

**Kharkov National Medical University
Physiology department**

Study guide

**Training tests of license exam "Krok 1"
for individual work of English-medium students
of medical and dental faculties**

Тренировочные тесты в формате «Крок 1» для самостоятельной подготовки
студентов медицинского и стоматологического
факультетов с англоязычной формой обучения

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Тренировочные тесты в формате «Крок 1» для самостоятельной подготовки студентов медицинского и стоматологического факультета с англоязычной формой обучения / Сост. Д.И. Маракушин, Л.В. Чернобай, И.С. Кармазина, И. Н. Исаева, Н.С. Глоба, Р.В. Алексеенко, О.В. Васильева. – Харьков: ХНМУ, 2017. – 110 с.

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Dear Students!

This Study Guide was created to help you to get ready for License exam “Krok 1”, but it’s not the only reason. In your future life as a doctor every day you will face different clinical situations and you will have to make a decision what to do. Each task in this manual is a little clinical situation which you have to solve and get the proper answer about diagnosis, research methods, and possible treatment, etc. So, in fact, it is the first step to achieve your dream to become a doctor. Physiology is a base of all medical sciences that’s why whichever medical career you may choose you’ll use your physiology knowledge anyway. Our subject may be difficult but we hope for you it will become interesting and one of your favorites and this Study Guide will help you to make a firm step towards your dream!

Good luck! Let’s start to work!

Algorithm of task solution

- 1. Read the task carefully!**
- 2. Chose key words!**
- 3. Remember the mechanism and show it in scheme.**
- 4. And chose correct option!**

For example:

The penetration of the irritable cell membrane for potassium ions has been increased during an experiment. What changes of membrane electric status can occur?

- A. Action potential
- B. Hyperpolarization
- C. Depolarization
- D. No changes
- E. Local response

- 1. Read the task carefully!**
- 2. Chose key words!** They are **PENETRATION, POTASSIUM, INCREASED**
- 3. Positive after-potential (hyperpolarization, after-hyperpolarization) linked with changes (increased) in permeability of cell membrane for potassium ions.**
- 4. So, chose correct option which is B. Hyperpolarization.**

GENERAL PHYSIOLOGY
HIGER INTEGRATIVE FUNCTIONS & SENSORY SYSTEMS

Physiology of excitable tissues

<p>1. The penetration of the irritable cell membrane for potassium ions has been increased during an experiment. What changes of membrane electric status can occur?</p> <p>A. Action potential B. Hyperpolarization C. Depolarization D. No changes E. Local response</p>	<p>Correct answer is _____</p>
<p>2. During the experiment on the influence chemical substances in the muscles the reaction of Ca²⁺-pump is weakened. Which phenomenon will be observed?</p> <p>A. Activation of the sodium-potassium pump B. Decreased AP C. Prolonged duration of the AP D. Decreased velocity of the AP distribution E. Prolonged relaxation</p>	<p>Correct answer is _____</p>
<p>3. The action of electric current on the excitable cell caused depolarization of its membrane. Movement of what ions through the membrane caused depolarization?</p> <p>A. Na⁺ B. Ca²⁺ C. K⁺ D. Cl⁻ E. HCO⁻</p>	<p>Correct answer is _____</p>
<p>4. Ion channels have been blocked in the excitative cell. It doesn't change significantly the quiet potential, but the cell has lost its capacity to the generation of AP (action potential). What channels have been blocked?</p> <p>A. Calcium B. Chlorine C. Sodium D. Potassium E. Sodium and potassium</p>	<p>Correct answer is _____</p>
<p>5. The penetration of the irritable cell membrane for potassium ions has been increased experimentally. What changes of membrane electric status can occur?</p> <p>A. Depolarization B. Action potential C. No changes D. Local response E. Hyperpolarization</p>	<p>Correct answer is _____</p>

