

№	крок 2023
Topic	physiology of blood
Task	What internal organ plays the largest role in humoral regulation of erythropoiesis?
Correct answer	Kidneys
B	Lungs
C	Liver
D	Pancreas
E	Gastrointestinal tract
№	крок 2023
Topic	physiology of breathing
Task	A person entered a room with increased levels of carbon dioxide in the air. How will the breathing of this person change?
Correct answer	Respiration rate and depth will increase
B	Respiration depth will decrease
C	Respiration rate will decrease
D	Respiration depth will increase
E	Respiration rate will increase
№	крок 2023
Topic	physiology of hormones
Task	The height of a 10-year-old child is 178 cm, while the child's weight is 64 kg. What endocrine gland is dysfunctional in the child, causing this condition?
Correct answer	Pituitary gland
B	Parathyroid gland
C	Gonads
D	Thyroid gland
E	Adrenal glands
№	крок 2023
Topic	physiology of the sensory system
Task	A patient presents with impaired twilight vision. What vitamin preparation should be prescribed to this patient?
Correct answer	Retinol acetate
B	Ascorbic acid
C	Pyridoxine hydrochloride
D	Nicotinic acid

E	Cyanocobalamin
№	крок 2023
Topic	physiology of excretion
Task	Laboratory testing detects glucose in the urine of an 18-year-old patient, while glucose levels in the patient's blood plasma are normal. What is the likely cause of this disorder?
Correct answer	Tubular reabsorption
B	Insulin secretion
C	Secretion of glucocorticoids
D	Ihbular secretion
E	Glomerular filtration
№	крок 2023
Topic	physiology of hormones
Task	Residents of areas with a cold climate have increased blood levels of a certain hormone that has an adaptive thermoregulatory value. What hormone is it?
Correct answer	Thyroxine
B	Insulin
C	Glucagon
D	Somatotropin
E	Cortisol
№	крок 2023
Topic	physiology of thermoregulation
Task	Despite profuse sweating, a person feels stuffy and hot in a tropical forest at a relatively low air temperature (26-27°C). Why is profuse sweating not an effective method of heat transfer in this case?
Correct answer	High air humidity reduces sweat evaporation
B	Air temperature reduces sweat evaporation
C	High air humidity reduces radiation
D	Air temperature increases sweat evaporation
E	High air humidity increases sweat evaporation
№	крок 2023
Topic	physiology of excitable tissues
Task	In an experiment, a neuromuscular preparation of frog was treated with a curare-like substance. As a result, muscle contractions in response to electrical stimulation of the nerve disappeared. What function of the muscle cell membrane is

Correct answer	Reception of mediators in the neuromuscular synapse
B	Creating a barrier between the intracellular environment and the surrounding intercellular fluid
C	Creation of electric potentials on the both sides of the membrane
D	Maintenance of the internal cellular structure, its cytoskeleton
E	Maintenance of different permeability for different substances
№	крок 2023
Topic	physiology of the central nervous system
Task	As a result of cerebral hemorrhage, the patient developed impaired speech perception (sensory aphasia). What brain structure is likely to be damaged in this case?
Correct answer	Superior temporal gyrus
B	Inferior frontal gyrus
C	Inferior temporal gyrus
D	Postcentral gyrus
E	Superior frontal gyrus
№	крок 2023
Topic	physiology of blood
Task	A patient presents with a sharp decrease in oncotic pressure and albumin levels in the blood plasma. What would be the result of this condition?
Correct answer	Reduced ESR
B	Increased blood density
C	Increased blood volume
D	Reduced diuresis
E	Edema
№	крок 2023
Topic	physiology of ECG
Task	Analysis of the patient's ECG recorded in the 1, II, and III standard leads shows that the P wave is positive in each one of them. What does it indicate?
Correct answer	Direction of atrial depolarization
B	Atrial depolarization rate
C	Pumping function of the left side of the heart
D	Mitral valve condition
E	Ventricular depolarization rate

№	крок 2023
Topic	physiology of hormones
Task	Human brain produces endogenous peptides that are similar to morphine and can reduce pain perception. Select such peptides from the list below.
Correct answer	Endorphins
B	Libcrins
C	Oxytocin
D	Statins
E	Vasopressin
№	крок 2023
Topic	physiology of blood
Task	A patient complains of frequent bleeding from the gums. Blood test detects deficiency of blood coagulation factor II (prothrombin). What phase of blood coagulation is primarily disturbed in this patient?
Correct answer	Thrombin formation
B	Fibrinolysis
C	Fibrin formation
D	Prothrombinase formation
E	Clot retraction
№	крок 2023
Topic	physiology of the central nervous system
Task	In an experiment, certain nuclei of the hypothalamus were destroyed in homeothermic animals, which resulted in them being unable to maintain their body temperature. What nuclei were destroyed?
Correct answer	Posterior hypothalamic nuclei
B	Supraoptic nuclei
C	Medial hypothalamic nuclei
D	Lateral hypothalamic nuclei
E	
№	крок 2023
Topic	physiology of the central nervous system
Task	A child with hemorrhagic syndrome was diagnosed with hemophilia B. What coagulation factor is deficient in this case, causing this type of hemophilia in the patient?
Correct answer	IX (Christmas factor)

B	VIII (antihemophilic globulin)
C	II (prothrombin)
D	XI (prothromboplastin)
E	XII (Hageman factor)
№	крок 2023
Topic	physiology of hormones
Task	Examination of a 32-year-old patient detects a disproportional structure of the skeleton and enlarged brow ridges, nose, lips, tongue, jawbones, and feet. What is the likely cause of the development of these disorders?
Correct answer	Increased levels of somatotrophic hormone
B	Increased thyroxine levels
C	Decreased insulin levels
D	Increase catecholamine levels
E	Increase glucagon levels
№	крок 2023
Topic	physiology of digestion
Task	Problems with the processes of lipid breakdown in small intestine are caused by disturbed lipase activity. What factor activates
Correct answer	Bile acids
B	Enterokinase
C	Na ⁺ salts
D	Pepsin
E	Hydrochloric acid
№	крок 2023
Topic	physiology of the central nervous system
Task	Family of a 52-year-old man brought him to a doctor with complaints that he does not understand spoken words, despite being able to speak himself. He cannot read written text, as well. Where is the brain damage localized in this case?
Correct answer	In the cortex of the posterior part of the superior temporal gyrus
B	In the cortex of the posterior part of the inferior frontal gyrus
C	In the hippocampus
D	In the cortex of the anterior part of the superior temporal gyrus
E	
№	крок 2023
Topic	metabolic physiology

Task	A 14-year-old patient has a positive nitrogen balance. What is the likely cause of this condition?
Correct answer	Body growth
B	Significant physical exertion
C	Starvation
D	Low-protein diet
E	Emotional stress
№	крок 2023
Topic	physiology of hormones
Task	A patient presents with impaired water reabsorption in the kidneys, which is directly related to disturbed secretion of a certain hormone. Name this hormone
Correct answer	Vasopressin
B	Parathyroid hormone
C	Thyroid calcitonin
D	Natriuretic hormone
E	Aldosterone
№	крок 2023
Topic	physiology of hormones
Task	A 55-year-old patient is being monitored by an endocrinologist for disturbed endocrine function of the pancreas, which manifests as a decrease in glucagon levels in the blood. What pancreatic cells are dysfunctional in this case?
Correct answer	Alpha cells of the islets of Langerhans
B	PP cells of the islets of Langerhans
C	Delta-1 cells of the islets of Langerhans
D	Delta cells of the islets of Langerhans
E	Beta cells of the islets of Langerhans
№	крок 2023
Topic	physiology of hormones
Task	Examination of a patient shows the following: blood pressure — 180/110 mm Hg, heart rate — 95/min. X-ray detects narrowing of one of the renal arteries. What system was activated, causing the hypertensive state in this patient?
Correct answer	Renin-angiotensin system
B	Immune system
C	Sympathoadrenal system
D	Kinin system

E	Hemostatic system
№	крок 2023
Topic	metabolic physiology
Task	Vitamin A deficiency causes impaired twilight vision. What cells have this receptor function?
Correct answer	Neurosensory rod cells
B	Bipolar neurons
C	Neurosensory cone cells
D	Retinal horizontal cells
E	Ganglionic neurons
№	крок 2017, 2016
Topic	EXCITABLE TISSUES
Task	What kind of muscle contraction occurs in an upper limb during an attempt to lift a load beyond one's strength?
Correct answer	Isometric
B	Isotonic
C	Auxotonic
D	Phasic
E	Single
№	крок 2017, 2014
Topic	SYSTEM OF BLOOD
Task	A 3-year-old boy with pronounced hemorrhagic syndrome has no anti-hemophilic globulin A (factor VIII) in the blood plasma. Hemostasis has been impaired at the following stage:
Correct answer	Internal mechanism of prothrombinase activation
B	External mechanism of prothrombinase activation
C	Conversion of prothrombin to thrombin
D	Conversion of fibrinogen to fibrin
E	Blood clot retraction
№	крок 2017
Topic	THERMOREGULATION
Task	A person is in a room with air temperature of $38^{\circ}C$ and relative air humidity of 50%. What type of heat transfer ensures maintenance of constant body core temperature under these conditions?
Correct answer	Evaporation

B	Radiation
C	Conduction and convection
D	Convection
E	-
№	krok 2017, 2015
Topic	RESPIRATORY SYSTEM
Task	Electrical activity of neurons is being measured. They fire prior to and at the beginning of inhalation. Where are these neurons
Correct answer	Medulla oblongata
B	Diencephalon
C	Mesencephalon
D	Spinal cord
E	Cerebral
№	krok 2017
Topic	Heart
Task	Investigation of an isolated cardi-ac myocyte determined that it does not generate excitation impulses automati-cally, which means this cardiac myocyte was obtained from the following cardiac structure:
Correct answer	Ventricles
B	Sinoatrial node
C	Atrioventricular node
D	His' bundle
E	Purkinje's fibers
№	krok 2017
Topic	SYSTEM OF EXCRETION
Task	A man presents with glomerular fi-ltration rate of 180 ml/min., while norm is ± 25 ml/min. The likely cause of it is the
Correct answer	Plasma oncotic pressure
B	Effective filtration pressure
C	Hydrostatic blood pressure in the glomerular capillaries
D	Renal blood flow
E	Permeability of the renal filter
№	krok 2017
Topic	CENTRAL NERVOUS SYSTEM

Task	During experiment a part of the brain was extracted, which resulted in asynergy and dysmetria development in the test animal. What part of the brain was extracted in the animal?
Correct answer	Cerebellum
B	Frontal lobe
C	Parietal lobe
D	Mesencephalon
E	Reticulum
№	krok 2017, 2015
Topic	SYSTEM OF BLOOD
Task	A woman with the III (B), Rh (-) blood group gave birth to a child with the II (A) blood group. The child is diagnosed with hemolytic disease of newborn caused by rhesus incompatibility. What blood group and Rh are likely in the father?
Correct answer	II (A), Rh (+)
B	I (0), Rh (+)
C	III (B), Rh (+)
D	I (0), Rh (-)
E	II (A), Rh (-)
№	krok 2017
Topic	REGULATION OF CARDIAC ACTIVITY, REGULATION OF HAEMODYNAMICS
Task	A short-term physical load resulted in reflex increase of heart rate and systemic arterial pressure in a person. What receptor activation was the most contributory to inducing the pressor reflex?
Correct answer	Proprioceptors of the working muscles
B	Vascular chemoreceptors
C	Vascular volume receptors
D	Vascular baroreceptors
E	Hypothalamic thermoreceptors
№	krok 2017
Topic	EXCITABLE TISSUES
Task	During experiment a skeletal muscle is being stimulated with a series of electrical impulses. What type of muscular contraction will develop, if each following impulse occurs within the relaxation period after the previous single contraction of the muscle?
Correct answer	Incomplete tetanus
B	Smooth tetanus
C	Series of single contractions

D	Muscle contracture
E	Asynchronous tetanus
№	krok 2017
Topic	CARDIOVASCULAR SYSTEM, HAEMODYNAMICS
Task	A 16-year-old girl fainted when she tri-ed to quickly change her position from hori-sontal to vertical. What caused the loss of consciousness in the girl?
Correct answer	Decreased venous return
B	Increased venous return
C	Increased central venous pressure
D	Decreased oncotic plasma pressure
E	Increased arterial pressure
№	krok 2017
Topic	SYSTEM OF BLOOD
Task	Blood test of an athlete shows the following: erythrocytes - $5 \cdot 10^{12}/l$, hemoglobin - 180 g/l, leukocytes - $7 \cdot 10^9/l$, neutrophils - 64%, basophils - 0,5%, eosinophils - 0,5%, monocytes - 8%, lymphocytes - 27%. These values primari-ly
Correct answer	Erythropoiesis
B	Leukopoiesis
C	Lymphopoiesis
D	Granulocytopoiesis
E	Immunogenesis
№	krok 2017, 2015
Topic	CARDIOVASCULAR SYSTEM, HAEMODYNAMICS
Task	Experimental stimulation of the sympathetic nerve branches that innervate the heart caused an increase in the force of heart contractions because the membrane of typical cardiomyocytes permitted an increase in:
Correct answer	Calcium ion entry
B	Calcium ion exit
C	Potassium ion exit
D	Potassium ion entry
E	Calcium and potassium ion exit
№	krok 2017
Topic	CARDIOVASCULAR SYSTEM, HAEMODYNAMICS

Task	The patient's ECG shows that in the second standard lead from the extremities the P waves are positive, their amplitude is 0,1 mV (norm is 0,05-0,25 mV), duration - 0,1 seconds (norm is 0,07-0,10 seconds). It can be concluded that the following process occurs normally in the cardiac atria:
Correct answer	Depolarization
B	Repolarization
C	Activation
D	Contraction
E	Relaxation
№	krok 2017, 2016
Topic	HIGHER NERVOUS ACTIVITY
Task	Pupil dilation occurs when a person steps from a light room into a dark one. What reflex causes such a reaction?
Correct answer	Sympathetic unconditioned reflex
B	Sympathetic conditioned reflex
C	Metasympathetic reflex
D	Parasympathetic unconditioned reflex
E	Parasympathetic conditioned reflex
№	krok 2017, 2016
Topic	CENTRAL NERVOUS SYSTEM
Task	A patient had a trauma that caused dysfunction of motor centers regulating activity of head muscles. These centers can normally be located in the following area of the cerebral cortex:
Correct answer	Inferior part of the precentral gyrus
B	Superior part of the precentral gyrus
C	Supramarginal gyrus
D	Superior parietal lobule
E	Angular gyrus
№	krok 2017
Topic	Sensory system
Task	A person with vitamin A deficiency develops twilight vision disturbance. Name the cells that fulfill this photoreceptor function:
Correct answer	Rod cells
B	Horizontal cells of retina
C	Bipolar neurons
D	Cone cells

E	Ganglionic nerve cells
№	krok 2017
Topic	THERMOREGULATION
Task	In hot weather ventilators are often used to normalize the microclimate in the heated rooms. It leads to intensified heat transfer from the human body by means of:
Correct answer	Convection
B	Conduction and convection
C	Conduction
D	Radiation
E	Evaporation
№	krok 2017
Topic	EXCITABLE TISSUES
Task	Cell membrane rest potential changed from -85 to -90 mV. It can be caused by activation of the following cell membrane
Correct answer	Potassium
B	Sodium
C	Potassium and sodium
D	Calcium
E	Potassium and calcium
№	krok 2017
Topic	RESPIRATORY SYSTEM
Task	During training session in the laboratory the students were performing spirometry on themselves. What indicator CANNOT be measured with this method?
Correct answer	Functional residual capacity
B	Vital capacity
C	Respiratory minute volume
D	Respiration rate
E	Maximal breathing capacity
№	krok 2017
Topic	ENDOCRINE SYSTEM
Task	A 30-year-old woman developed the signs of virilism (body hair growth, balding temples, disturbed menstrual cycle). What hormone can cause this condition when hyperproduced?
Correct answer	Testosterone

B	Estriol
C	Relaxin
D	Oxytocin
E	Prolactin
№	krok 2017
Topic	CARDIOVASCULAR SYSTEM, HAEMODYNAMICS
Task	During the sports competition a boxer received a strong blow to the abdomen, which caused a knockout due to a brief drop in blood pressure. What physiological mechanisms are the cause of this condition?
Correct answer	Stimulation of parasympathetic nerves
B	Alteration of transcapillary exchange
C	Ischemia of the central nervous system
D	Abrupt change in body fluid volume
E	Stimulation of sympathetic nerves
№	krok 2017
Topic	ENDOCRINE SYSTEM
Task	Corticosteroid hormones regulate the adaptation processes of the body as a whole to environmental changes and ensure the maintenance of internal homeostasis. What hormone activates the hypothalamo-pituitary-adrenal axis?
Correct answer	Corticoliberin
B	Somatoliberin
C	Somatostatin
D	Corticostatin
E	Thyroliberin
№	krok 2017
Topic	ENDOCRINE SYSTEM
Task	On examination the patient is found to have low production of adrenocorticotrophic hormone. How would this affect production of the other hormones?
Correct answer	Decrease adrenocorticotrophic hormones synthesis
B	Decrease hormone synthesis in the adrenal medulla
C	Decrease insulin synthesis
D	Increase sex hormones synthesis
E	Increase thyroid hormones synthesis
№	krok 2017, 2016

