- Restrictive impairment of alveolar ventilation
~Obstructive impairment of alveolar ventilation
~Perfusion impairment
~Diffusion impairment

A patient, who has been suffering from severe injury of thorax, went into shock followed by symptoms of acute renal failure. What is the primary mechanism of acute renal failure development in this case?
{=Arterial pressure drop
~Disruption of urinary outflow
~Increase of pressure in glomerular capsule
~Increase of pressure in renal arteries
~Decrease of oncotic blood pressure}

A 12-year-old child is of short stature, has disproportionate body structure and mental retardation. These characteristics might be caused by the hyposecretion of the following hormone:
{=Thyroxine
~Insulin
~Cortisol
~Somatotropin
~Glucagon}

A patient with acute retention of urine has been brought to an admission room. During examination a doctor found out that the patient has urethral obturation caused by pathology of the surrounding organ. Name this organ.
{=Prostate
~Testicle
~Seminal vesicle
~Spermatic cord
~Epididymis}

A 43-year-old female complains of weight loss, hyperhidrosis, low-grade fever, increased irritability. She has been found to have hyperfunction of the sympathoadrenal system and basal metabolism. These disorders can be caused by hypersecretion of the following hormone:
{=Thyroxine
~Somatotropin
~Corticotropin
~Insulin
~Aldosterone}

As a result of dysfunction of protein synthesis in liver a patient with hepatic insufficiency has disturbed synthesis of procoagulants, prothrombin, fibrinogen. Which of the listed syndromes can be expected in this patient?
{=Haemorrhagic
~Portal haemorrhagic syndrome
~Hepatolienal syndrome
~Acholia syndrome
~Cholaemia syndrome}

A 49-year-old male patient with myocardial infarction has been admitted to the cardiology department. What changes in the peripheral blood cells are induced by the necrotic changes in the myocardium?
{=Neutrophilic leukocytosis
Tooth extraction in a patient with chronic persistent hepatitis was complicated by a prolonged bleeding. What is the cause of hemorrhagic syndrome?
{=Decreased production of thrombin
~Increased production of thromboplastin
~Decreased production of fibrin
~Increased synthesis of fibrinogen
~Increased fibrinolysis}

A patient presented to a hospital with complaints about quick fatigability and significant muscle weakness. Examination revealed an autoimmune disease that causes functional disorder of receptors in the neuromuscular synapses. This will result in the disturbed activity of the following mediator:
{=Acetylcholine
~Noradrenaline
~Dopamine
~Serotonin
~Glycine}

After the transfusion of the concentrated red blood cells the patient developed posttransfusion shock. What is the leading mechanism of acute renal failure in this case?
{=Glomerular filtration disorder
~Tubular reabsorption disorder
~Tubular secretion disorder
~Urinary excretion disorder
~Impairment of the renal incretory function}

A patient with pituitary tumor complains of increased daily diuresis (polyuria). Glucose concentration in blood plasma equals 4.8 mmol/l. What hormone can be the cause of this if its secretion is disturbed?
{=Vasopressin
~Aldosterone
~Natriuretic hormone
~Insulin
~Angiotensin I}

During AB0 blood grouping by using coliclons (diagnostic monoclonal antibodies), haemagglutination did not occur with any of the coliclons. What is the blood group of the patient under examination?
{=0 (I)
~A (II)
~B (III)
~AB (IV)
~}
A patient is diagnosed with pancreatic diabetes with associated hyperglycemia. Krok 1 Stomatology 2015 15 Glycemia rate can be assessed retrospectively (4-8 weeks prior to examination) by measuring concentration of the following blood plasma protein:
#{Glycated hemoglobin
~Albumin
~Fibrinogen
~C-reactive protein
~Ceruloplasmin}

A patient consulted an immunologist about diarrhea, weight loss within several months, low-grade fever, enlarged lymph nodes. The doctor suspected HIV infection. What immunocompetent cells must be studied in the first place?
#{Helper T-lymphocytes
~Suppressor T-lymphocytes
~B-lymphocytes
~Monocytes
~Plasma cells}

After examining the patient the doctor recommended him to eliminate rich meat and vegetable broth, spices, smoked products from the diet, since the patient was found to have:
#{Increased secretion of hydrochloric acid by the stomach glands
~Reduced secretion of hydrochloric acid by the stomach glands
~Reduced motility of the gastrointestinal tract
~Reduced salivation
~Biliary dyskinesia}

A patient suffering from pericarditis with rapid progression has developed acute cardiac tamponade. What regulation mechanism is most likely to compensate for this pathology?
#{Tachycardia
~Heterometric
~Homeometric
~Inotropic effect of catecholamines
~Vasoconstriction}

A 64-year-old male patient died with symptoms of acute cardiovascular failure. Autopsy results: the section of the anterior wall of the left ventricle showed a yellowish flaccid 1,5–2 cm focus surrounded by a reddish rim. The convoluted coronary arteries had lumen irregularly narrowed by 75%. The vessel intima was thickened, dense, covered with whitish plaques, crunched when cut. What disease can you think of?
#{Acute myocardial infarction
~Continuously recurrent myocardial infarction
~Postinfarction cardiosclerosis
~Microfocal cardiosclerosis
~Recurrent myocardial infarction}