<p>6. Isolated muscle of a frog is rhythmically irritated with electric impulses. Every next impulse is in a period of relaxation from the previous contraction. What contraction of the muscle appears?</p> <p>A. Tonic B. Single C. Continuous (smooth) tetanus D. Asynchronous E. Waved tetanus</p>	<p>Correct answer is _____</p>
<p>7. Due to activation of ion channels of external membrane of excitable cell its rest potential has significantly increased. What channels were activated?</p> <p>A. Fast calcium channels B. Natrium and calcium channels C. Slow calcium channels D. Potassium channels E. Natrium channels</p>	<p>Correct answer is _____</p>
<p>8. Due to action of electric current on the excitable cell there appeared depolarization of its membrane. Movement of what ions through the membrane caused depolarization?</p> <p>A. K^+ B. Na^+ C. Cl^- D. HCO_3^- E. Ca^{2+}</p>	<p>Correct answer is _____</p>
<p>9. ATP synthesis is totally blocked in a cell. How will the value of membrane rest potential change?</p> <p>A. First it will increase, then decrease. B. First it will decrease, then increase C. It will disappear D. It will be considerably increased E. It will be slightly increased</p>	<p>Correct answer is _____</p>
<p>10. In course of an experiment a skeletal muscle is being stimulated by a series of electric impulses. What type of muscle contraction will arise, if every subsequent impulse comes in the period of shortening of the previous single muscle contraction?</p> <p>A. Asynchronous tetanus B. Partial tetanus C. Holotetanus (smooth) D. A series of single contractions E. Muscle contracture</p>	<p>Correct answer is _____</p>
<p>11. Rest potential of a cell equals -80 mV. At what stage of action potential did the membrane potential equal +30 mV?</p> <p>A. After depolarization B. After hyperpolarization C. Reverse polarization D. – E. Depolarization</p>	<p>Correct answer is _____</p>

<p>12. A patient came to the hospital complaining about quick fatigability and apparent muscle weakness. Examination revealed an autoimmune disease that causes disorder of functional receptor condition in neuromuscular synapses. What transmitter will be blocked?</p> <ul style="list-style-type: none"> A. Noradrenalin B. Serotonin C. Glycine D. Dopamine E. Acetylcholine 	<p>Correct answer is _____</p>
<p>13. Which muscle contraction will be observed in the upper extremity during holding (not moving) a load in a certain position?</p> <ul style="list-style-type: none"> A. Isotonic B. Isometric C. Auxotonic D. Concentric E. Excentric 	<p>Correct answer is _____</p>
<p>14. An isolated muscle fiber is under examination. It was established that the threshold of stimulation force became significantly lower. What is the cause of this phenomenon?</p> <ul style="list-style-type: none"> A. Inactivation of sodium channels of membrane B. Activation of sodium channels of membrane C. Inactivation of potassium channels of membrane D. Activation of potassium channels of membrane E. Block of energy production in the cell 	<p>Correct answer is _____</p>
<p>15. Tissue is being stimulated by electric cathodic impulse with amplitude of 70% of threshold. What changes of membrane potential will be observed?</p> <ul style="list-style-type: none"> A. Hyperpolarization B. Action potential C. Partial depolarization D. No changes E. – 	<p>Correct answer is _____</p>
<p>16. Curarelike substances (dithylinum) make it impossible for skeletal muscles to contract because they block:</p> <ul style="list-style-type: none"> A. Membrane conduction of excitement B. Central synapses C. Neuromuscular synapses D. Ganglionic synapses E. Proprioceptors 	<p>Correct answer is _____</p>
<p>17. In the dental practice, the vitality of tooth tissues is estimated by electric pulp test. What parameter is assessed?</p> <ul style="list-style-type: none"> A. Chronaxie B. Productive time C. Accommodation D. Lability E. Threshold stimulus intensity 	<p>Correct answer is _____</p>

<p>18. It is required to set an experiment on an isolated excitable cell and to achieve increase of membrane rest potential (hyperpolarization). What ion channels should be activated to achieve such a result?</p> <ul style="list-style-type: none"> A. Sodium B. Potassium C. Calcium D. Potassium and sodium E. Sodium and calcium 	<p>Correct answer is _____</p>
<p>19. Microelectrode technique allowed to register a potential following "all-or-none" law and being able of undecremental spreading. Specify this potential:</p> <ul style="list-style-type: none"> A. Excitatory postsynaptic potential B. Inhibitory postsynaptic potential C. Rest potential D. Receptor potential E. Action potential 	<p>Correct answer is _____</p>
<p>20. It is required to evaluate the level of tissue excitability. For this purpose one should determine:</p> <ul style="list-style-type: none"> A. Resting potential B. Critical level of depolarization C. Action potential amplitude D. Action potential duration E. Depolarization threshold 	<p>Correct answer is _____</p>
<p>21. 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:</p> <ul style="list-style-type: none"> A. K^+ and Na^+ B. K^+ and Cl^- C. Ca^{2+} and Cl^- D. Na^+ E. Ca^{2+} 	<p>Correct answer is _____</p>
<p>22. When measuring total muscle action potential it was subject to the power-law relationship. The reason for this is that individual muscle fibers differ in:</p> <ul style="list-style-type: none"> A. Critical level of depolarization B. Depolarization threshold C. Diameter D. Conduction velocity E. Resting potential 	<p>Correct answer is _____</p>
<p>23. While exercising on a bicycle ergometer a sportsman was trying to choose such a load that would allow him to achieve the maximal performance of his muscles. What load intensity is required in this case?</p> <ul style="list-style-type: none"> A. Minimal B. Middle C. Maximal D. Alternating minimal and maximal E. Continuous minimal 	<p>Correct answer is _____</p>