Topic	CENTRAL NERVOUS SYSTEM
Task	Parkinson's disease is caused by disturbance of dopamine synthesis. What brain structure synthesizes this neurotransmitter?
Correct answer	Substantia nigra
B	Globus pallidus
C	Corpora quadrigemina
D	Red nuclei
E	Hypothalamus
№	krok 2017, 2015
Topic	SYSTEM OF BLOOD
Task	Determining a patient's blood group with monoclonal test-reagents revealed positive agglutination reaction to anti-A and anti-B reagents, and negative reaction to anti-D. What blood group does this patient have?
Correct answer	IV (AB) Rh (-)
B	II (A) Rh (+)
C	III (B) Rh (-)
D	IV (AB) Rh (+)
E	I (0) Rh (+)
№	krok 2017
Topic	RESPIRATORY SYSTEM
Task	During ascent into mountains a person develops increased respiration rate and rapid heart rate. What is the cause of these
Correct answer	Decrease of O_2 partial pressure
B	Increase of CO_2 partial pressure
C	Increase of blood pH
D	Increase of nitrogen content in air
E	Increase of air humidity
№	krok 2016, 2015
Topic	HIGHER NERVOUS ACTIVITY
Task	When taking exams students often have dry mouth. The mechanism that causes this state results from the following reflexes:
Correct answer	Conditioned sympathetic
B	Unconditioned parasympathetic
C	Conditioned parasympathetic
D	Unconditioned sympathetic

E	Unconditioned peripheral
№	krok 2016, 2015
Topic	ENDOCRINE SYSTEM
Task	Atria of an experimental animal were superdistended with blood, which resulted in decreased reabsorption of Na^+ and water in renal tubules. This can be explained by the influence of the following factor on kidneys:
Correct answer	Natriuretic hormone
B	Aldosterone
C	Renin
D	Angiotensin
E	Vasopressin
№	krok 2016, 2015
Topic	THERMOREGULATION
Task	For people adapted to high external temperatures profuse sweating is not accompanied by loss of large volumes of sodium chloride. This is caused by the effect the following hormone has on perspiratory glands:
Correct answer	Aldosterone
B	Vasopressin
C	Cortisol
D	Tgyroxin
E	Natriuretic
№	krok 2016, 2014
Topic	THERMOREGULATION
Task	The processes of heat transfer in a naked person at room temperature have been studied. It was revealed that under these conditions the greatest amount of heat is transferred by:
Correct answer	Heat radiation
B	Heat conduction
C	Convection
D	Evaporation
E	
№	krok 2016
Topic	CENTRAL NERVOUS SYSTEM

Task	Due to destruction of certain structures of the brainstem an animal has lost its orientation reflexes in response to strong light stimuli. What structures were destroyed?
Correct answer	Anterior quadrigeminal bodies
B	Posterior quadrigeminal bodies
C	Red nuclei
D	Vestibular nuclei
E	Substantia nigra
№	krok 2016, 2014
Topic	SYSTEM OF EXCRETION
Task	Urine analysis has shown high levels of protein and erythrocytes in urine. This can be caused by the following:
Correct answer	Renal filter permeability
B	Effective filter pressure
C	Hydrostatic blood pressure in glomerular capillaries
D	Hydrostatic primary urine pressure in capsule
E	Oncotic pressure of blood plasma
№	krok 2016, 2014
Topic	RESPIRATORY SYSTEM
Task	A patient has a traumatic injury of sternocleidomastoid muscle. This has resulted in a decrease of the following value:
Correct answer	Inspiratory reserve volume
B	Expiratory reserve volume
C	Respiratory volume
D	Residual volume
E	Functional residual lung capacity
№	krok 2016
Topic	CENTRAL NERVOUS SYSTEM
Task	After a craniocerebral injury a patient has lost the ability to recognize shapes of objects by touch (stereognosis). What area of cerebral cortex normally contains the relevant center?
Correct answer	Superior parietal lobule
B	Inferior parietal lobule
C	Supramarginal gyrus
D	Postcentral gyrus
E	Angular gyrus

№	krok 2016
Topic	HIGHER NERVOUS ACTIVITY
Task	Cardiac arrest occurred in a patient during a surgery of the small intestine. What regulatory mechanisms resulted in the cardiac arrest in this case?
Correct answer	Unconditioned parasympathetic reflexes
B	Unconditioned sympathetic reflexes
C	Conditioned parasympathetic reflexes
D	Conditioned sympathetic reflexes
E	Metasympathetic reflexes
№	krok 2016
Topic	SYSTEM OF BLOOD
Task	Blood group of a 30-year-old man has been determined before a surgery. The blood was Rhesus-positive. Agglutination did not occur with standard 0 (I), A (II), and B (III) serums. The blood belongs to the following group:
Correct answer	0 (I)
B	A (II)
C	B (III)
D	AB (IV)
E	–
№	krok 2016, 2014
Topic	ENDOCRINE SYSTEM
Task	A patient has insufficient blood supply to the kidneys, which caused the development of pressor effect due to the constriction of arterial resistance vessels. This is the result of the vessels being greatly affected by the following substance:
Correct answer	Angiotensin II
B	Angiotensinogen
C	Renin
D	Catecholamines
E	Norepinephrine
№	krok 2016
Topic	CARDIOVASCULAR SYSTEM
Task	Experimental stimulation of sympathetic nerve branches that innervate heart caused an increase in force of heart contractions because membrane of typical cardiomyocytes permitted an increase in:
Correct answer	Calcium ion entry

B	Calcium ion exit
C	Potassium ion exit
D	Potassium ion entry
E	Calcium and potassium ion exit
№	krok 2016, 2012
Topic	EXCITABLE TISSUES
Task	Microelectrode technique allowed to register a potential following "all-or-none" law and capable of undecremental spreading. Specify this potential:
Correct answer	Action potential
B	Excitatory postsynaptic potential
C	Rest potential
D	Inhibitory postsynaptic potential
E	Receptor potential
№	krok 2016
Topic	CENTRAL NERVOUS SYSTEM
Task	A patient demonstrates functional loss of nasal halves of the retinas. What area of visual pathways is affected?
Correct answer	Optic chiasm
B	Left optic tract
C	Right optic tract
D	Left optic nerve
E	Right optic nerve
№	krok 2016
Topic	CENTRAL NERVOUS SYSTEM
Task	A patient with injury sustained to a part of the central nervous system demonstrates disrupted coordination and movement amplitude, muscle tremor during volitional movements, poor muscle tone. What part of the central nervous system was
Correct answer	Cerebellum
B	Medulla oblongata
C	Oliencephalon
D	Mesencephalon
E	Prosencephalon
№	krok 2016, 2014
Topic	CENTRAL NERVOUS SYSTEM

Task	A passenger of a fixed-run taxi has a sudden and expressed attack of tachycardia. A doctor travelling by the same taxi has managed to slow down his heart rate by pressing upon the eyeballs and thus causing the following reflex:
Correct answer	Dagnini-Aschner reflex
B	Bainbridge reflex
C	Holtz's reflex
D	Hering-Breuer reflex
E	Frank-Starling mechanism
№	krok 2016, 2013
Topic	ENDOCRINE SYSTEM
Task	A patient with signs of osteoporosis and urolithiasis has been admitted to an endocrinology department. Blood test revealed hypercalcemia and hypophosphatemia. These changes are associated with abnormal synthesis of the following hormone:
Correct answer	Parathyroid hormone
B	Calcitonin
C	Cortisol
D	Aldosterone
E	Calcitriol
№	krok 2016, 2013
Topic	ENDOCRINE SYSTEM
Task	A 30-year-old woman exhibits signs of virilism (growth of body hair, balding temples, menstrual disorders). This condition can be caused by overproduction of the following hormone:
Correct answer	Testosterone
B	Oestriol
C	Relaxin
D	Oxytocin
E	Prolactin
№	krok 2016
Topic	CARDIOVASCULAR SYSTEM
Task	Patient's systolic blood pressure is mm Hg, diastolic - 70 mm Hg. Such blood pressure is caused by decrease of the
Correct answer	Pumping ability of the left heart
B	Pumping ability of the right heart
C	Aortic compliance
D	Total peripheral resistance

E	Vascular tone
№	krok 2016
Topic	RESPIRATORY SYSTEM
Task	During recording of a spirogram a patient calmly exhaled. How do we call the volume of air remaining in the lungs?
Correct answer	Functional residual capacity
B	Pulmonary residual volume
C	Expiratory reserve volume
D	Tidal volume
E	Vital capacity of lungs
№	krok 2016
Topic	CENTRAL NERVOUS SYSTEM
Task	During experiment a dog has developed conditioned digestive reflex in response to a sound stimulus. This conditioned reflex will not be exhibited anymore after the extirpation of the following areas of the cerebral hemispheres:
Correct answer	Temporal lobe on both sides
B	Occipital lobe on one side
C	Parietal lobe on both sides
D	Temporal lobe on one side
E	Occipital lobe on both sides
№	krok 2015
Topic	CENTRAL NERVOUS SYSTEM
Task	A laboratory experiment on a dog was used to study central parts of audi-tory system. One of the mesencephalon structures was destroyed. The dog has lost the orienting response to auditory signals. What structure was destroyed?
Correct answer	Inferior colliculi of corpora quadrigemina
B	Superior colliculi of corpora quadrigemina
C	Substantia nigra
D	Reticular formation nuclei
E	Red nucleus
№	krok 2015
Topic	ENDOCRINE SYSTEM
Task	Prior to glucose utilization in cells it is transported inside cells from extracellular space through plasmatic membrane. This process is stimulated by the following hormone:
Correct answer	Insulin

B	Glucagon
C	Thyroxin
D	Aldosterone
E	Adrenalin
№	krok 2015
Topic	SYSTEM OF EXCRETION
Task	Glomerular filtration of a person, who has been starving for a long time, has increased by 20%. The most likely cause of filtration changes in the given conditions is:
Correct answer	Decrease of blood plasma oncotic pressure
B	Increase of systemic blood pressure
C	Increase of renal filter permeability
D	Increase of filtration factor
E	Increase of renal plasma flow
№	krok 2015
Topic	METABOLISM
Task	When measuring power inputs of a person by the method of indirect calorimetry the following results were obtained: oxygen consumption is 1000 ml and carbon dioxide production is 800 ml per minute. The person under examination has the following
Correct answer	0,8
B	1,25
C	0,9
D	0,84
E	1
№	krok 2015, 2014
Topic	SYSTEM OF BLOOD
Task	A patient is diagnosed with hereditary coagulopathy that is characterised by factor VIII deficiency. Specify the phase of blood clotting during which coagulation will be disrupted in the given case:
Correct answer	Thromboplastin formation
B	Thrombin formation
C	Fibrin formation
D	Clot retraction
E	-
№	krok 2015

Topic	ENDOCRINE SYSTEM
Task	A patient has insufficient blood supply to the kidneys, which has caused the development of pressor effect due to constriction of arterial resistance vessels. This condition results from the vessels being strongly affected by the following substance:
Correct answer	Angiotensin II
B	Angiotensinogen
C	Renin
D	Catecholamines
E	Norepinephrine
№	krok 2015
Topic	RESPIRATORY SYSTEM
Task	A doctor asked a patient to make a deep exhalation after a normal inhalation. What muscles contract during such exhalation?
Correct answer	Abdominal muscles
B	External intercostal muscles
C	Diaphragm
D	Trapezius muscles
E	Pectoral muscles
№	krok 2015, 2014
Topic	CENTRAL NERVOUS SYSTEM
Task	In a cat with decerebrate rigidity the muscle tone is to be decreased. This can be achieved by:
Correct answer	Destruction of the vestibular nuclei of Deiters
B	Stimulation of the otolithic vestibular receptors
C	Stimulation of the vestibular nuclei of Deiters
D	Stimulation of the vestibulocochlear nerve
E	Stimulation of the ampullar vestibular receptors
№	krok 2015, 2010
Topic	Sensory system
Task	Surface with an intact toad on it was inclined to the right. Tone of extensor muscles became reflectory higher due to the activation of the following receptors:
Correct answer	Vestibuloreceptors of utricle and saccule
B	Vestibuloreceptors of semicircular ducts
C	Mechanoreceptors of foot skin
D	Photoreceptors of retina

E	Proprioreceptors
№	krok 2015
Topic	CENTRAL NERVOUS SYSTEM
Task	A patient had a trauma that caused dysfunction of motor centres regulating activity of head muscles. In what parts of cerebral cortex can the respective centre normally be located?
Correct answer	Inferior part of precentral gyrus
B	Superior part of precentral gyrus
C	Supramarginal gyrus
D	Superior parietal lobule
E	Angular gyrus
№	krok 2015
Topic	CENTRAL NERVOUS SYSTEM
Task	In the course of an experiment thalamocortical tracts of an animal were cut. What type of sensory perception remained intact?
Correct answer	Olfactory
B	Auditory
C	Exteroreceptive
D	Visual
E	Nociceptive
№	krok 2015
Topic	SYSTEM OF BLOOD
Task	During determining the blood group according to the AB0 system with salt solutions of monoclonal antibodies agglutination did not occur with any of the solutions. What blood group is it?
Correct answer	0 (I)
B	A (II)
C	B (III)
D	AB (IV)
E	-
№	krok 2015
Topic	CARDIOVASCULAR SYSTEM
Task	During ventricular systole the cardiac muscle does not respond to additional stimulation because it is in the phase of:
Correct answer	Absolute refractoriness
B	Relational refractoriness

C	Hyperexcitability
D	Subnormal excitability
E	There is no correct answer
№	krok 2015
Topic	EXCITABLE TISSUES
Task	In the course of an experiment there has been increase in nerve conduction velocity. This may be caused by increase in concentration of the following ions that are present in the solution around the cell:
Correct answer	Na^+
B	K^+ and Cl^-
C	K^+ and Na^+
D	Ca^{2+} and Cl^-
E	Ca^{2+}
№	krok 2015
Topic	CARDIOVASCULAR SYSTEM
Task	In an elderly person the change in heart force and vessels physical properties were detected; they can be clearly observed on graphic recording of carotid pulse waves. What method was applied?
Correct answer	Sphygmography
B	Plethysmography
C	Rheography
D	Myography
E	Phlebography
№	krok 2015
Topic	EXCITABLE TISSUES
Task	Microelectrode analysis of nerve fi-ber bioelectrical activity revealed, that its membrane potential equals 90 mV. Its initial rest potential was 85 mV. What process occurs in this case?
Correct answer	Hyperpolarization
B	Depolarization
C	Repolarization
D	Overshoot
E	Supernormality
№	krok 2015

Topic	CENTRAL NERVOUS SYSTEM
Task	Parkinson's disease is caused by disruption of dopamine synthesis. What brain structure synthesizes this neurotransmitter?
Correct answer	Substantia nigra
B	Globus pallidus
C	Corpora quadrigemina
D	Red nucleus
E	Hypothalamus
№	krok 2015
Topic	SYSTEM OF BLOOD
Task	Determining a patient's blood group with monoclonal test-reagents revealed positive agglutination reaction to anti-A and anti-B reagents, and negative reaction to anti-D. What blood group does this patient have?
Correct answer	IV (AB) Rh^-
B	II (A) Rh^+
C	III (B) Rh^-
D	IV (AB) Rh^+
E	I (0) Rh^+
№	krok 2015
Topic	CENTRAL NERVOUS SYSTEM
Task	An experiment was aimed at testing flexor reflex in a spinal frog, which was initiated by simultaneous stimulation with isolated prethreshold electrical impulses. The frequency of those impulses was such, that the reflex occurred. What process in the nerve centers can be observed during this experiment?
Correct answer	Temporal summation
B	Spatial summation
C	Presynaptic summation
D	Postsynaptic summation
E	Threshold summation
№	krok 2015
Topic	Sensory system
Task	A soldier with explosion-caused trauma was delivered to a hospital. Examination revealed his tympanic membrane to be intact. What defense reflex prevented the tympanic membrane from rupturing?
Correct answer	Contraction of m. tensor tympani

B	Relaxation of m. tensor tympani
C	Contraction of m. auricularis anterior
D	Relaxation of m. auricularis anterior
E	Relaxation of m. stapedius
№	krok 2014
Topic	METABOLISM
Task	In a young man during exercise, the minute oxygen uptake and carbon dioxide emission equalled to 1000 ml. What substrates are oxidized in the cells of his body?
Correct answer	Carbohydrates
B	Proteins
C	Fats
D	Carbohydrates and fats
E	Carbohydrates and proteins
№	krok 2014
Topic	HIGHER NERVOUS ACTIVITY
Task	A sportsman spontaneously held breath for 40 seconds, which resulted in an increase in heart rate and systemic arterial pressure. Changes of these indicators are due to activation of the following regulatory mechanisms:
Correct answer	Unconditioned sympathetic reflexes
B	Unconditioned parasympathetic reflexes
C	Conditioned sympathetic reflexes
D	Conditioned parasympathetic reflexes
E	–
№	krok 2014
Topic	CARDIOVASCULAR SYSTEM,
Task	An animal experiment is aimed at studying the cardiac cycle. All the heart valves are closed. What phase of the cycle is characterized by this status?
Correct answer	Isometric contraction
B	Asynchronous contraction
C	Protodiastolic period
D	Rapid filling
E	Reduced filling
№	krok 2014