A 43-year-old patient has acute pancreatitis with concomitant disruption of common bile duct
patency. What condition can it result in?
{- Mechanical jaundice
- Hemolytic jaundice
- Hepatocellular jaundice
- Hepatic coma
- Portal hypertension}

An inflammatory process in tissues is characterised by hyperemia and edema. What leukocytes situated in connective tissue provide for vasodilatation and increased blood vessel capacity under these conditions?
{- Basocytes
- Neutrophils
- Eosinophils
- T-lymphocytes
- B-lymphocytes}

In course of an experiment researchers stimulate a branch of a sympathetic nerve that innervates heart. What changes in cardiac activity should be registered?
{- Increase in heart rate and heart force
- Decrease in heart force
- Increase in heart rate
- Increase in heart force
- Increase in arterial pressure}

A patient has myocardial infarction. The first several hours of such medical condition will be characterized by significant increase of activity of the following enzyme in his blood serum:
{- Creatine phosphokinase
- Lactate dehydrogenase4
- Aspartate aminotransferase
- Lactate dehydrogenase5
- Alanine-aminotransferase}

A 54-year-old patient with viral hepatitis has complication of hepatic coma caused by massive necrosis of liver epithelial cells. What kind of hepatic coma is it characteristic of?
{- Parenchymatous
- Shunt
- Mixed type
- Porto-caval
- Ketoacidotic}

A patient has petechial hemorrhages on the gums, hard and soft palate, buccal mucosa. This is caused by the dysfunction of the following corpuscles:
{- Platelets
- Eosinophils
- Monocytes
- Lymphocytes
- Erythrocytes}

Examination of a patient revealed dermatitis, diarrhea, dementia. What vitamin deficiency is the cause of this condition?
{- Nicotinamide
- Ascorbic acid
A 49-year-old patient was found to have a disproportionate enlargement of hands, feet, nose, ears, superciliary arches and cheek bones. Blood test revealed hyperglycemia, impaired glucose tolerance. What is the most likely cause of this pathology development?

- Hypersecretion of growth hormone
- Posterior pituitary hormone hypersecretion
- Insulin hyposecretion
- Vasopressin hyposecretion
- Glucocorticoid hypersecretion

A patient suffers from mutation of a gene that corresponds with hemoglobin synthesis. This condition led to development of sickle cell disease. Name the pathological hemoglobin characteristic of this disease:

- HbS
- HbA
- HbF
- HbA1
- Bart-Hb

A patient, who had suffered severe blood loss three days ago, underwent blood test. The following data was obtained in leukogram: leukocytes -12 · 10⁹/l, basophils - 0, eosinophils -3, myelocytes - 0, juvenile - 3, stab neutrophils - 12, segmented neutrophils - 62, lymphocytes - 16, monocytes -4. What change of leukocyte content occurred in this case?

- Neutrophilia with regenerative leftshift
- Neutrophilia with degenerative leftshift
- Neutrophilia with right-shift
- Absolute lymphopenia
- Absolute monocytopenia

After the traumatic tooth extraction a patient is complaining of severe dull poorly-localized pain in gingiva, body temperature rise up to 37.5°C. The patient has been diagnosed with alveolitis. Specify the kind of pain in this patient:

- Protopathic
- Epicritic
- Visceral
- Heterotopic
- Phantom

The total number of leukocytes in the patient’s blood is 90 · 10⁹/l. Leukogram: eosinophils - 0%, basophils - 0%, juvenile - 0%, stab neutrophils - 2%, segmented neutrophils - 20%, lymphoblasts - 1%, prolymphocytes - 2%, lymphocytes - 70%, monocytes - 5%, Botkin-Gumprecht cells. Clinical examination revealed enlarged cervical and submandibular lymph nodes. Such clinical presentations are typical of the following pathology:

- Chronic lympholeukosis
- Acute lympholeukosis
- Lymphohgranulomatosis
- Infectious mononucleosis
- Chronic myeloleukosis
A patient has a history of chronic heart failure. Which of the following hemodynamic parameters is a major symptom of cardiac decompensation development?

- Decreased stroke volume
- Tachycardia development
- Tonegenic dilatation
- Increased peripheral vascular resistance
- Increased central venous pressure

After a serious psychoemotional stress a 48-year-old patient suddenly developed acute heart ache irradiating to the left arm. Nitroglycerine relieved the pain attack after 10 minutes. What is the leading pathogenetic mechanism of this process development?

- Spasm of coronary arteries
- Dilatation of peripheral vessels
- Obstruction of coronary vessels
- Compression of coronary vessels
- Increase in myocardial oxygen consumption

A patient with chronic hepatitis complains of increased sensitivity to barbiturates that previously induced no symptoms of intoxication. What hepatic function is disrupted and primarily responsible for such reaction in this patient?