<p>24. After prolonged exercising people usually experience intense muscle pain. What is its most likely cause?</p> <ul style="list-style-type: none"> A. Increased concentration of ADP in muscles B. Increased muscle excitability C. Intensified disintegration of muscle proteins D. Accumulation of lactic acid in muscles E. Accumulation of creatinine in muscles 	<p>Correct answer is _____</p>
<p>25. In the experiment, the permeability of excitable cell membrane for potassium ions has been increased. What changes can be expected in the membrane state?</p> <ul style="list-style-type: none"> A. There will be no changes B. Depolarization C. Hyperpolarization D. Action potential E. Local response 	<p>Correct answer is _____</p>
<p>27. Microelectrode analysis of nerve fiber bioelectrical activity revealed, that its membrane potential equals 90 mV. Its initial rest potential was 85 mV. What process occurs in this case?</p> <ul style="list-style-type: none"> A. Repolarization B. Depolarization C. Overshoot D. Supernormality E. Hyperpolarization 	<p>Correct answer is _____</p>
<p>28. It was established that the conduction velocity in the nerve fibers was equal to 120 m/sec. Specify these fibers:</p> <ul style="list-style-type: none"> A. Preganglionic sympathetic B. Preganglionic parasympathetic C. Postganglionic sympathetic D. Postganglionic parasympathetic E. Motoneuron axons 	<p>Correct answer is _____</p>
<p>29. Curariform substances introduced into a human body cause the relaxation of all skeletal muscles. What changes in the neuromuscular synapse cause this phenomenon?</p> <ul style="list-style-type: none"> A. Impaired acetylcholine release B. Impaired cholinesterase synthesis C. Blockade of Ca^{2+} channels of the presynaptic membrane D. Blockade of N-cholinergic receptors of the synaptic membrane E. Depolarization of the postsynaptic membrane 	<p>Correct answer is _____</p>
<p>30. What kind of muscle contraction occurs in an upper limb during an attempt to lift a load beyond one's strength?</p> <ul style="list-style-type: none"> A. Isometric B. Isotonic C. Auxotonic D. Phasic E. Single 	<p>Correct answer is _____</p>

Physiology of central nervous system

<p>1. In the experiment on the animal the part of the cerebral cortex hemispheres was removed. It caused elimination of previously formed conditioned reflex to the light irritation. What part of the cortex was removed?</p> <ul style="list-style-type: none"> A. Limbic cortex B. Temporal lobe C. Precentral convolution D. Postcentral convolution E. Occipital cortex 	<p>Correct answer is _____</p>
<p>2. Vegetative abnormalities in the sleep, heat regulation, all kinds of metabolism, diabetes insipidus are developing in the patient due to growth of the tumor in the III ventricle of brain. Irritation of the nucleus of what part of the brain can cause these symptoms?</p> <ul style="list-style-type: none"> A. Cerebral peduncles (cruces cerebri) B. Mesencephalic tegmentum C. Medulla D. Pons cerebelli E. Hypothalamus 	<p>Correct answer is _____</p>
<p>3. Due to cranial trauma the patient developed the symptoms: intention tremor, dysmetria, adiadochokinesis, dysarthria. What structure of the brain is injured?</p> <ul style="list-style-type: none"> A. Motor cortex B. Pale sphere C. Black substance D. Cerebellum E. Striatum 	<p>Correct answer is _____</p>
<p>4. Inhibition of alpha-motoneuron of the extensor muscles was noticed after stimulation of alpha-motoneuron of the flexor muscles during the experiment on the spinal column. What type of inhibition can this process cause?</p> <ul style="list-style-type: none"> A. Recurrent B. Reciprocal C. Presynaptic D. Depolarizational E. Lateral 	<p>Correct answer is _____</p>
<p>5. A 60-year-old man after cerebral hemorrhage felt asleep for a long time. Damage of what structure caused this state?</p> <ul style="list-style-type: none"> A. Cortex of the large hemispheres B. Black substances C. Reticular formation D. Nuclears of the cerebral nerves E. Hippocampus 	<p>Correct answer is _____</p>