Topic	RESPIRATORY SYSTEM
Task	A patient has increased thickness of alveolarcapillary membrane caused by a pathologic process. The direct consequence will be reduction of the following value:
Correct answer	Diffusing lung capacity
B	Oxygen capacity of blood
C	Respiratory minute volume
D	Alveolar ventilation of lungs
E	Expiratory reserve volume
№	krok 2014
Topic	CENTRAL NERVOUS SYSTEM
Task	After a craniocerebral injury a patient is unable to recognize objects by touch. What part of brain has been damaged?
Correct answer	Postcentral gyrus
B	Occipital lobe
C	Temporal lobe
D	Precentral gyrus
E	Cerebellum
№	krok 2014
Topic	CENTRAL NERVOUS SYSTEM
Task	As a result of a craniocerebral injury, a patient has a decreased skin sensitivity. What area of the cerebral cortex is likely to be
Correct answer	Posterior central gyrus
B	Occipital region
C	Cingulate gyrus
D	Frontal cortex
E	Anterior central gyrus
№	krok 2014
Topic	DIGESTIVE SYSTEM
Task	A patient has a critical impairment of protein, fat and hydrocarbon digestion. Most likely it has been caused by low secretion of the following digestive juice:
Correct answer	Pancreatic juice
B	Saliva
C	Gastric juice
D	Bile

E	Intestinal juice
№	krok 2014
Topic	CENTRAL NERVOUS SYSTEM
Task	The receptors under study provide transfer of information to the cortex without thalamic involvement. Specify these receptors:
Correct answer	Olfactory
B	Tactile
C	Gustatory
D	Visual
E	Auditory
№	krok 2014
Topic	CENTRAL NERVOUS SYSTEM
Task	During an animal experiment, surgical damage of certain brain structures has caused deep prolonged sleep. What structure is most likely to cause such condition, if damaged?
Correct answer	Reticular formation
B	Basal ganglion
C	Red nuclei
D	Hippocampus
E	Cerebral cortex
№	krok 2014
Topic	CARDIOVASCULAR SYSTEM
Task	A 16-year-old female patient has fainted after quickly changing her body position from horizontal to vertical one. Which process from the ones listed below has caused the loss of consciousness in the first place?
Correct answer	Decreasing venous return
B	Increasing venous return
C	Increasing central venous pressure
D	Decreasing oncotic pressure of blood plasma
E	Increasing arterial pressure
№	krok 2014
Topic	EXCITABLE TISSUES
Task	When measuring total muscle action potential it was revealed that it was subject to the power-law relationship. The reason for this is that individual muscle fibers differ in:
Correct answer	Depolarization threshold

B	Diameter
C	Conduction velocity
D	Resting potential
E	Critical level of depolarization
№	krok 2014
Topic	CARDIOVASCULAR SYSTEM
Task	Experimental stimulation of the sympathetic nerve branches that innervate the heart caused an increase in force of heart contractions because the membrane of typical cardiomyocytes permitted an increase in:
Correct answer	Calcium ion entry
B	Calcium ion exit
C	Potassium ion exit
D	Potassium ion entry
E	Calcium and potassium ion exit
№	krok 2014
Topic	ENDOCRINE SYSTEM
Task	In the course of an experiment adenohipophysis of an animal has been removed. The resulting atrophy of thyroid gland and adrenal cortex has been caused by deficiency of the following hormone:
Correct answer	Tropic hormones
B	Thyroid hormones
C	Somatotropin
D	Cortisol
E	Thyroxin
№	krok 2014
Topic	CENTRAL NERVOUS SYSTEM
Task	As a result of an injury, the integrity of the anterior spinal cord root was broken. Specify the neurons and their processes that had been damaged:
Correct answer	Axons of motor neurons
B	Motor neuron dendrites
C	Axons of sensory neurons
D	Dendrites of sensory neurons
E	Dendrites of association neurons
№	krok 2014

Topic	Sensory system
Task	During the air and bone conducti-on tests it was revealed that in the left ear the tones were louder by bone conduction. This might be associated with the disease of:
Correct answer	Left middle ear
B	Right middle ear
C	Left inner ear
D	Right inner ear
E	Right external ear
№	krok 2014
Topic	CENTRAL NERVOUS SYSTEM
Task	As a result of a road accident a 37-year-old female victim developed urinary incontinence. What segments of the spinal cord had been damaged?
Correct answer	$S_2 - S_4$
B	$Th_1 - Th_5$
C	$L_1 - L_2$
D	$Th_2 - Th_5$
E	$Th_1 - L_1$
№	krok 2014
Topic	SYSTEM OF BLOOD
Task	When defining blood group according to the AB0 system, using salt solutions of monoclonal antibodies, agglutination didn't occur with any of the solutions. What blood group is it?
Correct answer	0 (I)
B	A (II)
C	B (III)
D	AB (IV)
E	-
№	krok 2014
Topic	CENTRAL NERVOUS SYSTEM
Task	A patient complains of pain in the heart area during acute attack of gastric ulcer. What vegetative reflex can cause this painful
Correct answer	Viscerovisceral reflex
B	Viscerodermal reflex

C	Visceromotor reflex
D	Dermatovisceral reflex
E	Motorvisceral reflex
№	krok 2014
Topic	RESPIRATORY SYSTEM
Task	A female patient, having visited the factory premises with lots of dust in the air for the first time, has got cough and burning pain in the throat. What respiratory receptors, when irritated, cause this kind of reaction?
Correct answer	Irritant receptors
B	Juxtacapillary (J) receptors
C	Stretch receptors of lungs
D	Proprioceptors of respiratory muscles
E	Thermoreceptors
№	krok 2014
Topic	HIGHER NERVOUS ACTIVITY
Task	In an experiment a dog had been conditioned to salivate at the sight of food and a flash of light. After conditioning the reflex, the light was then paired with the bell. The dog didn't start to salivate. What type of inhibition was observed?
Correct answer	External
B	Differential
C	Extinctive
D	Persistent
E	Protective
№	krok 2014, 2013
Topic	EXCITABLE TISSUES
Task	In course of an experiment there has been an increase in the nerve conduction velocity. This may be caused by an increase in the concentration of the following ions that are present in the solution around the cell:
Correct answer	Na^+
B	K^+ and Cl^-
C	K^+ and Na^+
D	Ca^{2+} and Cl^-
E	Ca^{2+}
№	krok 2014

Topic	SYSTEM OF BLOOD
Task	A patient has the oxyhemoglobin dissociation curve shifted to the left. What blood changes induce this condition?
Correct answer	Alkalosis, hypocapnia, temperature drop
B	Acidosis, hypercapnia, temperature rise
C	Acidosis, hypercapnia, temperature drop
D	Acidosis, hypocapnia, temperature rise
E	-
№	krok 2013
Topic	EXCITABLE TISSUES
Task	It has been experimentally proven that the excitation of the motor neurons of flexor muscles is accompanied by the inhibition of the motor neurons of extensor muscles. What type of inhibition underlies this phenomenon?
Correct answer	Reciprocal
B	Inhibition after excitation
C	Pessimal
D	Feedback
E	Lateral
№	krok 2013
Topic	HIGHER NERVOUS ACTIVITY
Task	A man sitting with his eyes closed, undergoes electroencephalography. What rhythm will be recorded on the EEG if there is an audible signal?
Correct answer	Beta rhythm
B	Theta rhythm
C	Delta rhythm
D	Alpha rhythm
E	Gamma rhythm
№	krok 2013
Topic	RESPIRATORY SYSTEM
Task	A patient with respiratory failure has blood pH of 7,35. $pC O_2$ test revealed hypercapnia. Urine pH test revealed an increase in the urine acidity. What form of acid-base imbalance is the case?
Correct answer	Compensated respiratory acidosis
B	Compensated metabolic acidosis

C	Decompensated metabolic acidosis
D	Compensated respiratory alkalosis
E	Decompensated respiratory alkalosis
№	krok 2013
Topic	THERMOREGULATION
Task	The temperature in a production room is $36^{\circ} C$. Relative air humidity is 80%. Under these conditions the human body transfers heat mainly through:
Correct answer	Sweat evaporation
B	Heat conduction
C	Radiation
D	Convection
E	–
№	krok 2013
Topic	CENTRAL NERVOUS SYSTEM
Task	As a result of a craniocerebral injury a patient has a decreased skin sensitivity. What area of the cerebral cortex may be
Correct answer	Posterior central gyrus
B	Occipital region
C	Cingulate gyrus
D	Frontal cortex
E	Anterior central gyrus
№	krok 2013
Topic	CARDIOVASCULAR SYSTEM
Task	During the fight, a man had a cardiac arrest due to the strong blow to the upper region of the anterior abdominal wall. Which of the following mechanisms has led to the cardiac arrest?
Correct answer	Parasympathetic unconditioned reflexes
B	Sympathetic unconditioned reflexes
C	Parasympathetic conditioned reflexes
D	Sympathetic conditioned reflexes
E	Peripheral reflexes
№	krok 2013
Topic	SYSTEM OF BLOOD

Task	A pregnant woman underwent AB0 blood typing. Red blood cells were agglutinated with standard sera of the I and II blood groups, and were not agglutinated with the III group serum. What is the patient's blood group?
Correct answer	B(III)
B	0(I)
C	A(II)
D	AB(IV)
E	
№	krok 2013
Topic	CARDIOVASCULAR SYSTEM
Task	An attack of tachycardia that occurred in a patient was stopped by pressing on his eyeballs. Which of the following reflexes underlies this phenomenon?
Correct answer	Aschner
B	Goltz
C	Bainbridge
D	Hering
E	Bernard's
№	krok 2013
Topic	CARDIOVASCULAR SYSTEM
Task	A 35-year-old male developed acute heart failure while running for a long time. What changes in the ionic composition can be observed in the cardiac muscle?
Correct answer	Accumulation of Na^+ and Ca^{2+} ions in the myocardium cells
B	Accumulation of K^+ and Mg^{2+} ions in the myocardium cells
C	Reduction of Na^+ and Ca^{2+} ions in the myocardium cells
D	Reduction of K^+ and Mg^{2+} ions in the extracellular space
E	Reduction of Na^+ and Ca^{2+} ions in the extracellular space
№	krok 2013
Topic	CENTRAL NERVOUS SYSTEM
Task	An animal has an increased tonus of extensor muscles. This is the result of enhanced information transmission to the motoneurons of the spinal cord through the following descending pathways:
Correct answer	Vestibulospinal
B	Medial corticospinal

C	Reticulospinal
D	Rubrospinal
E	Lateral corticospinal
№	krok 2013
Topic	ENDOCRINE SYSTEM
Task	A 19-year-old male was found to have an elevated level of potassium in the secondary urine. These changes might have been caused by the increase in the following hormone level:
Correct answer	Aldosterone
B	Oxytocin
C	Adrenaline
D	Glucagon
E	Testosterone
№	krok 2013
Topic	CARDIOVASCULAR SYSTEM
Task	ECG of a patient displays an abnormally long R wave (up to 0,18 s). This is caused by a decrease in the conduction velocity of the following heart structures:
Correct answer	Ventricles
B	Atria
C	Atrio-ventricular node
D	Right ventricle
E	Left ventricle
№	krok 2013
Topic	RESPIRATORY SYSTEM
Task	To assess the effectiveness of breathing in patients, the indicator of functional residual capacity is used. It includes the
Correct answer	Expiratory reserve volume and residual volume
B	Inspiratory reserve volume and residual volume
C	Inspiratory reserve volume, tidal volume, residual volume
D	Expiratory reserve volume and tidal volume
E	Inspiratory reserve volume and tidal volume
№	krok 2013
Topic	EXCITABLE TISSUES
Task	It is required to evaluate the level of tissue excitability. For this purpose one should determine:

Correct answer	Depolarization threshold
B	Resting potential
C	Critical level of depolarization
D	Action potential amplitude
E	Action potential duration
№	krok 2013
Topic	EXCITABLE TISSUES
Task	During ventricular systole, the cardiac muscle does not respond to additional stimulation because it is in the phase of:
Correct answer	Absolute refractoriness
B	Relational refractoriness
C	Hyperexcitability
D	Subnormal excitability
E	There is no correct answer
№	krok 2013
Topic	Sensory sistem
Task	A male working as a blacksmith has been tested for auditory acuity. The tests revealed 50% hearing loss in the low-frequency range and a near-normal auditory acuity in the high-frequency range. This condition has been caused by the damage to the following structures of the auditory system:
Correct answer	Corti's organ - closer to helicotrema
B	Corti's organ - closer to the oval foramen
C	Median part of the Corti's organ
D	Muscles of the middle ear
E	Eardrum
№	krok 2013
Topic	ENDOCRINE SYSTEM
Task	A 26-year-old woman at 40 weeks pregnant has been delivered to the maternity ward. Objectively: the uterine cervix is opened, but the contractions are absent. The doctor has administered her a hormonal drug to stimulate the labor. Name this
Correct answer	Oxytocin
B	Hydrocortisone
C	Estrone
D	Testosterone
E	ACTH

№	krok 2013
Topic	ENDOCRINE SYSTEM
Task	A patient who had been continuously taking drugs blocking the production of angiotensin II developed bradycardia and arrhythmia. A likely cause of these disorders is:
Correct answer	Hyperkalemia
B	Hypokalemia
C	Hypernatremia
D	Hypocalcemia
E	Hypercalcemia
№	krok 2013
Topic	ENDOCRINE SYSTEM
Task	As a result of a home injury, a patient suffered a significant blood loss, which led to a fall in blood pressure. Rapid blood pressure recovery after the blood loss is provided by the following hormones:
Correct answer	Adrenaline, vasopressin
B	Cortisol
C	Sex hormones
D	Oxytocin
E	Aldosterone
№	krok 2013
Topic	CENTRAL NERVOUS SYSTEM
Task	A patient complains that at the bare mention of the tragic events that once occurred in his life he experiences tachycardia, dyspnea and an abrupt rise in blood pressure. What structures of the CNS are responsible for these cardiorespiratory reactions
Correct answer	Cerebral cortex
B	Cerebellum
C	Lateral hypothalamic nuclei
D	Specific thalamic nuclei
E	Quadrigenina of mesencephalon
№	krok 2013
Topic	RESPIRATORY SYSTEM
Task	Analysis of the experimental spirogram of a 55-year-old person revealed a decrease in tidal volume and respiratory amplitude compared to the situation of ten years ago. The change in these indicators is caused by:
Correct answer	Decreased force of respiratory muscle contraction

B	Gas composition of the air
C	Physical build of a person
D	Height of a person
E	Body mass of a person
№	krok 2012
Topic	CENTRAL NERVOUS SYSTEM
Task	As a result of a cold a patient has the abnormal pain and temperature sensitivity of the frontal 2/3 of his tongue. Which nerve must have been damaged?
Correct answer	Trigeminus
B	Sublingual
C	Accessory
D	Vagus
E	Glossopharyngeal
№	krok 2012, 2008
Topic	sensory sYstem
Task	A 60 year old patient has impaired perception of high-frequency sounds. These changes were caused by damage of the following auditory analyzer structures:
Correct answer	Main cochlea membrane near the oval window
B	Main cochlea membrane near the helicotrema
C	Eustachian tube
D	Middle ear muscles
E	Tympanic membrane
№	krok 2012, 2010
Topic	HIGHER NERVOUS ACTIVITY
Task	Students who are taking examinations often have dry mouth. The mechanism that causes this state is the realization of the
Correct answer	Conditioned sympathetic
B	Unconditioned parasympathetic
C	Conditioned parasympathetic
D	Unconditioned sympathetic
E	Unconditioned peripheral
№	krok 2012, 2009
Topic	THERMOREGULATION

Task	The temperature of the ambient environment is 38° C and relative air humidity is 50%. What ways of heat emission provide maintaining a constant temperature of the human body?
Correct answer	Evaporation
B	Radiation
C	Heat conduction
D	Convection
E	Convection and conduction
№	krok 2012
Topic	DIGESTIVE SYSTEM
Task	A 30 year old woman has subnormal concentration of enzymes in the pancreatic juice. This might be caused by the hyposecretion of the following gastroi-ntestinal hormone:
Correct answer	Cholecystokininpancreozymin
B	Somatostatin
C	Secretin
D	Gastro-inhibiting peptide
E	Vaso-intestinal peptide
№	krok 2012
Topic	RESPIRATORY SYSTEM
Task	A patient has a trauma of sternocleidomastoid muscle. This caused a decrease in value of the following indicator of external
Correct answer	Inspiratory reserve volume
B	Expiratory reserve volume
C	Respiratory capacity
D	Residual volume
E	Functional residual lung capacity
№	krok 2012
Topic	ENDOCRINE SYSTEM
Task	A month after surgical constriction of rabbit's renal artery the considerable increase of systematic arterial pressure was observed. What of the following regulation mechanisms caused the animal's pressure change?
Correct answer	Angiotensin-II
B	Vasopressin
C	Adrenaline