- Metabolic
- Bilification
- Hemodynamic
- Hemopoietic
- Phagocytic

Glucose content of blood keeps at sufficient level after one week of starvation. Is it caused by activation of the following process:

- Gluconeogenesis
- Glycolysis
- Glycogenolysis
- Tricarboxylic acid cycle
- Glycogen phosphorolysis

A student, who unexpectedly met his girlfriend, developed an increase in systemic arterial pressure. This pressure change was caused by the intensified realization of the following reflexes:

- Conditional sympathetic
- Conditional parasympathetic
- Conditional sympathetic and parasympathetic
- Unconditional parasympathetic
- Unconditional sympathetic

After the exposure to ionizing radiation a person was found to have a decreased blood granulocyte level. What mechanism underlies these changes?

- Leikopoiesis inhibition
- Increased passage of granulocytes into the tissues
- Autoimmune process development
- Increased disintegration of leucocytes
- Disrupted release of mature leukocytes from the bone marrow

On the 4th day of treatment with diclofenac sodium a 55-year-old patient has developed gastric hemorrhage due to an ulcer appearing on the gastric mucosa. Ulcerogenic action of this drug is
caused by decreased secretion of:

- Prostaglandin E2
- Leukotriene
- Prostaglandin E1
- Cyclic endoperoxides
- Thromboxane

A 43-year-old woman complains of weight loss, hyperhidrosis, low-grade fever, increased irritability. She has been found to have hyperfunction of the sympathetic-adrenal system and basal metabolism. These disorders can be caused by hypersecretion of the following hormone:

- Thyroxine
- Somatotropin
- Corticotropin
- Insulin
- Aldosterone

A blood test was performed for a patient with allergic rhinitis. Blood smear stained after Romanowsky reveals large number of cells with the following structure: segmented nucleus consists of 2-3 segments; cytoplasm is filled with bright-pink oxyphil granularity; granules are large. Name these cells:

- Eosinophils
- Lymphocytes
- Monocytes
- Basocytes
- Neutrophils

For several days a 55-year-old woman has been suffering from pain attacks in the right upper quadrant after eating fatty foods. Visually, there is yellowness of sclera and skin. The patient has acholic stool, beer-colored urine. What substance present in the patient’s urine causes its dark color?

- Conjugated bilirubin
- Ketone bodies
- Unconjugated bilirubin
- Stercobilin
- Bilirubin glucuronides

A 49-year-old man with myocardial infarction has been admitted to a cardiology department. What changes in the peripheral blood cells are induced by the necrotic changes in the myocardium?

- Neutrophilic leukocytosis
- Monocytosis
- Eosinophilia
- Thrombocytopenia
- Lymphopenia

A 19-year-old young man has been examined in a nephrological hospital. Increased potassium content was detected in secondary urine of the patient. Such changes have been most likely caused by the increased secretion of the following hormone:

- Aldosterone
- Oxytocin
- Adrenalin
- Glucagon
- Testosterone
Injection of an anaesthetic before the tooth extraction resulted in development of anaphylactic shock accompanied by oliguria. What pathogenetic mechanism caused the decrease in diuresis in this case?

- Decrease in hydrostatic pressure in the renal corpuscle capillaries
- Increase in hydrostatic pressure in the Bowman’s capsule
- Damage of the glomerular filter
- Increase in oncotic pressure of blood plasma
- Increase in vasopressin secretion

A patient complains of toothache. On examination he has been diagnosed with pulpitis. Which factor played the main pathogenic role in the development of pain syndrome in this case?

- Increased intratissular pressure in the dental pulp
- Vasospasm
- Inadequate stimulation of the mandibular nerve branch
- Activation of one of the components of the complement system
- Interleukin action

After the transfusion of the concentrated red blood cells the patient developed posttransfusion shock. What is the leading mechanism of the acute renal failure in this case?

- Glomerular filtration disorder
- Tubular reabsorption disorder
- Tubular secretion disorder
- Urinary excretion disorder
- Impairment of the renal incretory function

A 78-year-old patient suffering from atherosclerosis has been delivered to a surgical ward with signs of acute abdomen. Laparoscopy revealed blackened and flaccid small intestine loops; demarcation line is not clear. Diagnose the changes that occurred in the patient’s small intestine:

- Hemorrhagic infarction complicated with humid gangrene
- Hemorrhagic infarction complicated with dry gangrene
- Ischemic stroke complicated with humid gangrene
- Ischemic stroke complicated with dry gangrene

A patient with pituitary tumor complains of increased daily diuresis (polyuria). Glucose concentration in blood plasma equals 4.8 mmol/l. What hormone can be the cause of this, if its secretion is disturbed?

- Vasopressin
- Aldosterone
- Natriuretic hormone
- Insulin
- Angiotensin I

A woman suffering from essential hypertension had suddenly lost consciousness; she was delivered to a resuscitation unit in a comatose state with the diagnosis of disturbed cerebral circulation. The patient died one day after her hospitalization. Autopsy revealed a cavity in the left hemisphere of the brain. The cavity is 5x4 cm in size and filled with blood clots and liquid blood. What hemorrhage is it according to the mechanism of its origin?

- Hemorrhage caused by vessel rupture
- Hemorrhage caused by vessel erosion
- Diapedetic hemorrhage
- Hemorrhagic extravasation
During AB0 blood grouping by using zoliclons (diagnostic monoclonal antibodies), hemagglutination did not occur with any of the zoliclons. What is the blood group of the patient under examination?