<p>6. The ventral roots of 5 frontal segment of spinal cord were cut during experiment in the animal. What changes will take place in the innervation region?</p> <ul style="list-style-type: none"> A. Loss of temperature sensitivity B. Loss of touch sensitivity C. Loss of proprioceptive sensitivity D. Loss of movements E. Hypersensitivity 	<p>Correct answer is _____</p>
<p>7. A 50 year-old patient was injured on occipital region of the head. The closed skull's trauma was diagnosed. She was taken to the hospital. The medical examination on: deregulation of walking and balance, trembling of arms. What part of brain was injured?</p> <ul style="list-style-type: none"> A. The mind-brain B. The inter-brain C. The medulla oblongata D. The cerebellum E. The spinal cord 	<p>Correct answer is _____</p>
<p>8. When a patient with traumatic impairment of the brain was examined, it was discovered that he had stopped to distinguish displacement of an object on the skin. What part of the brain was damaged?</p> <ul style="list-style-type: none"> A. Parietal zone of the cortex B. Frontal zone C. Frontal central gurus D. Posterior central gurus E. Occipital zone of the cortex 	<p>Correct answer is _____</p>
<p>9. As a result of damage to certain structures of brainstem an animal lost orientation reflexes. What structures were damaged?</p> <ul style="list-style-type: none"> A. Medial nuclei of reticular formation B. Black substance C. Quadritubercular bodies D. Red nuclei E. Vestibular nuclei 	<p>Correct answer is _____</p>
<p>10. 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?</p> <ul style="list-style-type: none"> A. Sensitivity loss and loss of motor functions B. Loss of motor functions C. Sensitivity loss D. Decrease in muscle tone E. Increase in muscle tone 	<p>Correct answer is _____</p>

<p>11. A patient with disturbed cerebral circulation has problems with deglutition. What part of brain was damaged?</p> <ul style="list-style-type: none"> A. Forebrain B. Interbrain C. Midbrain D. Brainstem E. Cervical part of spinal cord 	<p>Correct answer is _____</p>
<p>12. After destruction of CNS structures an animal lost orientative reflexes. What structure was destroyed?</p> <ul style="list-style-type: none"> A. Lateral vestibular nuclei B. Black substance C. Medial reticular nuclei D. Quadrigeminal plate E. Red nucleus 	<p>Correct answer is _____</p>
<p>13. A patient staggers and walks astraddle. He has hypomyotonia of arm and leg muscles, staccato speech. In what brain section is this affection localized?</p> <ul style="list-style-type: none"> A. Putamen B. Caudate nucleus C. Motor cortex D. Red nucleus E. Cerebellum 	<p>Correct answer is _____</p>
<p>14. A man presents with increased heart rate, mydriatic pupils, and dry mouth. This condition results from the activation of the following system of function regulation:</p> <ul style="list-style-type: none"> A. Hypothalamo-pituitary-adrenal B. Sympathetic C. Parasympathetic D. Metasympathetic E. Vago-insular 	<p>Correct answer is _____</p>
<p>15. An animal has an increased tonus of extensor muscles. This the result of intensified information transmssion to the motoneurons of the spinal cord through the following descending pathways:</p> <ul style="list-style-type: none"> A. Reticulospinal B. Rubrospinal C. Lateral corticospinal D. Medial corticospinal E. Vestibulospinal 	<p>Correct answer is _____</p>
<p>16. As a result of spinal-cord trauma a 33 y.o. man has a disturbed pain and temperature sensitivity that is caused by damage of the following tract:</p> <ul style="list-style-type: none"> A. Medial spinocortical B. Lateral spinocortical C. Posterior spinocerebellar D. Anterior spinocerebellar E. Spinothalamic 	<p>Correct answer is _____</p>