D	Noradrenaline
E	Serotonin
№	krok 2012
Topic	ENDOCRINE SYSTEM
Task	A child has abnormal formation of tooth enamel and dentin as a result of low concentration of calcium ions in blood. Such abnormalities might be caused by deficiency of the following hormone:
Correct answer	Parathormone
B	Thyrocalcitonin
C	Thyroxin
D	Somatotropic hormone
E	Triiodothyronine
№	krok 2012
Topic	EXCITABLE TISSUES
Task	A sportsman was examined after an intensive physical activity. The examination revealed disorder of movement coordination but the force of muscle contractions remained the same. It can be explained by retarded speed of excitement conduction
Correct answer	Central synapses
B	Neuromuscular synapses
C	Efferent nerves
D	Afferent nerves
E	Conduction tracts
№	krok 2012
Topic	CENTRAL NERVOUS SYSTEM
Task	After a long training session a sportsman has developed fatigue accompanied by abrupt performance decrement. What link of the reflex arch was the fatigue initiated in?
Correct answer	Nerve centres
B	Afferent conductor
C	Receptors
D	Efferent conductor
E	Muscles
№	krok 2012, 2008
Topic	SYSTEM OF BLOOD
Task	Blood minute volume of a 30 year old woman at rest is 5 l/m. What blood volume is pumped through the pulmonary vessels

Correct answer	5 l
B	3,75 l
C	2,5 l
D	2,0 l
E	1,5 l
№	krok 2012
Topic	SYSTEM OF BLOOD
Task	A patient under test was subjected to a moderate physical stress. His minute blood volume amounted 10 l/min. What blood volume was pumped through his lung vessels every minute?
Correct answer	10 l/min
B	5 l/min
C	4 l/min
D	6 l/min
E	7 l/min
№	krok 2012
Topic	CENTRAL NERVOUS SYSTEM
Task	A patient presents with the following motor activity disturbances: tremor, ataxia and asynergia movements, dysarthria. The disturbances are most likely to be localized in:
Correct answer	Cerebellum
B	Basal ganglions
C	Limbic system
D	Brainstem
E	Medulla oblongata
№	krok 2012
Topic	ENDOCRINE SYSTEM
Task	A man has a considerable decrease in diuresis as a result of 1,5 l blood loss. The primary cause of such diuresis disorder is the hypersecretion of the following hormone:
Correct answer	Vasopressin
B	Corticotropin
C	Natriuretic
D	Cortisol
E	Parathormone

№	krok 2012
Topic	CENTRAL NERVOUS SYSTEM
Task	Vegetative abnormalities in the sleep, heat regulation, all kinds of metabolism, diabetes insipidus are developing in the patient due to growth of the tumour in the III ventricle of brain. Irritation of the nucleus of what part of the brain can cause this
Correct answer	Hypothalamus
B	Cerebral peduncles (cruces cerebri)
C	Mesencephalic tegmentum
D	Pons cerebelli
E	Medulla
№	krok 2012
Topic	ENDOCRINE SYSTEM
Task	Before the cells can utilize the glucose, it is first transported from the extracellular space through the plasmatic membrane inside them. This process is stimulated by the following hormone:
Correct answer	Insulin
B	Glucagon
C	Thyroxin
D	Aldosterone
E	Adrenalin
№	krok 2012
Topic	ENDOCRINE SYSTEM
Task	Parodontitis is treated with calcium preparations and a hormone that stimulates tooth mineralization and inhibits tissue resorption. What hormone is it?
Correct answer	Calcitonin
B	Parathormone
C	Adrenalin
D	Aldosterone
E	Thyroxine
№	krok 2012, 2010
Topic	CARDIOVASCULAR SYSTEM
Task	ECG of a patient shows prolongation of T-wave. This is caused by deceleration in ventricles of:
Correct answer	Repolarization
B	Depolarization and repolarization

C	Depolarization
D	Contraction
E	Relaxation
№	krok 2012
Topic	CENTRAL NERVOUS SYSTEM
Task	As a result of a trauma a patient has damaged anterior roots of spinal cord. What structures have been affected?
Correct answer	Axons of motoneurons and axons of neurons of lateral horns
B	Central processes of sensitive neurons of spinal ganglions
C	Peripheral processes of sensitive spinal ganglions
D	Axons of neurons of lateral horns
E	Dendrites of neurons of spinal ganglions
№	krok 2012
Topic	ENDOCRINE SYSTEM
Task	Atria of an experimental animal were superdistended by blood that resulted in decreased reabsorption of Na^+ and water in renal tubules. This can be explained by the influence of the following factor upon kidneys:
Correct answer	Natriuretic hormone
B	Aldosterone
C	Renin
D	Angiotensin
E	-
№	krok 2012, 2008
Topic	METABOLISM
Task	Power inputs of a man were measured. In what state was this man if his power inputs were lower than basal metabolism?
Correct answer	Sleep
B	Relaxation
C	Simple work
D	Nervous tension
E	Rest
№	krok 2012, 2011
Topic	METABOLISM
Task	A man is being measured power inputs on an empty stomach, in the lying position, under conditions of physical and psychic rest at a comfortable temperature. Power inputs will reach the maximum at:

Correct answer	5-6 p.m.
B	7-8 a.m.
C	10-12 a.m.
D	2-3 p.m.
E	3-4 a.m.
№	krok 2012, 2011
Topic	METABOLISM
Task	When measuring power inputs of a man by the method of indirect calorimetry the following results were obtained: 1000 ml oxygen consumption and 800 ml carbon dioxide liberation per minute. The man under examination has the following
Correct answer	0,8
B	1,25
C	0,9
D	0,84
E	1
№	krok 2012
Topic	CARDIOVASCULAR SYSTEM
Task	An isolated cell of human heart automatically generates excitement impulses with frequency of 60 times per minute. This cell was taken from the following heart structure:
Correct answer	Sinoatrial node
B	Atrium
C	Ventricle
D	Atrioventricular node
E	His' bundle
№	krok 2012
Topic	DIGESTIVE SYSTEM
Task	A 60 year old patient was found to have a dysfunction of main digestive enzyme of saliva. This causes the disturbance of primary hydrolysis of:
Correct answer	Carbohydrates
B	Fats
C	Proteins
D	Cellulose
E	Lactose

№	krok 2012
Topic	HAEMODYNAMICS
Task	A 49 year old woman spent a lot of time standing. As a result of it she got leg edema. What is the most likely cause of the
Correct answer	Increase in hydrostatic pressure of blood in veins
B	Decrease in hydrostatic pressure of blood in veins
C	Decrease in hydrostatic pressure of blood in arteries
D	Increase in oncotic pressure of blood plasma
E	Increase in systemic arterial pressure
№	krok 2012
Topic	EXCITABLE TISSUES
Task	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:
Correct answer	Acetylcholine
B	Noradrenaline
C	Dopamine
D	Serotonin
E	Glycine
№	krok 2012
Topic	ENDOCRINE SYSTEM
Task	A 5-month-old boy was hospitalized for tonic convulsions. He has a life-time history of this disease. Examination revealed coarse hair, thinned and fragile nails, pale and dry skin. In blood: calcium - 1,5 millimole/l, phosphor - 1,9 milli-mole/l. These changes are associated with:
Correct answer	Hypoparathyroidism
B	Hyperparathyroidism
C	Hyperaldosteronism
D	Hypoaldosteronism
E	Hypothyroidism
№	krok 2012, 2010
Topic	sensory system
Task	A 64 year old woman has impairment of twilight vision (hemeralopy). What vitamin should be recommended in the first place?
Correct answer	A

B	<i>B</i> ₂
C	<i>E</i>
D	<i>C</i>
E	<i>B</i> ₆
№	krok 2012, 2011
Topic	RESPIRATORY SYSTEM
Task	A doctor asked a patient to breath out fully after taking a normal breath. What muscles contract during such exhalation?
Correct answer	Abdominal muscles
B	External intercostal muscles
C	Diaphragm
D	Trapezius muscles
E	Pectoral muscles
№	krok 2012
Topic	CENTRAL NERVOUS SYSTEM
Task	A patient presents with dysfunction of cerebral cortex accompanied by epileptic seizures. He has been administered a biogenic amine synthetized from glutamate and responsible for central inhibition. What substance is it?
Correct answer	Gamma-amino butyric acid
B	Serotonin
C	Dopamine
D	Acetylcholine
E	Histamine
№	krok 2011
Topic	CARDIOVASCULAR SYSTEM
Task	Heart rate of a 30-year-old man under emotional stress reached 112 bpm. The reason for the heart rate increase is the altered condition of the following conducting system of heart:
Correct answer	Sinoatrial node
B	Purkinje's fibers
C	His' bundle branches
D	Atrioventricular node
E	His' bundle
№	krok 2011, 2009

Topic	CARDIOVASCULAR SYSTEM
Task	The minute blood volume in a patient with transplanted heart has increased as a result of physical activity. What regulative mechanism is responsible for these changes?
Correct answer	Catecholamines
B	Sympathetic unconditioned reflexes
C	Parasympathetic unconditioned reflexes
D	Sympathetic conditioned reflexes
E	Parasympathetic conditioned reflexes
№	krok 2011, 2008
Topic	CARDIOVASCULAR SYSTEM
Task	An aged man had raise of arterial pressure under a stress. It was caused by activation of:
Correct answer	Sympathoadrenal system
B	Parasympathetic nucleus of vagus
C	Functions of thyroid gland
D	Functions of adrenal cortex
E	Hypophysis function
№	krok 2011, 2009
Topic	ENDOCRINE SYSTEM
Task	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?
Correct answer	Reduced production of parathormone
B	Increased production of thyroxin
C	Increased production of calcitonin
D	Increased production of thyroliberin
E	Reduced production of thyroxin
№	krok 2011
Topic	DIGESTIVE SYSTEM
Task	A 30-year-old male patient with acute pancreatitis has been found to have a disorder of cavitary protein digestion. The reason for such condition can be the hyposynthesis and hyposecretion of the following enzyme:
Correct answer	Tripsin
B	Pepsin

C	Lipase
D	Dipeptidase
E	Amylase
№	krok 2011
Topic	DIGESTIVE SYSTEM
Task	A coprological survey revealed light-colored feces containing drops of neutral fat. The most likely reason for this condition is the disorder of:
Correct answer	Bile inflow into the bowel
B	Gastric juice acidity
C	Pancreatic juice secretion
D	Intestinal juice secretion
E	Intestinal absorption
№	krok 2011
Topic	ENDOCRINE SYSTEM
Task	The secretion of which hypophysial hormones will be inhibited after taking the oral contraceptives containing sex hormones?
Correct answer	Gonadotropic hormone
B	Vasopressin
C	Thyrotrophic hormone
D	Somatotropic hormone
E	Oxytocin
№	krok 2011, 2010
Topic	CARDIOVASCULAR SYSTEM
Task	During preparation of a patient to a heart surgery it was necessary to measure pressure in heart chambers. In one of them pressure varied from 0 mm Hg up to 120 mm Hg within one cardiac cycle. What heart chamber is it?
Correct answer	Left ventricle
B	Right ventricle
C	Right atrium
D	Left atrium
E	-
№	krok 2011, 2009
Topic	RESPIRATORY SYSTEM

Task	Lung ventilation in a person is increased as a result of physical activity. Which of the following indices of the external respiration is much higher than in a state of rest?
Correct answer	Respiratory volume
B	Vital capacity of lungs
C	Inspiratory reserve volume
D	Expiratory reserve volume
E	Total lung capacity
№	krok 2011
Topic	EXCITABLE TISSUES
Task	As a result of activation of the ion channels of the external membrane the rest potential of an excitable cell has greatly increased. What channels were activated?
Correct answer	Potassium channels
B	Sodium channels
C	Fast calcium channels
D	Slow calcium channels
E	Sodium and calcium channels
№	krok 2011
Topic	SYSTEM OF EXCRETION
Task	As a result of continuous starvation the glomerular filtration rate has increased by 20%. The most probable cause of the glomerular filtration alteration under the mentioned conditions is:
Correct answer	Decrease in the oncotic pressure of blood plasma
B	Increase in the systemic arterial pressure
C	Increase in the permeability of the renal filter
D	Increase of the filtration quotient
E	Increase of the renal blood flow
№	krok 2011
Topic	THERMOREGULATION
Task	Which way of heat emission by the bodies of greenhouse workers is the most effective at the temperature of 36° C degrees and relative humidity of 70%?
Correct answer	Liquid evaporation
B	Thermal conduction

C	Heat radiation
D	Convection
E	-
№	krok 2011
Topic	sensory system
Task	A 75-year-old-female patient with complaints of visual impairment has been delivered to the ophthalmologic department. Objective examination revealed a brain tumor in area of the left optic tract. The patient has a visual field defect in the following
Correct answer	Left half of both eyes retina
B	Right half of both eyes retina
C	Left and right halves of the left eye retina
D	Left and right halves of the right eye retina
E	Left and right halves of both eyes retina
№	krok 2011, 2010, 2008
Topic	ENDOCRINE SYSTEM
Task	A concentrated solution of sodium chloride was intravenously injected to an animal. This caused decreased reabsorption of sodium ions in the renal tubules. It is the result of the following changes of hormonal secretion:
Correct answer	Aldosterone reduction
B	Aldosterone increase
C	Vasopressin reduction
D	Vasopressin increase
E	Reduction of atrial natriuretic factor
№	krok 2011, 2010, 2008
Topic	SYSTEM OF EXCRETION
Task	A patient is 44 years old. Laboratory examination of his blood revealed that content of proteins in plasma was 40 g/l. What influence will be exerted on the transcapillary water metabolism?
Correct answer	Filtration will be increased, reabsorption - decreased
B	Both filtration and reabsorption will be increased
C	Both filtration and reabsorption will be decreased
D	Filtration will be decreased, reabsorption - increased
E	Metabolism will stay unchanged
№	krok 2011
Topic	ENDOCRINE SYSTEM

Task	A 32-year-old patient consulted a doctor about the absence of lactation after parturition. Such disorder might be explained by the deficit of the following hormone:
Correct answer	Prolactin
B	Somatotropin
C	Vasopressin
D	Thyrocalcitonin
E	Glucagon
№	krok 2011
Topic	ENDOCRINE SYSTEM
Task	A female patient presents with endocrine dysfunction of follicular cells of the ovarian follicles resulting from an inflammation. The synthesis of the following hormone will be inhibited:
Correct answer	Estrogen
B	Progesterone
C	Lutropin
D	Follicle stimulating hormone
E	Follistatine
№	krok 2011
Topic	CARDIOVASCULAR SYSTEM
Task	A 45-year-old patient was admitted to the cardiological department. ECG data: negative <i>P</i> wave overlaps <i>QRS</i> complex, diastolic interval is prolonged after extrasystole. What type of extrasystole is it?
Correct answer	Atrioventricular
B	Sinus
C	Atrial
D	Ventricular
E	Bundle-branch
№	krok 2011
Topic	ENDOCRINE SYSTEM
Task	A patient complains of hydruria (7 liters per day) and polydipsia. Examination reveals no disorders of carbohydrate metabolism. These abnormalities might be caused by the dysfunction of the following endocrine gland:
Correct answer	Neurohypophysis
B	Adenohypophysis
C	Islets of Langerhans (pancreatic islets)

D	Adrenal cortex
E	Adrenal medulla
№	krok 2011
Topic	SYSTEM OF BLOOD
Task	Before a surgery a blood sample of a 30-year-old man has been typed. Blood is Rh-positive. Standard serums of such groups as 0 $\alpha\beta$ (I), A β (II), B α (III) didn't activate erythrocyte agglutination reaction. The group of the analyzed blood is:
Correct answer	$\alpha\beta$ (I)
B	A β (II)
C	B α (III)
D	AB (IV)
E	
№	krok 2011
Topic	CARDIOVASCULAR SYSTEM
Task	During fighting a man had a cardiac arrest as a result of a hard blow to the upper region of anterior abdominal wall. Which of the described mechanisms might have provoked the cardiac arrest?
Correct answer	Parasympathetic unconditioned reflexes
B	Sympathetic unconditioned reflexes
C	Parasympathetic conditioned reflexes
D	Sympathetic conditioned reflexes
E	Peripheric reflexes
№	krok 2011
Topic	RESPIRATORY SYSTEM
Task	There is a severe time restriction for people's staying at a height of over 800 m above the sea level without oxygen bombs. What is the life limiting factor in this case?
Correct answer	Partial oxygen pressure
B	Ultraviolet intensity
C	Moisture level
D	Temperature
E	Earth gravity
№	krok 2011
Topic	CARDIOVASCULAR SYSTEM