\{0 (I) \\
~A (II) \\
~B (III) \\
~AB (IV)\}

A 40-year-old patient suffers from intolerance of dairy food products. This condition has likely developed due to insufficiency of the following digestive enzyme:

\{Lactase \\
~Lipase \\
~Maltase \\
~Invertase \\
~Amylase\}

A patient has been diagnosed with severe B12-deficient anemia with hemopoiesis. Anamnesis states total gastrectomy. What cells allow to confirm this diagnosis, if they are absent in the peripheral blood?

\{Megalocytes \\
~Microcytes \\
~Ovalocytes \\
~Normocytes \\
~Anulocytes\}

Roentgenologically confirmed an obstruction of common bile duct that prevents bile from inflowing to the duodenum. What process is likely to be disturbed?

\{Fat emulgation \\
~Protein absorption \\
~Carbohydrate hydrolysis \\
~Hydrochloric acid secretion in stomach \\
~Salivation inhibition\}

During ascent into mountains at the altitude of 5000 meters the group of climbers has developed the following complaints: dyspnea, increased heart rate, headache, vertigo, tinnitus. What is the cause of such symptoms?

\{Hypoxemia \\
~Hypokalemia \\
~Hypothermia \\
~Erythropenia \\
~Leucopenia\}

A 65-year-old patient had been treated for 3 days in a resuscitation unit for a cardiac pathology. Suddenly he developed ventricular fibrillation that became the immediate cause of death of this patient. Microscopy of the left ventricular myocard revealed a large focus of cardiomyocyte karyolysis demarcated by the zone of hyperaemia. What cardiac pathology was the cause of death?

\{Acute myocardial infarction \\
~Ischemic myocardial degeneration \\
~Acute myocarditis \\
~Diffuse cardiosclerosis\}
Postinfarction cardiosclerosis

Which of the named below is the substrate of activated Christmas factor that takes part in blood coagulation?
- Factor X
- Vitamin K
- Fibrinogen
- Fibrin
- Thrombin

Students have been remaining for a long time in a badly ventilated room. They developed respiratory changes caused by irritation of their peripheral chemoreceptors that react primarily to:
- Decrease of oxygen tension in arterial blood
- Increase of oxygen tension in arterial blood
- Decrease of carbon dioxide tension in arterial blood
- Increase of hydrogen ion concentration in arterial blood
- Decrease of hydrogen ion concentration in arterial blood

A 2-year-old child presents with mental development retardation, intolerance of proteins, severe hyperammonemia against the background of low blood urea content. This condition is caused by the congenital deficiency of the following mitochondrial enzyme:
- Carbamoyl phosphate synthetase
- Citrate synthase
- Succinate dehydrogenase
- Malate dehydrogenase
- Monoamine oxidase

Corticosteroid analogues induce breakdown of muscle proteins into free amino acids. Under such conditions these amino acids become involved with the following processes:
- Gluconeogenesis in liver
- Glycolysis in muscles
- Synthesis of higher fatty acids
- Glycogenolysis
- Decarboxylation

Parkinson’s disease is caused by disrupted dopamine synthesis. What brain structure synthesizes this neurotransmitter?
- Substantia nigra
- Pallidum
- Quadrigeminal plate
- Red nuclei
- Hypothalamus

A 30-year-old man died from electrocution. What was the cause of death?
- Central respiratory arrest
- Acute renal failure
- Acute respiratory failure
- Shock
- Internal hemorrhage

A 35-year-old woman complains of swollen neck. Subtotal thyreoidectomy is performed. On histological examination of the removed part of the thyroid gland the following was detected:
atrophy of parenchyma, moderate sclerosis development, diffuse infiltration by lymphocytes and plasma cells leading to formation of lymphatic follicles. What pathology has developed in the thyroid gland?

{=Hashimoto’s thyroiditis
~Follicular adenoma
~Riedel’s thyroiditis
~Papillary carcinoma of the thyroid gland
~Diffuse toxic goiter}

A 30-year-old woman has decreased enzyme content in the pancreatic juice. This condition can be caused by insufficient secretion of the following hormone:

{=Vasoactive intestinal peptide
~Cholecystokinin-pancreozymin
~Secretin
~Somatostatin
~Gastric inhibitory polypeptide}

Psychological evaluation determined that a person is able to quickly adapt to changing situation, has good memory, is emotionally stable, possesses of high working ability. This person is the most likely to be:

{=Melancholic
~Choleric
~Sanguine
~Phlegmatic}

A patient suffers from diabetes mellitus with fasting hyperglycemia over 7.2 mmol/l. What blood plasma protein would allow to assess the patient’s glycemia level retrospectively (4-8 weeks prior to examination)?

{=Fibrinogen
~Albumin
~Glycated hemoglobin
~C-reactive protein
~Ceruloplasmin}

A patient is in the state of hypoglycemic coma. What hormone can cause this condition if overdosed?

{=Progesterone
~Somatotropin
~Corticotropin
~Insulin
~Cortisol}

Along with normal hemoglobin types there can be pathological ones in the body of an adult. Specify one of them:

{=HbA1
~HbF
~HbS
~HbA2
~HbO2}

Chronic overdosage of glucocorticoids leads to the development of hyperglycemia. What process of carbohydrate metabolism is responsible for this effect?
Due to morbid affection of the supraoptic and paraventricular nuclei of the hypothalamus a 40-year-old patient has developed polyuria (10-12 liters per day) and polydipsia. The following hormone is deficient, thus leading to this disturbance:

- Oxytocin
- Somatotropin
- Thyrotropin
- Vasopressin
- Corticotropin

A patient with glossitis presents with disappearance of lingual papillae, reddening and burning pain in the tongue. Blood test: erythrocytes 2, 2×1012/l, hemoglobin — 103 g/l, color index — 1,4. What type of anemia is it?

- B12 folate-deficient
- α–thalassemia
- Iron refractory
- β-thalassemia
- Iron deficiency

A patient with chronic renal failure presents with reduced inulin clearance of 60 ml/min. The following renal function is disturbed:

- Glomerular filtration
- Reabsorption in the proximal tubular segment of the nephron
- Reabsorption in the tubules of collecting duct
- Reabsorption in the distal tubular segment of the nephron

Often the cause of secondary immunodeficiency is an infectious affection of an organism, when agents reproduce directly in the cells of immune system and destroy them. Specify the diseases, during which the described above occurs:

- Dysentery, cholera
- Q fever, typhus
- Tuberculosis, mycobacteriosis
- Poliomyelitis, viral hepatitis type A
- Infectious mononucleosis, AIDS

Premature babies often develop respiratory distress syndrome. This pathology is caused by the deficiency of a certain component of the blood–air barrier. Name this component:

- Alveolocytes
- Surfactant
- Endothelial basement membrane
- Capillary endothelium
- Alveolar basement membrane

A patient has a history of chronic heart failure. Which of the following hemodynamic parameters is a major symptom of cardiac decompensation development?

- Increased peripheral vascular resistance
- Increased central venous pressure
~Tachycardia development
~Tonogenic dilatation
~Decreased stroke volume}

Due to trauma the patient’s parathyroid glands have been removed, which resulted in inertness, thirst, sharp increase of neuromuscular excitability. Metabolism of the following substance is disturbed:
\{=Chlorine
~Manganese
~Calcium
~Molybdenum
~Zinc\}

A doctor has established significant growth retardation, disproportional body build, and mental deficiency of a child. What is the most likely cause of this pathology?
\{=Hypothyroidism
~Hyperthyroidism
~Hypopituitarism
~Genetic defects
~Insufficient nutrition\}

During development of a frostbite the exposed skin becomes pale and its temperature drops. What mechanism is the basis of these developments?
\{=Visceral vasoconstriction
~Dermal and subcutaneous vasodilatation
~Reflex vasoconstriction
~Decreased heart rate
~Closure of arteriovenous anastomoses\}

A patient during fasting developed ketoacidosis as a result of increased fatty acids decomposition. This decomposition can be inhibited with:
\{=Thyroxin
~Cortisol
~Glucagon
~Adrenaline
~Insulin\}

Examination of a patient revealed glycosuria and hyperglycemia. He complains of dry mouth, itchy skin, frequent urination, thirst. He has been diagnosed with diabetes mellitus. What is the cause of polyuria in this patient?
\{=Increased urine osmotic pressure
~Increased filtration pressure
~Increased plasma oncotic pressure
~Decreased cardiac output
~Decreased plasma oncotic pressure\}

A patient, who had been eating only polished rice, developed polyneuritis caused by thiamine deficiency. What compound can be indicative of this kind of avitaminosis when excreted with urine?
\{=Methylmalonic acid
~Malate
~Pyruvic acid\}
A doctor examined a patient, studied the patient’s blood analyses and concluded that the peripheral organs of immunogenesis are damaged. What organs are the most likely to be affected?

{=Kidneys
~Thymus
~Tonsils
~Red bone marrow
~Yellow bone marrow}

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

{=Amylase
~Parotin
~Cholesterol
~Lysozyme
~Ceruloplasmin}

During an experiment aimed as study of respiration regulation processes the peripheral chemoreceptors of test animals were stimulated, which resulted in changed respiratory rate and depth. Where are these receptors localized?

{=Capillary bed, aortic arch, carotid sinus
~Capillary bed, carotid sinus
~Atria, carotid sinus
~Aortic arch, carotid sinus
~Capillary bed, aortic arch}

After an abortion a 25-year-old woman developed oliguria, anuria, and increasing azotemia. The patient died of acute renal failure. Autopsy revealed degeneration and necrosis of the convoluted renal tubules epithelium. What disease was the cause of death in this case?

{=Chronic glomerulonephritis
~Acute pyelonephritis
~Acute necrotizing nephrosis
~Renal amyloidosis
~Rapidly progressive glomerulonephritis}

A patient on the 2nd day after cardiac infarction presents with acute decrease of systolic blood pressure down to 60 mm Hg with tachycardia 140/min., dyspnea, loss of consciousness. What mechanism is essential in the pathogenesis of shock developed in this case?