Task	An adult man presents with systemic arterial pressure drop from 120/70 to 90/50 mm Hg. This resulted in reflex vasoconstriction. Vasoconstriction will be minimal in the following organ:
Correct answer	Heart
B	Skin
C	Bowels
D	Skeletal muscles
E	Liver
№	krok 2011
Topic	SYSTEM OF BLOOD
Task	Blood count of an athlete is as follows: erythrocytes - $5 \cdot 10^{12}/l$, Hb- 112 g/l, leukocytes - $7 \cdot 10^9/l$, neutrophils - 64%, basophils - 0,5%, eosinophils - 0,5%, monocytes - 8%, lymphocytes - 27%. First of all, such results indicate the stimulation of:
Correct answer	Erythropoiesis
B	Leukopoiesis
C	Lymphopoiesis
D	Granulocytopoiesis
E	Immunogenesis
№	krok 2011, 2008
Topic	RESPIRATORY SYSTEM
Task	If a man has an attack of bronchospasm it is necessary to reduce the effect of vagus on smooth muscles of bronchi. What membrane cytoceptors should be blocked for this purpose?
Correct answer	<i>M</i> -cholinoreceptors
B	<i>N</i> -cholinoreceptors
C	α -adrenoreceptors
D	β -adrenoreceptors
E	α - and β -adrenoreceptors
№	krok 2011
Topic	HAEMODYNAMICS
Task	In response to a change in body position from horizontal to vertical blood circulation system develops reflectory pressor reaction. Which of the following is its compulsory component?
Correct answer	Systemic constriction of the venous vessels
B	Systemic dilatation of the arterial resistive vessels

C	Decrease in the circulating blood volume
D	Increase in the heart rate
E	Weakening of the pumping ability of heart
№	krok 2011
Topic	DIGESTIVE SYSTEM
Task	A newborn develops dyspepsia after the milk feeding. When the milk is substituted by the glucose solution the dyspepsia symptoms disappear. The newborn has the subnormal activity of the following enzyme:
Correct answer	Lactase
B	Invertase
C	Maltase
D	Amylase
E	Isomaltase
№	krok 2011, 2009
Topic	CENTRAL NERVOUS SYSTEM
Task	An animal has an increased tonus of extensor muscles. This the result of intensified information transmission to the motoneurons of the spinal cord through the following descending pathways:
Correct answer	Vestibulospinal
B	Medial corticospinal
C	Reticulospinal
D	Rubrospinal
E	Lateral corticospinal
№	krok 2011
Topic	CENTRAL NERVOUS SYSTEM
Task	A man having a hearing loss after a head trauma was delivered to the neurosurgery department. The cause of the hearing loss might be the damage of the following lobe of cerebral cortex:
Correct answer	Temporal
B	Postcentral gyrus
C	Parietal
D	Occipital
E	Frontal
№	krok 2011
Topic	CENTRAL NERVOUS SYSTEM

Task	A patient underwent an extraction of a part of a CNS structures by medical indications. As a result of the extraction the patient developed atony, astasia, intention tremor, ataxy and adiadochokinesis. Which part of CNS structure had been extracted?
Correct answer	Cerebellum
B	Amygdaloid corpus
C	Hippocamp
D	Basal ganglions
E	Limbic system
№	krok 2011
Topic	CENTRAL NERVOUS SYSTEM
Task	A patient consulted a doctor about loss of taste sensitivity on the tongue root. The doctor revealed that it is caused by nerve affection. Which nerve is it?
Correct answer	Glossopharyngeal
B	Vagus nerve
C	Facial nerve
D	Superlaryngeal nerve
E	Trigeminal nerve
№	krok 2011
Topic	EXCITABLE TISSUES
Task	Which muscle contraction will be observed in the upper extremity during holding (but not moving) a load in a certain position?
Correct answer	Isometric
B	Isotonic
C	Auxotonic
D	Concentric
E	Excentric
№	krok 2009
Topic	SYSTEM OF BLOOD
Task	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:
Correct answer	Activation of Fibrinolytic system
B	Insufficient Fibrin production
C	Reduced number of thrombocytes
D	Activation of anticoagulation system

E	Activation of Christmas factor
№	krok 2009
Topic	SYSTEM OF BLOOD
Task	A 38-year-old patient with an uterine haemorrhage lasting for 2 days was delivered to the admission ward. Which of the following will be revealed in the patient's blood?
Correct answer	Decrease in the haematocrite index
B	Eosinophilia
C	Deceleration in ESR
D	Leukocytosis
E	Increase in the colour index
№	krok 2009
Topic	sensory sistem
Task	A man has normal sensitivity of his FInger skin, however he doesn't sense his wedding ring around the FInger. What process induced by wearing of the ring has caused this phenomenon?
Correct answer	Receptor adaptation
B	Development of the FIbrous tissue
C	Abnormality of the epidermis structure
D	Impaired circulation
E	Abnormality of the receptor structure
№	krok 2009
Topic	CARDIOVASCULAR SYSTEM
Task	ECG study showed that the <i>T</i> -waves were positive in the standard extremity leads, their amplitude and duration were normal. The right conclusion would be that the following process runs normally in the heart ventricles:
Correct answer	Repolarization
B	Depolarization
C	Excitement
D	Contraction
E	Relaxation
№	krok 2009
Topic	ENDOCRINE SYSTEM
Task	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?

Correct answer	Glucocorticoids
B	Mineralocorticoids
C	Sexual hormones
D	Catecholamines
E	Thyroid
№	krok 2009
Topic	EXCITABLE TISSUES
Task	Stimulation of an excitable cell by the electric current has led to the depolarization of its membrane. The depolarization has been caused mainly by the following ions penetrating into the cell through its membrane:
Correct answer	Na^+
B	HCO_3^-
C	Ca^{2+}
D	Cl^-
E	K^+
№	krok 2009
Topic	METABOLISM
Task	In patients with the biliary tract obstruction the blood coagulation is inhibited; the patients have frequent haemorrhages caused by the subnormal assimilation of the following vitamin:
Correct answer	<i>K</i>
B	<i>A</i>
C	<i>D</i>
D	<i>E</i>
E	<i>C</i>
№	krok 2009
Topic	SYSTEM OF EXCRETION
Task	As a result of continuous starvation the glomerular Filtration rate has increased by 20%. The most probable cause of the glomerular Filtration alteration under the mentioned conditions is:
Correct answer	Decrease in the oncotic pressure of blood plasma
B	Increase in the systemic arterial pressure
C	Increase in the permeability of the renal Filter
D	Increase of the Filtration quotient

E	Increase of the renal blood flow
No	krok 2009
Topic	ENDOCRINE SYSTEM
Task	A middle-aged man went to a foreign country because he had been offered a job there. However he had been unemployed for quite a long time. What endocrine glands were exhausted most of all in this man?
Correct answer	Adrenal glands
B	Parathyroid glands
C	Seminal glands
D	Substernal gland
E	Thyroid gland
No	krok 2009
Topic	THERMOREGULATION
Task	Cooling of the human body in water is much more faster than in the air. What way of heat emission in water is much more
Correct answer	Heat conduction
B	Convection
C	Heat radiation
D	Sweat evaporation
E	–
No	krok 2009
Topic	SYSTEM OF BLOOD
Task	After a surgery a 36-year-old woman was given an intravenous injection of concentrated albumin solution. This has induced intensified water movement in the following direction:
Correct answer	From the intercellular fluid to the capillaries
B	From the intercellular fluid to the cells
C	From the cells to the intercellular fluid
D	From the capillaries to the intercellular fluid
E	No changes of water movement will be observed
No	krok 2009
Topic	METABOLISM
Task	While determining power inputs of a patient's organism it was established that the respiratory coefficient equaled 1,0. This means that in the cells of the patient the following substances are mainly oxidized:
Correct answer	Carbohydrates

B	Proteins
C	Fats
D	Proteins and carbohydrates
E	Carbohydrates and fats
№	krok 2009
Topic	CENTRAL NERVOUS SYSTEM
Task	During an experiment the dorsal roots of the spinal cord of an animal have been cut. What changes will be observed in the innervation zone?
Correct answer	Sensitivity loss
B	Loss of motor functions
C	Decrease in muscle tone
D	Increase in muscle tone
E	Sensitivity loss and loss of motor functions
№	krok 2009
Topic	CENTRAL NERVOUS SYSTEM
Task	An experimental animal has lost orientative reflexes as a result of destruction of certain brainstem structures. What structures had been destroyed?
Correct answer	Quadrigeminal plate
B	Medial nuclei of the reticular formation
C	Red nuclei
D	Vestibular nuclei
E	Black substance
№	krok 2009
Topic	ENDOCRINE SYSTEM
Task	A patient has osmotic pressure of blood plasma at the rate of 350 mOsmol/l (norm is 300 mOsmol/l). This will cause hypersecretion of the following hormone:
Correct answer	Vasopressin
B	Aldosterone
C	Cortisol
D	Adrenocorticotropin
E	Natriuretic
№	krok 2009

Topic	ENDOCRINE SYSTEM
Task	In the pubertal period cells of the male sexual glands start producing the male sexual hormone testosterone that is responsible for formation of the secondary sexual characters. What cells of the male sexual glands produce this hormone?
Correct answer	Leidig cells
B	Sustenocytes
C	Sertoli's cells
D	Sustentacular cells
E	Spermatozoa
№	krok 2009
Topic	ENDOCRINE SYSTEM
Task	Examination of a patient revealed overgrowth of facial bones and soft tissues, tongue enlargement, wide interdental spaces in the enlarged dental arch. What changes of the hormonal secretion are the most likely?
Correct answer	Hypersecretion of the somatotropic hormone
B	Hyopsecretion of the somatotropic hormone
C	Hypersecretion of insulin
D	Hyopsecretion of thyroxin
E	Hyopsecretion of insulin
№	krok 2009
Topic	ENDOCRINE SYSTEM
Task	A 32-year-old patient consulted a doctor about the absence of lactation after parturition. Such disorder might be explained by the deFIcIt of the following hormone:
Correct answer	Prolactin
B	Somatotropin
C	Vasopressin
D	Thyrocalcitonin
E	Glucagon
№	krok 2009
Topic	CENTRAL NERVOUS SYSTEM
Task	During an experiment the myotatic reβex has been studied in frogs. After extension in a skeletal muscle its reβactory contraction was absent. The reason for it might be a dysfunction of the following receptors:
Correct answer	Muscle spindles
B	Nociceptors

C	Articular
D	Golgi tendon organs
E	Tactile
№	krok 2009
Topic	CARDIOVASCULAR SYSTEM
Task	During an experiment vagus branches that innervate heart are being stimulated. This has stopped conduction of excitement from the atria to the ventricles. The reason for it are electrophysical changes in the following structures:
Correct answer	Atrioventricular node
B	His' bundle
C	Sinoatrial node
D	Ventricles
E	Atria
№	krok 2009
Topic	HAEMODYNAMICS
Task	In response to a change in body position from horizontal to vertical blood circulation system develops reBectory pressor reaction. Which of the following is its compulsory component?
Correct answer	Systemic constriction of the venous vessels
B	Systemic dilatation of the arterial resistive vessels
C	Decrease in the circulating blood volume
D	Increase in the heart rate
E	Weakening of the pumbing ability of heart
№	krok 2009
Topic	SYSTEM OF BLOOD
Task	A patient suffers from the haemorrhagic syndrome that shows itself in frequent nasal bleedings, posttraumatic and spontaneous intracutaneous and intraarticular haemorrhages. After a laboratory study a patient was diagnosed with the type B haemophilia. This disease is provoked by the deFicit of the following factor of blood coagulation:
Correct answer	IX
B	VIII
C	XI
D	V
E	VII
№	krok 2009

Topic	CENTRAL NERVOUS SYSTEM
Task	After a craniocerebral trauma a patient lost the ability to execute learned purposeful movements (apraxia). The injury is most likely localized in the following region of the cerebral cortex:
Correct answer	<i>Gyrus supramarginalis</i>
B	<i>Gyrus angularis</i>
C	<i>Gyrus paracentralis</i>
D	<i>Gyrus lingualis</i>
E	<i>Gyrus parahippocampalis</i>
№	krok 2009
Topic	DIGESTIVE SYSTEM
Task	A newborn develops dyspepsia after the milk feeding. When the milk is substituted by the glucose solution the dyspepsia symptoms disappear. The newborn has the subnormal activity of the following enzyme:
Correct answer	Lactase
B	Invertase
C	Maltase
D	Amylase
E	Isomaltase
№	krok 2009
Topic	AUTONOMIC NERVOUS SYSTEM
Task	A man presents with increased heart rate, mydriatic pupils, dry mouth. This condition results from the activation of the following system of function regulation:
Correct answer	Sympathetic
B	Parasympathetic
C	Metasympathetic
D	Vagoinsular
E	Hypothalamo-pituitary-adrenal
№	krok 2009
Topic	RESPIRATORY SYSTEM
Task	Vagus nerves of an experimental animal have been cut on the both sides. What respiratory changes will result from this?
Correct answer	Respiration will become deep and infrequent
B	Respiration will become shallow and frequent
C	Respiration will become deep and frequent

D	Respiration will become shallow and infrequent
E	There will be no respiratory changes
№	krok 2009
Topic	EXCITABLE TISSUES
Task	Which muscle contraction will be observed in the upper extremity during holding (not moving) a load in a certain position?
Correct answer	Isometric
B	Isotonic
C	Auxotonic
D	Concentric
E	Excentric
№	krok 2009
Topic	DIGESTIVE SYSTEM
Task	A 60-year-old patient presents with weakened peristaltic activity of the bowels. Which of the following foodstuffs would stimulate peristalsis most of all?
Correct answer	Brown bread
B	White bread
C	Meat
D	Lard
E	Tea
№	krok 2009
Topic	SYSTEM OF BLOOD
Task	It was established that agglutination of the recipient's blood erythrocytes had been caused by the standard sera from the <i>I</i> and <i>II</i> groups. Serum from the <i>III</i> group as well as anti-Rh serum hadn't provoke any agglutination. Which blood group and rhesus is allowed to be transfused this recipient?
Correct answer	$B, \alpha (III) Rh^-$
B	$A, \beta (II) Rh^-$
C	$0, \alpha, \beta, (I) Rh^+$
D	$AB (IV), Rh^+$
E	$AB (IV), Rh^-$
№	krok 2008
Topic	HIGHER NERVOUS ACTIVITY

Task	A student takes notes of a lecture. Quality of his notes became significantly worse when his neighbours began talking. What type of conditional reflex inhibition was the cause of it?
Correct answer	External
B	Protective
C	Extinctive
D	Differentiated
E	Delayed
№	krok 2008
Topic	SYSTEM OF EXCRETION
Task	As a result of long-term starvation the glomerular filtration of a man was accelerated by 20%. The most probable cause of filtration changes under such conditions is:
Correct answer	Fall of oncotic pressure of blood plasma
B	Rise of systemic arterial pressure
C	Increased permeability of renal filter
D	Growth of filtration coefficient
E	Increase of renal plasma flow
№	krok 2008
Topic	ENDOCRINE SYSTEM
Task	Parents of a 10 year old boy consulted a doctor about extension of hair-covering, growth of beard and moustache, low voice. Intensified secretion of which hormone must be assumed?
Correct answer	Of testosterone
B	Of somatotropin
C	Of oestrogen
D	Of progesterone
E	Of cortisol
№	krok 2008
Topic	THERMOREGULATION
Task	A human body cools in water much faster than in the air. What way of heat emission in water is much more efficient?
Correct answer	Heat conduction
B	Convection
C	Heat radiation
D	Sweat evaporation

E	-
№	krok 2008, 2010
Topic	SYSTEM OF EXCRETION
Task	A patient has a decreased vasopressin synthesis that causes polyuria and as a result of it evident organism dehydratati-on. What is the mechanism of polyuria development?
Correct answer	Reduced tubular reabsorption of water
B	Reduced tubular reabsorption of <i>Na</i> ions
C	Reduced tubular reabsorption of protein
D	Reduced glucose reabsorption
E	Acceleration of glomerular filtration
№	krok 2008, 2010
Topic	CARDIOVASCULAR SYSTEM
Task	An isolated cell of human heart automatically generates excitement impulses with frequency of 60 times per minute. This cell was taken from the following heart structure:
Correct answer	Sinoatrial node
B	Atrium
C	Ventricle
D	Atrioventricular node
E	His' bundle
№	krok 2008
Topic	SYSTEM OF BLOOD
Task	As a result of posttranslative modifications some proteins taking part in blood coagulation, particularly prothrombin, become capable of calcium binding. The following vitamin takes part in this process:
Correct answer	<i>K</i>
B	<i>C</i>
C	<i>A</i>
D	<i>B</i> ₁
E	<i>B</i> ₂
№	krok 2008
Topic	SYSTEM OF BLOOD
Task	Packed cell volume of a man was 40% before the trauma. What packed cell volume will be observed 24 hours after blood loss