{=Increased myocardial excitability caused by products of necrotic disintegration
~Development of paroxysmal tachycardia
~Development of anaphylactic reaction to myocardial proteins
~Decreased cardiac output
~Decreased circulating blood volume}

For biochemical diagnostics of cardiac infarction it is necessary to determine activity of a number of enzymes and their izoenzymes in the blood. What enzyme assay is considered to be optimal for confirming or ruling out cardiac infarction at the early stage, after the patient develops thoracic pain?

{=LDH1 isoenzyme
~Creatine kinase MM isoenzyme}
Creatine kinase MB isoenzyme
LDH5 isoenzyme
Cytoplasmic isoenzyme of aspartate aminotransferase

A 56-year-old man presents with parathyroid tumor. The following is observed: muscle weakness, osteoporosis, bone deformation, nephroliths consisting of oxalates and phosphates. The patient’s condition is caused by:

- Increased secretion of thyroxin
- Increased secretion of parathyroid hormone
- Increased secretion of calcitonin
- Decreased secretion of parathyroid hormone
- Decreased secretion of calcitriol

There is increased activity of AST, LDH1, LDH2, and CPK in the patient’s blood. Pathological process most likely occurs in the:

- Liver
- Adrenal glands
- Skeletal muscles
- Kidneys
- Heart

A patient with autoimmune thyroiditis has been prescribed a peptide hormonal agent. Specify this agent:

- Trimethoprim
- Triquilar
- Tamoxifen
- L-thyroxin
- Triamcinolone

Red bone marrow has been damaged under radioactive emission of 5 Gy. What determines the red bone marrow sensitivity towards ionizing radiation?

- High content of peroxides in the cells
- High content of free radicals in the cells
- Intensive cell division
- Radiosensitizers in the cells
- Destructive effect of radiotoxins on DNA synthesis

A 40-year-old patient suffers from intolerance of dairy products. This condition has likely developed due to insufficiency of the following digestive enzyme:

- Amylase
- Lactase
- Maltase
- Lipase
- Invertase

After examining a patient a doctor recommended him to exclude rich meat and vegetable broths, spices, and smoked products from the diet, since the patient was found to have:

- Reduced motility of the gastrointestinal tract
- Reduced secretion of hydrochloric acid by the stomach glands
- Increased secretion of hydrochloric acid by the stomach glands
- Reduced salivation
- Biliary dyskinesia
Roentgenologically confirmed obstruction of common bile duct resulted in preventing bile from inflowing to the duodenum. What process is likely to be disturbed?
-{=Carbohydrate hydrolysis
~Protein absorption
~Fat emulgation
~Hydrochloric acid secretion in stomach
~Salivation inhibition}

Typical signs of food poisoning caused by C. botulinum include diplopia, swallowing and respiration disorders. These signs develop due to:
-{=Enterotoxic shock development
~Enterotoxin action
~Exotoxin action
~Adenylate cyclase activation
~Adhesion of the agent to enterocyte receptors}

In the course of an experiment researchers stimulate a branch of the sympathetic nerve that innervates heart. What alterations of cardiac activity should be registered?
-{=Increase in arterial pressure
~Increase in heart rate and heart force
~Increase in heart rate
~Decrease in heart force
~Increase in heart force}

During tooth brushing it is not uncommon for oral mucosa to be injured. However, bleeding quickly stops on its own. What substances in saliva quickly staunch the flow of blood during minor oral injuries?
-{=Lipolytic enzymes
~Mineral substances
~Lysozyme and mucin
~Procoagulants
~Amylolytic enzymes}

An athlete (a long-distance runner) during competition has developed acute heart failure. This pathology developed due to:
-{=Coronary blood flow disturbance
~Pericardial pathology
~Pressure overload
~Volume overload
~Direct damage to myocardium}

A 50-year-old man, who has been suffering for a long time from viral hepatitis, developed mental impairments, impairments of consciousness, and motor disturbances (tremor, ataxia, etc.). What is the mechanism of such condition?
-{=Decreased synthesis of albumins and globulins in the liver
~Insufficient phagocytic function of stellate macrophages
~Decreased detoxification function of the liver
~Disturbed lipid exchange in the liver
~Alterations in the lipid composition of blood}

A 30-year-old man had suffered a thoracic trauma in a traffic accident, which resulted in disturbance
of external respiration. What ventilatory failure can be observed in this case?

\{=\text{Dysregulatory}\
\text{~Mixed type}\
\text{~Pulmonary restrictive}\
\text{~Obstructive}\
\text{~Extrapulmonary restrictive}\}

A 30-year-old man with glomerulonephritis has developed nephrotic syndrome. What symptom invariably accompanies nephrotic syndrome?

\{=\text{Glucosuria}\
\text{~Anemia}\
\text{~Azotemia}\
\text{~Proteinuria}\
\text{~Low urine specific gravity}\}

A patient is diagnosed with pancreatitis. Starch decomposition disturbance occurs in the patient’s intestine due to deficiency of the following pancreatic enzyme:

\{=\text{Carboxypeptidase}\
\text{~Amylase}\
\text{~Chymotrypsin}\
\text{~Tripsin}\
\text{~Lipase}\}

An experimental animal, a dog, received a weak solution of hydrochloric acid through a tube inserted into the duodenum. Primarily it will result in increased secretion of the following hormone:

\{=\text{Secretin}\
\text{~Gastrin}\
\text{~Histamine}\
\text{~Cholecystokinin}\
\text{~Neurotensin}\}

A woman presents with edemas. In her urine there is a large amount of protein excreted. What nephron segment is functionally disturbed in this case?

\{=\text{Renal corpuscle}\
\text{~Proximal convoluted tubule}\
\text{~Distal convoluted tubule}\
\text{~Descending limb of loop of Henle}\
\text{~Ascending limb of loop of Henle}\}

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

\{=\text{Gluconeogenesis}\
\text{~Urea synthesis}\
\text{~Bilirubin synthesis}\
\text{~Hippuric acid synthesis}\
\text{~Uric acid synthesis}\}

A patient with glossitis presents with disappearance of lingual papillae, reddening and burning pain in the tongue. Blood test: erythrocytes - 2.2 · 1012/l, hemoglobin - 103 g/l, color index - 1.4. What type of anemia is it?

\{=\text{B12 folate-deficiency}\
\text{~Iron deficiency}\}
A 13-year-old girl is an in-patient at the hematology department of the regional children’s hospital. She was diagnosed with iron-deficiency anemia. What type of hypoxia does this patient have?

{=Hemic
~Circulatory
~Tissue
~Respiratory
~Mixed}

A 55-year-old man was diagnosed with acute glomerulonephritis. Name the main mechanism of anemia development in this case:

{=Decreased erythropoietin synthesis
~Decreased glomerular filtration
~Decreased synthesis of renal prostaglandins
~Renal azotemia
~Decreased tubular reabsorption}

A newborn failed to take his first breath. Autopsy revealed that despite unobstructed airways the lungs of the newborn were unable to stretch. What is the most likely cause of this condition?

{=Absence of surfactant
~Bronchial narrowing
~Bronchial rupture
~Pleural thickening
~Alveolar enlargement}

A 30-year-old woman complains of intense thirst and dryness of the mouth that developed after a severe emotional shock. Laboratory analysis revealed increase of the patient’s blood sugar level up to 10 mmol/L. What endocrine gland is affected in the patient?

{=Pancreas
~Thyroid gland
~Gonads
~Adrenal glands
~Pineal gland}

Due to trauma the patient’s parathyroid glands have been removed, which resulted in inertness, thirst, sharp increase of neuromuscular excitability. Metabolism of the following substance is disturbed:

{=Calcium
~Manganese
~Chlorine
~Molybdenum
~Zinc}

A patient presents with high content of vasopressin (antidiuretic hormone) in the blood. What changes in the patient’s diuresis will occur?

{=Oliguria
~Polyuria
~Anuria
~Glycosuria}
A patient presents with osteoporosis; hypercalcemia and hypophosphatemia are observed in the patient’s blood. What is the cause of this condition?

\{=Increased parathormone secretion
~Increased thyroxin secretion
~Inhibited parathormone secretion
~Increased corticosteroid secretion
~Inhibited corticosteroid secretion\}

Detoxification of bilirubin occurs in the membranes of endoplasmic reticulum of hepatocytes. Bilirubin is secreted by hepatocytes into bile for the most part as:

\{=Bilirubin diglucuronide
~Unconjugated bilirubin
~Bilirubin monoglucuronide
~Indirect reacting bilirubin
~\}

In the course of experiment the vagus nerve of the test animal was severed, which resulted in the animal developing constant tachycardia. What effect of parasympathetic nervous system on cardiac performance is demonstrated by this experiment?

\{=Inhibition
~Stimulation
~Stimulus summation
~Paradoxical response
~Mixed effect\}

A victim of a traffic accident has lost thoracic respiration but retaines diaphragmal. The spinal cord is most likely to be damaged at:

\{=VI-VII cervical segments
~I-II cervical segments
~XI-XII cervical segments
~I-II lumbar segments
~I-II sacral segments\}

A 50-year-old man declined anaesthesia during dental manipulations. Due to severe pain he developed anuria caused by acute increase in production of:

\{=Adrenaline
~Renin
~Thymosin
~Thyroxin
~Glucagon\}

After spinal trauma the patient presents with absence of voluntary movements and tendon reflexes; sensitivity is retained only in the lower extremities. What is the mechanism of these disturbances and what part of the spine was injured?