Correct answer		30%
B		40%
C		55%
D		45%
E		50%
№	krok 2008	
Topic	SYSTEM OF BLOOD	
Task	A pregnant woman had her blood group identified. Reaction of erythrocyte agglutination with standard serums of $0\alpha\beta$ (I), $B\alpha$ (III) groups didn't proceed with standard serum of $A\beta$ (II) group. The blood group under examination is:	
Correct answer	$A\beta$ (II)	
B	$0\alpha\beta$ (I)	
C	$B\alpha$ (III)	
D	AB (IV)	
E	-	
№	krok 2008	
Topic	CARDIOVASCULAR SYSTEM	
Task	Vagus branches that innervate heart are being stimulated in course of an experiment. As a result of it the excitement conduction from atria to the ventricles was brought to a stop. It is caused by electrophysical changes in the following	
Correct answer	Atrioventricular node	
B	His' bundle	
C	Sinoatrial node	
D	Ventricles	
E	Atria	
№	krok 2008	
Topic	SYSTEM OF BLOOD	
Task	A 16 year old boy after an illness has diminished function of protein synthesis in liver as a result of vitamin <i>K</i> deficiency. It will cause disturbance of:	
Correct answer	Blood coagulation	
B	Erythrocyte sedimentation rate	
C	Anticoagulant generation	
D	Erythropoietin secretion	
E	Osmotic blood pressure	

№	krok 2008
Topic	HAEMODYNAMICS
Task	Systemic arterial pressure of an adult dropped from 120/70 to 90/50 mm Hg that led to reflectory vasoconstriction. The vasoconstriction will be maximal in the following organ:
Correct answer	Bowels
B	Heart
C	Brain
D	Kidneys
E	Adrenals
№	krok 2008
Topic	DIGESTIVE SYSTEM
Task	Surgical removal of a part of stomach resulted in disturbed absorption of vitamin B_{12} , it is excreted with feces. The patient was diagnosed with anemia. What factor is necessary for absorption of this vitamin?
Correct answer	Gastromucoprotein
B	Gastrin
C	Hydrochloric acid
D	Pepsin
E	Folic acid
№	krok 2008
Topic	EXCITABLE TISSUES
Task	Rest potential of a cell equals -80 mV . At what stage of action potential did the membrane potential equal $+30\text{ mV}$?
Correct answer	Reverse polarization
B	After hyperpolarization
C	After depolarization
D	Depolarization
E	-
№	krok 2008
Topic	RESPIRATORY SYSTEM
Task	A 35 year old man got an injury that caused complete disruption of spinal cord at the level of the first cervical segment. What respiration changes will be observed?
Correct answer	It will come to a standstill

B	No changes will be observed
C	Diaphragmal respiration will be maintained, thoracic respiration will disappear
D	Thoracic respiration will be maintained, diaphragmal respiration will disappear
E	It will become infrequent and deep
№	krok 2008
Topic	CARDIOVASCULAR SYSTEM
Task	In course of an experiment a peripheral section of vagus of an experimental animal is being stimulated. What changes will be
Correct answer	Heart rate fall
B	Heart hurry
C	Pupil dilation
D	Increase of respiration rate
E	Bronchi dilation
№	krok 2008
Topic	CENTRAL NERVOUS SYSTEM
Task	In course of an experiment a toad's right labyrinth was destroyed. It will cause amyotonia of the following muscles:
Correct answer	Right extensors
B	Left flexors
C	Left extensors
D	Right flexors
E	Right and left extensors
№	krok 2008
Topic	CENTRAL NERVOUS SYSTEM
Task	A patient complains of dizziness and hearing loss. What nerve is damaged?
Correct answer	Vestibulocochlear
B	Trigeminus
C	Sublingual
D	Vagus
E	Trochlear
№	krok 2008
Topic	THERMOREGULATION

Task	Workers of a hothouse farm work under conditions of unfavourable microclimate: air temperature is $+37^{\circ}C$, relative humidity is 90%, air speed is 0,2 m/s. The way of heat emission under these conditions will be:
Correct answer	Evaporation
B	Heat conduction
C	Convection
D	Radiation
E	All the ways
№	krok 2008
Topic	CARDIOVASCULAR SYSTEM
Task	A cardiac electric stimulator was implanted to a 75 year old man with heart rate of 40 bpm. Thereafter the heart rate rose up to 70 bpm. The electric stimulator has undertaken the function of the following heart part:
Correct answer	Sinoatrial node
B	Atrioventricular node
C	His' bundle branches
D	His' bundle fibers
E	Purkinje's fibers
№	krok 2008
Topic	DIGESTIVE SYSTEM
Task	Examination of a 35 year old patient revealed high acidity of gastric juice. What receptors should be blocked in order to reduce
Correct answer	Histamine
B	α_1 -adrenoreceptors
C	α_2 -adrenoreceptors
D	β_1 -adrenoreceptors
E	β_2 -adrenoreceptors
№	krok 2007
Topic	THERMOREGULATION
Task	A lightly dressed man is standing in a room, air temperature is $+14^{\circ}C$, windows and doors are closed. In what way does he emit heat the most actively?
Correct answer	Heat radiation
B	Heat conduction
C	Convection

D	Evaporation
E	Perspiration
№	krok 2007
Topic	DIGESTIVE SYSTEM
Task	Removal of gall bladder of a patient has disturbed processes of <i>Ca</i> absorption through the intestinal wall. What vitamin will stimulate this process?
Correct answer	<i>D</i> ₃
B	<i>P P</i>
C	<i>C</i>
D	<i>B</i> ₁₂
E	<i>K</i>
№	krok 2007
Topic	DIGESTIVE SYSTEM
Task	Examination of a 43 y.o. patient revealed that his stomach has difficulties with digestion of protein food. Gastric juice analysis revealed low acidity. Function of which gastric cells is disturbed in this case?
Correct answer	Parietal exocrinocytes
B	Main exocrinocytes
C	Mucous cells (mucocytes)
D	Endocrinous cells
E	Cervical mucocytes
№	krok 2007
Topic	ENDOCRINE SYSTEM
Task	A 2 y.o. child has convulsions as a result of lowered concentration of calcium ions in blood plasma. It is caused by reduced
Correct answer	Parathyroid glands
B	Hypophysis
C	Adrenal cortex
D	Pineal gland
E	Thymus
№	krok 2007
Topic	CARDIOVASCULAR SYSTEM
Task	Heart rate of a man permanently equals 40 beats pro minute. What is the pacemaker?

Correct answer	Atrioventricular node
B	Sinoatrial node
C	His' bundle
D	His' bundle branches
E	Purkinje's fibers
№	krok 2007
Topic	ENDOCRINE SYSTEM
Task	Parents of a 10 y.o. boy consulted a doctor about extension of hair-covering, growth of beard and moustache, low voice. Intensified secretion of which hormone must be assumed?
Correct answer	Of testosterone
B	Of somatotropin
C	Of oestrogen
D	Of progesterone
E	Of cortisol
№	krok 2007
Topic	CARDIOVASCULAR SYSTEM
Task	Examination of an isolated cardiomyocyte revealed that it didn't generate excitation impulses automatically. This cardiomyocyte was obtained from:
Correct answer	Ventricles
B	Sinoatrial node
C	Atrioventricular node
D	His' bundle
E	Purkinje's fibers
№	krok 2007
Topic	CARDIOVASCULAR SYSTEM
Task	Examination of a man established that cardiac output equaled 3500 ml, systolic output - 50 ml. What is the man's heart rate
Correct answer	70
B	60
C	50
D	80
E	90
№	krok 2007

Topic	EXCITABLE TISSUES
Task	The permeability of the irritable cell membrane has been increased for potassium ions during an experiment. What changes of membrane electric status can occur?
Correct answer	Hyperpolarization
B	Depolarization
C	Action potential
D	Local response
E	No changes
№	krok 2007
Topic	CARDIOVASCULAR SYSTEM
Task	A patient has extrasystole. ECG shows no <i>P</i> wave, <i>QRS</i> complex is deformed, there is a full compensatory pause. What extrasystoles are these?
Correct answer	Ventricular
B	Atrial
C	Atrioventricular
D	Sinus
E	-
№	krok 2007
Topic	CENTRAL NERVOUS SYSTEM
Task	As a result of spinalcord trauma a 33 y.o. man has a disturbed pain and temperature sensitivity that is caused by damage of the following tract:
Correct answer	Spinothalamic
B	Medial spinocortical
C	Posterior spinocerebellar
D	Lateral spinocortical
E	Anterior spinocerebellar
№	krok 2007
Topic	ENDOCRINE SYSTEM
Task	Examination of a patient revealed hyperkalemia and hyponatremia. Low secretion of which hormone may cause such changes?
Correct answer	Aldosteron
B	Vasopressin
C	Cortisol

D	Parathormone
E	Natriuretic
№	krok 2007
Topic	ENDOCRINE SYSTEM
Task	Inhabitants of territories with cold climate have high content of an adaptive thermoregulatory hormone. What hormone is
Correct answer	Thyroxin
B	Insulin
C	Glucagon
D	Somatotropin
E	Cortisol
№	krok 2007
Topic	CENTRAL NERVOUS SYSTEM
Task	Glutamate decarboxylation results in formation of inhibitory transmitter in CNS. Name it:
Correct answer	GABA
B	Glutathione
C	Histamine
D	Serotonin
E	Asparagine
№	krok 2007
Topic	ENDOCRINE SYSTEM
Task	Osmotic pressure of a man's blood plasma is 350 mosmole/l (standard pressure is 300 mosmole/l). First of all it will result in high secretion of the following hormone:
Correct answer	Vasopressin
B	Aldosteron
C	Cortisol
D	Adrenocorticotropin
E	Natriuretic
№	krok 2007
Topic	SYSTEM OF BLOOD
Task	A woman with (B), Rh ⁻ blood group born a child with (A) blood group. The child is diagnosed with hemolytic disease of newborn as a result of rhesus incompatibility. What blood group is the child's father likely to have?

Correct answer	(A), Rh ⁺
B	I (0), Rh ⁺
C	III (B), Rh ⁺
D	I (0), Rh ⁻
E	II (A), Rh ⁻
№	krok 2007
Topic	CARDIOVASCULAR SYSTEM
Task	An isolated cell of human heart automatically generates excitation impulses with frequency 60 times pro minute. What heart structure was this cell obtained from?
Correct answer	Sinoatrial node
B	Atrium
C	Ventricle
D	Atrioventricular node
E	His' bundle
№	krok 2007
Topic	HIGHER NERVOUS ACTIVITY
Task	Examination of a patient revealed a strong, balanced, inert type of higher nervous activity according to Pavlov. What temperament type does the patient have (according to Hippocrates classification)?
Correct answer	Phlegmatic
B	Sanguine
C	Choleric
D	Melancholic
E	-
№	krok 2010
Topic	CENTRAL NERVOUS SYSTEM
Task	A patient caught a cold after which there appeared facial expression disorder. He cannot close his eyes, raise his eyebrows, bare his teeth. What nerve is damaged?
Correct answer	Facial
B	Vagus
C	Trigeminius
D	Glossopharyngeal

E	Infraorbital
№	krok 2010
Topic	DIGESTIVE SYSTEM
Task	A newborn child suffers from milk curdling in stomach, this means that soluble milk proteins (caseins) transform to insoluble proteins (paracaseins) by means of calcium ions and a certain enzyme. What enzyme takes part in this process?
Correct answer	Renin
B	Pepsin
C	Gastrin
D	Secretin
E	Lipase
№	krok 2010
Topic	ENDOCRINE SYSTEM
Task	Atria of an experimental animal were superdistended by blood that resulted in decreased reabsorption of Na^+ and water in renal tubules. This can be explained by the influence of the following factor upon kidneys:
Correct answer	Natriuretic hormone
B	Aldosterone
C	Renin
D	Angiotensin
E	Vasopressin
№	krok 2010
Topic	ENDOCRINE SYSTEM
Task	People adapted to high external temperatures have such peculiarity: profuse sweating isn't accompanied by loss of large volumes of sodium chloride. This is caused by the effect of the following hormone upon the perspiratory glands:
Correct answer	Aldosterone
B	Vasopressin
C	Cortisol
D	Tgyroxin
E	Natriuretic
№	krok 2010
Topic	CENTRAL NERVOUS SYSTEM
Task	After destruction of CNS structures an animal lost orientative reflexes. What structure was destroyed?

Correct answer	Quadrigeminal plate
B	Red nucleus
C	Lateral vestibular nuclei
D	Black substance
E	Medial reticular nuclei
№	krok 2010
Topic	SYSTEM OF BLOOD
Task	Blood group of a 30 year old man was specified before an operation. His blood is Rh-positive. Reaction of erythrocyte agglutination was absent with standard sera of $O\alpha\beta$ (I), $A\beta$ (II), $B\alpha$ (III) groups. The blood under examination is of the
Correct answer	$O\alpha\beta$ (I)
B	$A\beta$ (II)
C	$B\alpha$ (III)
D	AB (IV)
E	–
№	krok 2010
Topic	SYSTEM OF BLOOD
Task	A man weighs 80 kg, after long physical activity his circulating blood volume is reduced down to 5,4 l, hematocrit makes up 50%, whole blood protein is 80 g/l. These blood characteristics are determined first of all by:
Correct answer	Water loss with sweat
B	Increased number of erythrocytes
C	Increased protein concentration in plasm
D	Increased circulating blood volume
E	Increased diuresis
№	krok 2010
Topic	SYSTEM OF BLOOD
Task	Examination of a pregnant woman revealed twice as much concentration of fibrinogen in blood plasm. What ESR can this
Correct answer	40-50 mm/h
B	10-15 mm/h
C	2-12 mm/h
D	5-10 mm/h
E	0-5 mm/h
№	krok 2010

Topic	RESPIRATORY SYSTEM
Task	A young woman who entered a production department where it strongly smelt of paints and varnishes had a bronchospasm. This reflex was caused by irritation of the following receptors:
Correct answer	Irritant
B	Juxtaglomerular
C	Pleura receptors
D	Central chemoreceptors
E	Peripheral chemoreceptors
№	krok 2018
Topic	Hormones
Task	A 40-year-old woman on examination presents with intensified basal metabolic rate. What hormone present in excess leads to such condition?
Correct answer	Triiodothyronine
B	Thyrocalcitonin
C	Glucagon
D	Aldosterone
E	Somatostatin
№	krok 2018
Topic	Hormones
Task	A 16-year-old girl presents with no hair on the pubis and in the armpits, her mammary glands are underdeveloped, no menstruations. What hormone imbalance can it be indicative of?
Correct answer	Ovarian failure
B	Hyperthyroidism
C	Hypothyroidism
D	Pancreatic islet failure
E	Adrenal medulla hyperfunction
№	krok 2018
Topic	CNS
Task	A laboratory experiment on a dog was used to study central parts of auditory system. One of the mesencephalon structures was destroyed. The dog has lost the orienting response to auditory signals. What structure was destroyed?
Correct answer	Inferior colliculi of corpora quadrigemina
B	Superior colliculi of corpora quadrigemina

C	Substantia nigra
D	Reticular formation nuclei
E	Red nucleus
№	krok 2018
Topic	HNA
Task	During the prestart period an athlete develops increased frequency and force of cardiac contractions. These changes are caused by intensification of the following reflex responses:
Correct answer	Sympathetic conditioned
B	Sympathetic unconditioned
C	Parasympathetic conditioned
D	Parasympathetic unconditioned
E	Peripheral
№	krok 2018
Topic	Heart
Task	ECG analysis of the patient shows that the T waves are positive in the second standard limb lead and their amplitude and duration is normal. The conclusion can be made that the following process occurs normally in the patient's ventricles:
Correct answer	Repolarization
B	Depolarization
C	Excitation
D	Contraction
E	Relaxation
№	krok 2018
Topic	Respiration
Task	A patient demonstrates sharp decrease of pulmonary surfactant activity. This condition can result in:
Correct answer	Alveolar tendency to recede
B	Decreased airways resistance
C	Decreased work of expiratory muscles
D	Increased pulmonary ventilation
E	Hyperoxemia
№	krok 2018
Topic	CNS

Task	A 64-year-old woman presents with disturbed fine motor function of her fingers, marked muscle rigidity, and tremor. The neurologist diagnosed her with Parkinson's disease. What brain structures are damaged resulting in this disease?
Correct answer	Substantia nigra
B	Thalamus
C	Red nuclei
D	Cerebellum
E	Reticular formation
№	krok 2018
Topic	Respiration
Task	A person has increased pulmonary ventilation due to physical exertion. What indicator of external respiration will be significantly increased compared to the resting state?
Correct answer	Respiratory volume
B	Vital lung capacity
C	Inspiratory reserve volume
D	Expiratory reserve volume
E	Total lung capacity
№	krok 2018
Topic	Vesels
Task	The carotid bodies on both sides were removed in a test animal. Which of the listed factors WILL NOT be able to cause hyperventilation in the test animal?
Correct answer	Hypoxemia
B	Physical exertion
C	Hypercapnia
D	Acidosis
E	Increase of core body temperature
№	krok 2018
Topic	Respiration
Task	Due to prolonged stay in the mountains at the altitude of 3000 m above the sea level, a person developed increased oxygen capacity of blood, which was directly caused by intensified production of:
Correct answer	Erythropoietins
B	Leukopoietins
C	Carbaminohemoglobin

D	Catecholamines
E	2,3-bisphosphoglycerate
№	krok 2018
Topic	Metabolisms
Task	A woman has been limiting the amount of products in her diet to lose some weight. 3 months later she developed edemas and her diuresis increased. What dietary component deficiency is the cause of this?
Correct answer	Proteins
B	Fats
C	Carbohydrates
D	Vitamins
E	Minerals
№	krok 2018
Topic	Exactable tissues
Task	A force generated by the muscle is not enough to lift a load. What type of muscle contraction occurs in this case?
Correct answer	Isometric
B	Tetanic
C	Isotonic
D	Eccentric
E	Concentric
№	krok 2018
Topic	Hormones
Task	Atria of a test animal were superdistended with blood, which resulted in decreased reabsorption of Na^+ and water in renal tubules. This can be explained by the effect of the following factor on the kidneys:
Correct answer	Natriuretic hormone
B	Aldosterone
C	Renin
D	Angiotensin
E	Vasopressin
№	krok 2018
Topic	CNS
Task	The dorsal root of the spinal nerve of a test animal was severed. What changes will occur in the innervation area?