\{=Spinal shock, thoracic spine
~Spinal shock, cervical spine
~Peripheral paralysis, cervical spine
~Central paralysis, coccyx
~\}
A man has developed downturned mouth and smoothed out nasolabial fold due to influenza complication. What nerve is damaged?
- Facial nerve
- Maxillary nerve
- Mandibular nerve
- Trochlear nerve
- Oculomotor nerve

A 20-year-old woman came to the doctor with complaints of general weight loss, loss of appetite, weakness, skin discoloration resembling bronze tan. In addition to hyperpigmentation, examination in the hospital revealed bilateral adrenal tuberculosis. What substance leads to skin hyperpigmentation, when accumulated excessively?
- Melanin
- Bilirubin
- Hemozoin
- Lipofuscin
- Adrenochrome

Erythrocytes of the patient with hemolytic anemia present with significant decrease of pyruvate kinase activity. What metabolic process is disturbed in this case?
- Glycolysis
- Glycogenolysis
- Gluconeogenesis
- Pentose-phosphate pathway of glucose oxidation
- Glycogen synthesis

When determining comparative tissue radiosensitivity, it was revealed that different tissues have different level of sensitivity toward ionizing radiation. What tissue of those listed below is the most radiosensitive?
- Hematopoietic
- Cartilaginous
- Bone
- Muscular
- Nerve

A 28-year-old patient complains of frequent gingival hemorrhages. Blood test revealed the clotting factor (prothrombin) deficiency. What phase of blood coagulation is impaired in this patient?
- Thrombin generation
- Vascular-platelet haemostasis
- Clot retraction
- Fibrinolysis

Increased stimulation rate of isolated heart of a rabbit leads to incomplete relaxation of the heart ventricles due to:
- Calcium accumulation in cardiomyocytes
- Increased sodium content in cardiomyocytes
- Inhibition of K – Na pump
- Increased potassium content in cardiomyocytes
- Increased potassium content in the interstitial tissue

A 25-year-old man has lost all sensitivity due to damage of his peripheral nerves. Name this
A 60-year-old woman with hepatocirrhosis developed hemorrhagic syndrome. What mechanism leads to the development of this condition?

\{= Decreased synthesis of prothrombin and fibrinogen
~ Increased portal venous pressure
~ Decreased blood oncotic pressure
~ Reduction of hepatic glycogen stores
~ Emergence of neurotoxins in the blood \}

Dopamine precursor - dioxypheynylanine (DOPA) - is used in treatment of Parkinson’s disease. This active substance is produced from the following amino acid:

\{= Tyrosine
~ Alanine
~ Cysteine
~ Histidine
~ Tryptophan \}

An 84-year-old patient suffers from parkinsonism. One of the pathogenetic development elements of this disease is deficiency of a certain mediator in some of the brain structures. Name this mediator:

\{= Dopamine
~ Adrenaline
~ Noradrenaline
~ Histamine
~ Acetylcholine \}

A tumor is detected in one of the regions of the patient’s brain, resulting in the patient’s inability to maintain normal body temperature. What brain structure is damaged?

\{= Hypothalamus
~ Thalamus
~ Cerebellum
~ Striatum
~ Substantia nigra \}

An experiment was conducted to measure the threshold of tactile receptors stimulation with various stimuli. What stimulus will have the lowest threshold?

\{= Mechanical stimulus
~ Chemical stimulus
~ Photic stimulus
~ Cold stimulus
~ Heat stimulus \}

Miners’ work at the coal-face often leads to development of anthracosis. What type of respiratory failure arises along with this disease?

\{= Restrictive
~ Obstructive \}
During ultrasound a patient with atherosclerosis was diagnosed with bilateral stenosis of the renal arteries. Specify the bioactive substance that is the key pathogenetic link in the development of arterial hypertension in this case:

\{-\text{Renin} \\
\text{Adrenaline} \\
\text{Vasopressin} \\
\text{Cortisol} \\
\text{Thyroxin}\}

A 72-year-old man with hepatocirrhosis developed hepatic coma. Its development is caused by the substances, that are being neutralized in the liver, entering into general circulation through portacaval shunts (portal hypertension syndrome) and necrosis of hepatic cells. What type of hepatic coma is characterized by these presentations?

\{-\text{Mixed} \\
\text{Parenchymatous} \\
\text{Shunt} \\
\text{Hepatocellular} \\
\text{Ketoacidotic}\}

After a traffic accident a man presents with severe blood loss, consciousness disturbance, low blood pressure, as well as compensatory activation of the reninangiotensin system, which results in:

\{-\text{Hyperproduction of aldosterone} \\
\text{Increased blood coagulation} \\
\text{Intensification of erythropoiesis} \\
\text{Hyperproduction of vasopressin} \\
\text{Intensification of heart contractions}\}

Laboratory analysis revealed UDPglucuronyl transferase deficiency in the patient. What blood values can confirm this enzymopathy?

\{-\text{Hyperbilirubinemia} \\
\text{Indicanuria} \\
\text{Phenylketonuria} \\
\text{Ketoacidosis} \\
\text{Uremia}\}

Autopsy of a 72-year-old man with recurrent transmural myocardial infarction revealed his epicardium and pericardium membranes to be swollen, thickened, coarse, as if covered in hair. Name the type of inflammation that occurred in the cardiac membranes:

\{-\text{Croupous} \\
\text{Diphtheritic} \\
\text{Serous} \\
\text{Suppurative} \\
\text{Catarrhal}\}

A patient came to the doctor with complaints of general weakness and sleep disturbances. Objectively the patient’s skin is yellow. In blood there is increased concentration of direct bilirubin and bile acids. Acholic stool is observed. What condition can be characterized by these changes?

\{-\text{Mechanical jaundice}\}
- Hemolytic jaundice
- Parenchymatous jaundice
- Familial nonhemolytic (Gilbert’s) syndrome
- Chronic cholecystitis