Correct answer	Loss of sensitivity
B	Loss of motor function
C	Decreased muscle tone
D	Increased muscle tone
E	Loss of sensitivity and motor function
№	krok 2018
Topic	CNS
Task	Due to destruction of certain structures of the brainstem a test animal has lost its orientation reflexes in response to strong light stimuli. What structures were destroyed?
Correct answer	Anterior quadrigeminal bodies
B	Posterior quadrigeminal bodies
C	Red nuclei
D	Vestibular nuclei
E	Substantia nigra
№	krok 2018
Topic	CNS
Task	The right leg of a 40-year-old woman measured at the shin level is by 2 cm smaller in the diameter than the left leg. Ankle-jerk (Achilles) and knee-jerk reflexes are absent on the right. What is the most likely mechanism of hyporeflexia development
Correct answer	Disturbed conduction of stimulation
B	Inhibition of pyramidal motoneuron
C	Disturbed synaptic impulse transmission
D	Activation of excitatory impulses from the CNS
E	Disturbed perception of stimulation
№	krok 2018
Topic	Blood
Task	A 25-year-old woman at her third pregnancy with impending miscarriage was brought to the hospital. What combination of Rh factor of the mother and the fetus can be the cause of this condition?
Correct answer	Mother Rh (-), fetus Rh (+)
B	Mother Rh (-), fetus Rh (-)
C	Mother Rh (+), fetus Rh (-)
D	Mother Rh (+), fetus Rh (+)
E	-

№	krok 2018
Topic	Blood
Task	A woman with the III (B), Rh (-) blood group gave birth to a child with the II (A) blood group. The child is diagnosed with hemolytic disease of newborn caused by rhesus incompatibility. What blood group and Rh does the father have?
Correct answer	II (A), Rh (+)
B	I (0), Rh (+)
C	III (B), Rh (+)
D	I (0), Rh (-)
E	II (A), Rh (-)
№	krok 2018
Topic	Vessels
Task	In the process of an experiment, vascular resistance to the blood flow was measured in the different areas of circulatory system. The highest resistance was detected in the:
Correct answer	Arterioles
B	Arteries
C	Capillaries
D	Venules
E	Veins
№	krok 2018
Topic	Excitable tissues
Task	In an experiment it is necessary to assess neuromotor and muscle excitability. What value should be measured to make the
Correct answer	Sensory threshold
B	Action potential amplitude
C	Resting potential
D	Threshold potential
E	Action potential duration
№	krok 2018
Topic	Analyzers
Task	Vestibular receptors of semicircular canals of a test animal have been destroyed. What reflexes will disappear as a result?
Correct answer	Statokinetic reflex during movements with angular acceleration
B	Statokinetic reflex during movements with linear acceleration
C	Head-righting reflex

D	Body-righting reflex
E	Primary orienting reflex
№	krok 2018
Topic	HNA
Task	During the fight a man has received a strong blow to the upper anterior abdominal wall, which resulted in the cardiac arrest. What mechanism has led to the cardiac arrest in this case?
Correct answer	Parasympathetic unconditioned
B	Sympathetic unconditioned
C	Parasympathetic conditioned
D	Sympathetic conditioned
E	Peripheral
№	krok 2018
Topic	Blood
Task	A woman has lost a lot of blood during the childbirth. Her blood group needs to be determined. Erythrocyte agglutination occurred with standard serums 0 (I) and A (II) and did not occur with standard serum B (III). What blood group does this
Correct answer	B (III)
B	0 (I)
C	A (II)
D	AB (IV)
E	-
№	krok 2018
Topic	Digestion
Task	Stool test detects in the patients feces a large amount of undigested fats. This patient is the most likely to have disturbed secretion of the following enzymes:
Correct answer	Pancreatic lipases
B	Pancreatic amylase
C	Pancreatic proteases
D	Bile lipase
E	Gastric protease
№	krok 2018
Topic	Digestion
Task	A patient has undergone surgical removal of the pylorus. Decreased secretion of the following hormone can be expected:

Correct answer	Gastrin
B	Histamine
C	Secretin
D	Cholecystokinin
E	Gastric inhibitory polypeptide
№	krok 2018
Topic	Excitable tissues
Task	Cell membrane rest potential changed from -85 to -90 mV. It can be caused by activation of the following cell membrane
Correct answer	Potassium
B	Sodium
C	Potassium and sodium
D	Calcium
E	Potassium and calcium
№	krok 2018
Topic	Heart
Task	ECG of the patient shows increased duration of the QRS complex. What is the most likely cause?
Correct answer	Increased period of ventricular depolarization
B	Disturbed conduction in the atrioventricular node
C	Increased atrial excitability
D	Increased atrial and ventricular excitability
E	Increased period of atrial excitation
№	krok 2018
Topic	Hormones
Task	Vascular endothelium is characterized by high metabolic activity and synthesizes vasoactive substances. Among these substances there is a potent vasodilator synthesized from L-arginine. Name this vasodilator:
Correct answer	Nitrogen oxide
B	Histamine
C	Bradykinin
D	Acetylcholine
E	Adrenaline
№	krok 2018
Topic	Analyzers

Task	A person becomes less receptive to pain in physically or emotionally straining situations due to activation of:
Correct answer	Antinociceptive system
B	Thyroid gland functions
C	Nociceptive system
D	Adrenal glands functions
E	Parasympathetic nervous system
№	krok 2018
Topic	Hormones
Task	In human organism significant blood loss leads to decreased blood pressure, tachycardia, and weakness. Eventually the sensation of thirst appears. What hormone participates in the development of this sensation?
Correct answer	Angiotensin 2
B	Cortisol
C	Serotonin
D	Dopamine
E	Adrenalin
№	krok 2019
Topic	HNA
Task	On examination the patient was determined to have a strong, balanced, inert type of higher nervous activity according to Pavlov's classification. What temperament according to Hippocrates is it?
Correct answer	Phlegmatic
B	Sanguine
C	-
D	Melancholic
E	Choleric
№	krok 2019
Topic	CNS
Task	After a trauma the patient has developed right-sided paralyses and disturbed pain sensitivity. On the left side no paralyses are observed, but pain and thermal sensitivity is disturbed. What is the cause of this condition?
Correct answer	Unilateral right- (left)side spinal cord injury
B	Cerebellar injury
C	Motor cortex injury
D	Brainstem injury

E	Midbrain injury
№	krok 2019
Topic	Respiratory
Task	After hyperventilation an athlete developed a brief respiratory arrest. It occurred due to the following changes in the blood:
Correct answer	Decrease of CO_2 pressure
B	Increase of CO_2 and O_2 pressure
C	Increase of CO_2 pressure
D	Decrease of pH
E	Decrease of O_2 pressure
№	krok 2019
Topic	Blood
Task	ABO blood group is being determined. Erythrocyte agglutination occurred when standard sera of group I and group II were introduced into the blood being analyzed, while group III serum caused no agglutination. What agglutinogens do these
Correct answer	B
B	A
C	D and C
D	C
E	A and B
№	krok 2019
Topic	CNS
Task	After a certain CNS structure had been destroyed in a test animal, this animal lost its orienting reflexes. What structure had been destroyed?
Correct answer	Corpora quadrigemina
B	Substantia nigra
C	Lateral vestibular nuclei
D	Red nuclei
E	Medial reticular nuclei
№	krok 2019
Topic	Analyzator
Task	An experiment was conducted to measure the skin sensitivity threshold. What patches of skin have the highest sensitivity
Correct answer	Dorsal surface of the hand
B	Back

C	Face
D	Shoulder
E	Shin
№	krok 2019
Topic	HNA
Task	I.M. Siechenov has proven that a tired limb restores its working capacity faster if during its period of rest another limb works. It became a basis for the concept of:
Correct answer	Active rest
B	Pessimum
C	Optimum
D	Fatigue
E	Parabiosis
№	krok 2019
Topic	HNA
Task	A student, whose educational achievements throughout the semester were poor, feels emotionally tense during the final test. What is the primary cause that induced the leading mechanism of emotional tension in this case?
Correct answer	Lack of information
B	Lack of energy and information
C	Lack of energy
D	Lack of time and energy
E	Lack of time
№	krok 2019
Topic	Digestion
Task	Disturbed activity of trypsin and chymotrypsin leads to disturbed protein breakup in the small intestine. Activity of these enzymes depends on the presence of the following factor:
Correct answer	Enterokinase
B	Pepsin
C	Na^+ salts
D	Hydrochloric acid
E	Bile acids
№	krok 2019

Topic	Hormones
Task	Human brain produces endogenous peptides that are similar to morphine and can reduce pain perception. Name these peptides:
Correct answer	Endorphins
B	Statins
C	Vasopressin
D	Oxytocin
E	Liberins
№	krok 2019
Topic	Hormones
Task	People, who for a long time remained in hypodynamic state, develop intense pain in the muscles after a physical exertion. What is the most likely cause of this pain?
Correct answer	Accumulation of lactic acid in muscles
B	Intensive breakdown of muscle proteins
C	Increased content of ADP in muscles
D	Decreased content of lipids in muscles
E	Accumulation of creatinine in muscles
№	krok 2019
Topic	Hormones
Task	A 40-year-old woman on examination presents with intensified basal metabolic rate. What hormone present in excess leads to such condition?
Correct answer	Triiodothyronine
B	Aldosterone
C	Thyrocalcitonin
D	Somatostatin
E	Glucagon
№	krok 2019
Topic	Hormones
Task	Domestic accident has resulted in a significant blood loss in the patient, which was accompanied by a drop in blood pressure. What hormones ensure quick restoration of the blood pressure caused by a blood loss?
Correct answer	Adrenaline, vasopressin
B	Aldosterone
C	Reproductive hormones

D	Cortisol
E	Oxytocin
№	krok 2019
Topic	Extable tissues
Task	<i>KCl</i> concentration in a solution that surrounds an isolated cell was increased. How will resting membrane potential (RMP) and cell excitability change in this case?
Correct answer	RMP decreases, excitability increases
B	RMP increases, excitability decreases
C	RMP and excitability remain unchanged
D	RMP increases, excitability increases
E	RMP decreases, excitability remains unchanged
№	krok 2019
Topic	Heart
Task	An isolated heart was used to study excitation conduction velocity in different areas of the heart. What area had the lowest velocity of excitation conduction?
Correct answer	Atrioventricular node
B	Atrial myocardium
C	Ventricular myocardium
D	His bundle
E	Purkinje fibers
№	krok 2019
Topic	CNS
Task	The dorsal root of the spinal nerve of a test animal was severed. What changes will occur in the innervation area?
Correct answer	Loss of sensitivity
B	Loss of motor function
C	Decreased muscle tone
D	Increased muscle tone
E	Loss of sensitivity and motor function
№	krok 2019
Topic	Vessels
Task	Systemic blood pressure of a person equals 120/65 mm Hg. Blood ejection into aorta occurs when left ventricular pressure
Correct answer	120 mm Hg

B	65 mm Hg
C	90 mm Hg
D	10 mm Hg
E	100 mm Hg
№	krok 2019
Topic	ANS
Task	A 40-year-old person developed elevated blood pressure after an emotional excitement. What is the likely cause of this effect?
Correct answer	Increased sympathetic nervous system tone
B	Increased parasympathetic nervous system tone
C	Arteriolar dilation
D	Decreased cardiac contraction frequency
E	Hyperpolarization of cardiomyocytes
№	krok 2019
Topic	Hormones
Task	On your physiology class, the professor asks you to report about the effects of various body hormones and neurotransmitters on the metabolism of glucose. You begin your report with the statement that the use of glucose by the cell is preceded by absorption through the plasma membrane from the extracellular matrix into the cell. Which of the following hormones is most likely responsible for the glucose uptake by the cell?
Correct answer	Insulin
B	Thyroxine
C	Epinephrine
D	Aldosterone
E	Glucagon
№	krok 2019
Topic	Hormones
Task	A 16-year-old girl concerned about her sexual development comes to the physician. She mentions that she has still not had a menstrual period. However, she is otherwise a healthy girl with no significant medical problems since birth. On physical examination, her vital signs are stable. She does not have pubic hair and her breast is slightly elevated with areola remaining in contour with surrounding breast. Which of the following is the most likely cause of this abnormal physical development?
Correct answer	Ovarian insufficiency
B	Hyperthyroidism
C	Pancreatic islet insufficiency

D	Hypothyroidism
E	Adrenal medulla hyperfunction
№	krok 2019
Topic	Excretion
Task	An 11-year-old girl is brought to the doctor's office by her mother who states her daughter has been weak with swollen face for 3 days. The mother states her daughter had always been healthy and active until the initiation of symptoms. Upon inquiry, the girl describes a foamy appearance of her urine but denies blood in urine, urinary frequency at night, or pain during urination. Physical examination reveals generalized swelling of the face and pitting edema on the lower limbs. Laboratory study shows proteinuria and microscopic hematuria. Which of the following is the most likely cause of findings in the laboratory
Correct answer	Increased permeability across the glomerular capillary wall
B	Increased hydrostatic pressure in Bowman's capsule
C	Increased plasma oncotic pressure
D	-
E	Increased glomerular hydrostatic pressure
№	krok 2019
Topic	Hormones
Task	A group of researchers aimed to study cardiac physiology found that overstretching of atria in the heart leads to decreased sodium reabsorption in the distal convoluted tubule and increase in glomerular filtration rate. Which of the following is the most likely cause of physiologic effects discovered by researchers?
Correct answer	Natriuretic peptide
B	Renin
C	Angiotensin
D	Antidiuretic hormone
E	Aldosterone
№	krok 2019
Topic	Analyzers
Task	A 20-year-old female comes to the clinic after missing her last 2 periods. Her cycles are usually regular, occurring at 28-30 day interval with moderate bleeding and some abdominal discomfort. She also complains of progressively diminishing peripheral vision. Her doctor reveals loss of vision in the lateral halves of both eyes. Involvement of which of the following structures would you most likely expect to be the reason of bitemporal hemianopsia?
Correct answer	Optic chiasm
B	Right optic tract

C	Left optic tract
D	Right optic nerve
E	Left optic nerve
№	krok 2020
Topic	CNS
Task	A pathological processes involves conditions pathways of the spinal cord, resulting in disturbed pain sensation in the skin and muscles. What pathways are affected?
Correct answer	Spinothalamic
B	Medial cortricospinal
C	Anterior spinocerebellar
D	Lateral cortricospinal
E	Ventral spinocerebellar
№	krok 2020
Topic	CNS
Task	A patient has signs of striatopallidal system damage. These signs are caused by disturbed synthesis of a certain mediator in certain structure. Name this mediator and its corresponding structure
Correct answer	Dopamine – substantia nigra
B	Noradrenaline - putamen
C	Adrenaline - thalamus
D	Adrenaline – globus pallidus
E	Serotonin – caudate nucleus
№	krok 2020
Topic	hormone
Task	A laboratory rat with chronic kidney failure has osteoporosis, pathologic calcification of the internal organs, and arterial hypertension. These disturbances are associated with the increased activity of the following hormone
Correct answer	Parathyroid hormone
B	Thyroxin
C	Triiodothyronine
D	Adrenaline
E	Caicitonin
№	krok 2020
Topic	Digestesion

Task	Clinical blood testing is recommended to be done in the morning and on an empty stomach. What change in the blood composition is likely if a bloodsample was obtained after a meal?
Correct answer	Increased leukocyte count
B	Decreased erythrocyte count
C	Increased number of plasma proteins
D	Decreased platelet count
E	Increased erythrocyte count
№	krok 2020
Topic	Analizator
Task	A 25-years old woman complains of deteriorating vision. Examination revealed a defect in accommodation, the pupils is dilated and unresponsive to light. What muscles are functionally disturbed in this case?
Correct answer	Iris sphincter muscles, ciliary muscle
B	Lateral rectus muscles, iris sphincter muscles
C	Superior oblique muscles, ciliary muscle
D	Iris dilator muscles, ciliary muscle
E	Iris sphincter and dilator muscles
№	krok 2020
Topic	Metabolism
Task	Fasting energy expenditure is being measured in a person, who is lying down in a state of physical and mental rest, while the room temperature is within the comfort zone. When will the energy expenditure be at its highest?
Correct answer	17.00- 18.00
B	03.00 – 04.00
C	10.00 – 12.00
D	07.00 – 08.00
E	2000 – 00.00
№	krok 2020
Topic	Analizator
Task	A balled dancer spins to the left. During the spin, her eyes snap quickly to the left. This fast eye movement is caused by the
Correct answer	Otolith vestibular receptors
B	Tendon receptors
C	Muscle receptors
D	Joint receptors

E	Vestibular receptors of the semicircular ducts
№	krok 2020
Topic	Digestesion
Task	A 60- years old man complains of pain in his lower abdomen and frequent stools. Stool analysis shows increased levels of neural fats in the patient's feces. Incomplete digestion of fats is caused by the deficiency of a certain enzyme. Name this
Correct answer	Lipase
B	aminopeptidase
C	enterokinase
D	pepsin
E	Maltase
№	krok 2020
Topic	hormone
Task	The renal artery of a test rabbit was surgically narrowed. One month later a significant increased in systemic arterial pressure was registered in the animal. What regulatory mechanism caused the change in the animal's blood pressure?
Correct answer	Angiotensine II
B	Adrenaline
C	Noradrenaline
D	serotonin
E	Vasopresine
№	krok 2020
Topic	neuromuscular synapse
Task	A patient complains of rapid fatigability and serves muscle weakness. Examination detected an autoimmune disease that disturbs the neuromuscular synapses. What mediator is likely to be blocked in this case?
Correct answer	Acetylcholine
B	Noradrenaline
C	Dopamine
D	Serotonin
E	Glycine
№	krok 2020
Topic	Digestesion
Task	A patient with chledocholithiasis has fatty colorless stood because of obturation of the biliary tract. What bile component is absent, causing streatorrhea?

Correct answer	Bile acids
B	Bile pigments
C	Cholesterol
D	Alkaline phosphates
E	Fatty acids
№	krok 2020
Topic	ECG
Task	ECG of the patient shows increased duration of the QRS complex. What is the most likely cause?
Correct answer	Increased period of ventricular excitation
B	Increased arterial excitability
C	Disturbed conduction in the atrioventricular node
D	Increased arterial ventricular excitability
E	Increased period of arterial excitation
№	krok 2020
Topic	hormone
Task	A 45 years old man complains of frequent fevers, tachycardia, irritability, hair loss, weight loss and hand tremor. In this case, blood test will show the high levels of the hormones produced in the
Correct answer	Thyroid
B	Gonads
C	Pancreas
D	Adrenal medulla
E	Adrenal cortex
№	krok 2020
Topic	CNS
Task	What compensatory response occurs in the human body, when external temperature significantly rises?
Correct answer	Dilation of the cutaneous blood vessels
B	Increased muscle tone
C	peripheral vasoconstriction
D	Dilation of the visceral blood vessels
E	Decreased perspiration
№	krok 2020
Topic	Respiratory

Task	A person development increased pulmonary ventilation due to physical exertion. What indicator of pulmonary function will be significantly increased compared to the resting state?
Correct answer	Respiratory volume
B	Total lung capacity
C	Expiration reserve volume
D	Inspiratory reserve volume
E	Vital lung capacity
№	krok 2020
Topic	Respiratory
Task	When preparing for an important sports contest, it is recommended to train at high altitude (2-3 km above mean sea level). Prolonged exposure to such condition leads to
Correct answer	Decrease of pO ₂ , which stimulates erythropoiesis and increased blood oxygen capacity.
B	Decrease blood viscosity
C	Decrease of ESR
D	Improvement of plasma colloid-suspension characteristics
E	Increase of arteriovenous oxygendifference
№	krok 2020
Topic	hormone
Task	Decreased vasopressin synthesis caused polyuria and as a result, marked dehydration. What is the mechanisms of polyuria
Correct answer	Decreased canalicular reabsorption of water
B	Decreased canalicular reabsorption of Na ions
C	Increased glomerular filtration
D	Decreased canalicular reabsorption of protein
E	Decreased reabsorption of glucose
№	krok 2020
Topic	ECG
Task	A 65- years old man periodically feels pain under his left shoulder blade and in his left shoulder. After a significant physical exertion, the pain sharply intensified. Based on the ECG findings, the diagnosis of acute myocardial infarction was made. What type of pain was observed in this case?
Correct answer	Irradiating pain
B	Phantom limb pain

C	Visceral pain
D	Causalgia
E	
№	krok 2020
Topic	CNS
Task	After a cerebral hemorrhage the patient has lost the ability to understand speech. Where in the cortex is the site of trauma in
Correct answer	Superior temporal lobe
B	Medial frontal lobe
C	Inferior frontal lobe
D	Superior frontal lobe
E	Medial temporal lobe
№	krok 2020
Topic	Digestion
Task	A certain type of digestion is disturbed in the patient's small intestine. This type of digestion occurs on the apical surface of enterocytes and used the membrane-bound enzymes adsorbed in the glycocalyx. What type of digestion is it?
Correct answer	Membrane
B	Cavitary
C	Autolytic
D	Proper
E	symbiotic
№	krok 2020
Topic	hormone
Task	A 40-years old woman on examination presents with intensified basal metabolic rate. What hormone presents in excess leads to such condition?
Correct answer	Triiodothyronine
B	Glucagon
C	Aldosterone
D	Somatostatin
E	Thyrocalcitonin
№	krok 2020
Topic	ANS

Task	A test animal receives electrical impulses that irritate the sympathetic nerve that innervates blood vessels of the skin. What reaction will it cause in the blood vessels?
Correct answer	Arterial and venous constriction
B	Arterial and venous dilation
C	Arterial dilation
D	Venous dilation
E	No reaction
№	krok 2020
Topic	ECG
Task	The patient ECG shows that in the second standard lead from the extremities the P waves are positive, their amplitude is 0.1 mV (norm is 0.005-0.25 mV), duration 0.1 seconds (norm is 0.007-0.10 seconds). It can be concluded that the following process occurs normally in the cardiac atria
Correct answer	Depolarization
B	Repolarization
C	Excitation
D	Relaxation
E	Contraction
№	Krok 2021
Topic	CNS
Task	Pathological examination of the spinal cord of a deceased 70-year-old man shows destruction and a decrease in the number of cells in the nuclei of the cervical and thoracic anterior horns. What functions were impaired in this man during his life?
Correct answer	Motor functions of the upper limbs
B	Sensitivity and motor functions of the upper limbs
C	Motor functions of the lower limbs
D	Sensitivity of the lower limbs
E	Sensitivity of the upper limbs
№	Krok 2021
Topic	Hormone
Task	40-year-old woman during examination presents with intensified basal
Correct answer	Triiodothyronine
B	Glucagon
C	Somatostatin

D	Thyrocalcitonin
E	Aldosterone
№	Krok 2021
Topic	Excitability tissues
Task	In an experiment, a frog neuromuscular preparation had been processed with a curare-like—substance, which led to the disappearance of muscle contractions in response to electrical stimulation. What function of the muscle cell membrane is
Correct answer	Reception of the mediators in the neuromuscular synapse
B	Change in the permeability for different substances
C	Creation of the electric potentials on the both sides of the membrane
D	Creation of a barrier between the intracellular environment and surrounding intercellular fluid
E	Maintenance of the internal cell structure, its cytoskeleton
№	Krok 2021
Topic	Hormone
Task	A group of researchers aimed to study cardiac physiology found that overstretching of atria in the heart leads to decreased sodium reabsorption in the distal convoluted tubule and increase in glomerular filtration rate. Which of the following is the most likely cause of physiologic effects discovered by researchers?
Correct answer	Natriuretic peptide
B	Vasopressin
C	Angiotensin
D	Renin
E	Aldosterone
№	Krok 2021
Topic	Heart
Task	1. ECG of a man shows an increased duration of the QT interval. It may be due to a decrease in the speed of the following in the ventricles
Correct answer	Depolarization and repolarization
B	Contraction
C	Depolarization
D	Repolarization
E	Relaxation
№	Krok 2021
Topic	Hormone

Task	1. People, who live in hot climates, have reduced blood levels of a certain hormone that is important for adaptive thermoregulation. What hormone is it?
Correct answer	Thyroxine
B	Insulin
C	Cortisol
D	Somatotropin
E	Glucagon
№	Krok 2021
Topic	Sensory system
Task	With age, a person develops presbyopia (farsightedness). Why does it happen?
Correct answer	Decreased elasticity of the lens
B	Clouding of the lens
C	Elongation of the eyeball
D	Shortening of the eyeball
E	Retinal atrophy
№	Krok 2021
Topic	Excretion
Task	Laboratory tests of a 54-year-old man show that his inulin clearance is 120 mL/min., which means that the following process occurs normally in this man
Correct answer	Glomerular filtration rate
B	Tubular reabsorption
C	Renal blood flow
D	Tubular secretion
E	Renal plasma flow
№	Krok 2021
Topic	Vessels
Task	A test animal receives electrical impulses that irritate the sympathetic nerve that innervates blood vessels of the skin. What reaction will it cause in the blood vessels?
Correct answer	Arterial and venous constriction
B	Arterial dilation
C	Arterial and venous dilation
D	No reaction

E	Venous dilation
№	Krok 2021
Topic	Hormone
Task	A 16-year-old girl has jin hair on the pubis and in the armpits, her mammary glands are underdeveloped. She has no menstruations. What hormone imbalance can these symptoms be the indicative of?
Correct answer	Ovarian failure
B	Adrenal medulla hyperfunction
C	Hyperthyroidism
D	Hypothyroidism
E	Adrenal zona reticularis hyperfunction
№	Krok 2021
Topic	CNS
Task	The dorsal root.ofthe spinalnerveof a test animal was severed. What changeswill occur in the innervation area?
Correct answer	Loss of sensitivity
B	Loss of motor function
C	Increased muscle tone
D	Decreased muscle tone
E	Loss of sensitivity and motor function
№	Krok 2021
Topic	CNS
Task	A man complains that at a mention of past tragic events in his life he develops tachycardia, shortness of breath, and a sharp increase in blood pressure. What structures of the central nervous system enable such cardiorespiratory responses?
Correct answer	Cerebral cortex
B	Lateral nuclei of the hypothalamus
C	Corpora quadrigemina in the midbrain
D	Cerebellum
E	Specific nuclei of the thalamus
№	Krok 2021
Topic	Respiratory
Task	As a result of the injury, the spinal cord of a person was damaged with a complete its rupture at the 1 eveLof-the first eervical vgilehra. How will the breathing of the patient change?
Correct answer	Breathing will stop

B	Breathing will remain unchanged
C	Respiratory rate will decrease
D	Respiratory rate will increase
E	Breathing depth will increase
№	Krok 2021
Topic	Hormone
Task	People, who live in mountainous areas have an increased erythrocyte count in blood, which may be caused by increase in production of the following in the kidneys
Correct answer	Erythropoietin
B	Prostaglandins
C	Vitamin D ₃
D	Renin
E	Urokinase
№	Krok 2021
Topic	CNS
Task	During an abdominal surgery, a reflex cardiac arrest has occurred. Where is this reflex center located?
Correct answer	In medulla oblongata
B	In midbrain
C	In cerebral cortex
D	In diencephalon
E	In spinal cord
№	Krok 2021
Topic	Excitability tissues
Task	In an experiment on an isolated squid giant axon submerged in a salt solution, the extracellular potassium ions concentration was increased to the level of the intracellular potassium ions concentration. What changes in the membrane potential will occur
Correct answer	Potential disappears
B	Potential remains unchanged
C	Potential first decreases and then increases
D	Potential increases
E	Potential decreases
№	Krok 2021

Topic	CNS
Task	In an experiment, electrical stimulation of neurons in the brain of a test animal resulted in hypophagia (refusal to eat). Electrodes were applied to the following area of the brain in this case:
Correct answer	Hypothalamus
B	Thalamus
C	Neurohypophysis
D	Red nucleus
E	Adenohypophysis
№	Krok 2021
Topic	Hormone
Task	A man presents with decreased vasopressin synthesis, which causes polyuria and results in marked dehydration. What is the most likely polyuria mechanism in this case?
Correct answer	Decreased tubular reabsorption of water
B	Disturbed tubular reabsorption of <i>Na</i> ions
C	Decreased tubular reabsorption of protein
D	Increased hydrostatic pressure
E	Disturbed glucose reabsorption
№	Krok 2021
Topic	Heart
Task	An isolated cell of a human heart automatically generates excitation impulses at the rate of 60/min. This cell was obtained from
Correct answer	Sinoatrial node
B	Atria
C	Ventricles
D	Atrioventricular node
E	His bundle
№	Krok 2021
Topic	Respiratory
Task	A person has increased pulmonary ventilation because of physical exertion. What indicator of external respiration will be significantly increased compared to the resting state?
Correct answer	Vital lung capacity
B	Respiratory volume
C	Total lung capacity

D	Inspiratory reserve volume
E	Expiratory reserve volume
№	Krok 2021
Topic	Hormone
Task	A long-term taking of potassium preparations has caused hyperkalemia in the patient. This condition results in the following changes in secretion:
Correct answer	Increased aldosterone secretion
B	Decreased vasopressin secretion
C	Increased vasopressin secretion
D	Decreased aldosterone secretion
E	Decreased renin secretion
№	Krok 2021
Topic	CNS
Task	After a cerebral trauma a person has lost the eyesight. What areas of the cerebral cortex are likely to be damaged, causing this
Correct answer	Occipital
B	Temporal
C	Temporal and parietal
D	Parietal
E	Frontal
№	Krok 2021
Topic	Heart
Task	A man has atrioventricular block of the I degree with a prolonged PQ interval of 0.25 seconds. What cardiac ability is disturbed in this case?
Correct answer	Conductivity
B	Pacemaking
C	Contractility
D	Excitability
E	Automatism
№	Krok 2021
Topic	Heart
Task	Ventricular myocardium of the examined person exhibits disturbed repolarization processes. It causes disturbance in amplitude, configuration, and duration of the following wave:

Correct answer	T
B	Q
C	P
D	S
E	R
№	Krok 2021
Topic	BLOOD
Task	Liver diseases usually are accompanied by a marked tendency to bleed. Why is it so?
Correct answer	Decreased synthesis of prothrombin and fibrinogen
B	Decreased blood levels of potassium
C	Disturbed pigment metabolism
D	Decreased synthesis of bile acids
E	Increased breakdown of coagulation factors
№	Krok 2021
Topic	Heart
Task	Excitation processes in cardiomyocyte have been studied in an experiment. It was
Correct answer	Ca ⁺⁺ channels
B	Li ⁺ channels
C	Mg ⁺⁺ channels
D	K ⁺ channels
E	Cl ⁻ channels
№	Krok 2021
Topic	Heart
Task	During patient examination, the doctor conducts auscultation to assess the functioning of the mitral valve. Where can the tones of this valve be auscultated?
Correct answer	At the cardiac apex
B	At the edge of the sternum on the right, opposite the cartilage of rib 5
C	At the edge of the sternum, in the second intercostal space on the left
D	At the edge of the sternum on the left, opposite the cartilage of rib 5
E	At the edge of the sternum, in the second intercostal space on the right
№	Krok 2021

Topic	Hormone
Task	A man presents with osteoporosis. There are hypercalcemia and hypophosphatemia in his blood. What is the cause of his condition?
Correct answer	Increased secretion of parathyroid hormone
B	Inhibited parathyroid hormone secretion
C	Increased thyroxine, secretion
D	Increased secretion of catecholamines
E	Inhibited secretion of corticosteroids
№	Krok 2021
Topic	CNS
Task	During examination of a man, who was in a car accident, the neurologist has detected dysmetria. This sign is characterized by:
Correct answer	Inability to conduct a finger-to-nose test with eyes closed
B	Speech disorder
C	Impaired muscle tone
D	Disappearance of co-contraction ability of antagonist muscles
E	Muscle tremors when performing voluntary movements
№	Krok 2021
Topic	Hormone
Task	A child has signs of delayed physical and mental development (cretinism). This condition is caused by deficiency of the
Correct answer	Thyroxine
B	Calcitonin
C	Somatotropin
D	Insulin
E	Testosterone
№	Krok 2021
Topic	Heart
Task	ECG of the patient shows increased duration of the QRS complex. What is the most likely cause?
Correct answer	Increased period of ventricular excitation
B	Disturbed conduction in the atrioventricular node
C	Increased atrial excitability
D	Increased atrial and ventricular excitability
E	Increased period of atrial excitation