<p>17. As a result of destruction of certain brainstem structures an animal has lost its orientative reflexes in response to strong photic stimuli. What structures were destroyed?</p> <ul style="list-style-type: none"> A. Posterior tubercles of quadrigeminal plate B. Anterior tubercles of quadrigeminal plate C. Red nuclei D. Vestibular nuclei E. Black substance 	<p>Correct answer is _____</p>
<p>18. A man was intoxicated with mushrooms. They contain muscarine that stimulates muscarinic cholinoreceptors. What symptoms signalize intoxication with inedible mushrooms?</p> <ul style="list-style-type: none"> A. Bronchi dilatation B. Increased heart rate C. Rise of arterial pressure D. Myotic pupils E. Mydriatic pupils 	<p>Correct answer is _____</p>
<p>19. In the experiment, an animal had its brain stem cut, which caused a rapid increase of extensor muscle tone (decerebrate rigidity). This condition arose because the muscles were no more under the control of the following brain structure:</p> <ul style="list-style-type: none"> A. Black substance B. Red nucleus C. Blue spot D. Striatum E. Gray tuber 	<p>Correct answer is _____</p>
<p>20. Cerebral hemorrhage caused serious disturbance of taste sensibility. What brain structure is most likely to be damaged?</p> <ul style="list-style-type: none"> A. Hypothalamus B. Amygdaloid body C. Postcentral gyrus D. Hippocampus E. Substantia nigra 	<p>Correct answer is _____</p>
<p>21. In course of an experiment a nerve is being stimulated by electric impulses. As a result of it sublingual and submaxillary glands discharge some dense viscous saliva. What nerve is being stimulated?</p> <ul style="list-style-type: none"> A. <i>N. glossopharyngeus</i> B. <i>N. facialis</i> C. <i>N. trigeminus</i> D. <i>N. vagus</i> E. <i>N. sympathicus</i> 	<p>Correct answer is _____</p>

<p>22. A patient after hypertension stroke does not have voluntary movements in his right arm and leg with the increased muscle tone in these extremities. What type of dysfunction of nervous system is it?</p> <ul style="list-style-type: none"> A. Central paresis B. Peripheral paresis C. Central paralysis D. Peripheral paralysis E. Reflex paresis 	<p>Correct answer is _____</p>
<p>23. A patient has a haemorrhage into the posterior central gyrus. What type of sensitivity on the opposite side will be disturbed?</p> <ul style="list-style-type: none"> A. Visual B. Auditory C. Olfactory D. Auditory and visual E. Skin and proprioceptive 	<p>Correct answer is _____</p>
<p>24. 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 through:</p> <ul style="list-style-type: none"> A. Neuromuscular synapses B. Conduction tracts C. Central synapses D. Efferent nerves E. Afferent nerves 	<p>Correct answer is _____</p>
<p>25. After a hemorrhage into the brainstem a patient has lost reflex of myosis as a reaction to increase of illumination. What structure was damaged?</p> <ul style="list-style-type: none"> A. Lateral reticular nuclei B. Medial reticular nuclei C. Vegetative nuclei of oculomotor nerve D. Red nuclei E. Black substance 	<p>Correct answer is _____</p>
<p>26. A patient complains of rapid fatigability. Objectively: he staggers and overbalances in the upright position with closed eyes. Skeleton muscular tonus is decreased. What brain structure is most likely to be damaged?</p> <ul style="list-style-type: none"> A. Precentral gyrus of cerebrum cortex B. Basal ganglions C. Cerebellum D. Thalamus E. Hypothalamus 	<p>Correct answer is _____</p>

<p>27. As a result of a trauma a patient has damaged anterior roots of spinal cord. What structures have been affected?</p> <p>A. Central processes of sensitive neurons of spinal ganglions B. Axons of motoneurons and axons of neurons of lateral horns C. Axons of neurons of lateral horns D. Peripheral processes of sensitive spinal ganglions E. Dendrites of neurons of spinal ganglions</p>	<p>Correct answer is _____</p>
<p>28. 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?</p> <p>A. Infraorbital B. Trigemini C. Facial D. Glossopharyngeal E. Vagus</p>	<p>Correct answer is _____</p>
<p>29. A patient got a trauma that caused dysfunction of motor centres regulating activity of head muscles. In what parts of cerebral cortex is the respective centre normally localized?</p> <p>A. Superior part of precentral gyrus B. Inferior part of precentral gyrus C. Supramarginal gyrus D. Superior parietal lobule E. Angular gyrus</p>	<p>Correct answer is _____</p>
<p>30. A patient was diagnosed with paralysis of facial and masticatory muscles. The haematoma is inside the genu of internal capsule. What conduction tract is damaged?</p> <p>A. <i>Tr. cortico-spinalis</i> B. <i>Tr. cortico-thalamicus</i> C. <i>Tr. cortico-fronto-pontinus</i> D. <i>Tr. cortico-nuclearis</i> E. <i>Tr. cortico-temporo-parieto-occipitopontinus</i></p>	<p>Correct answer is _____</p>
<p>31. A 49-year old female patient has limitation of left limbs arbitrary movements. Muscular tonus of left hand and leg is overstrained and spasmodic, local tendon reflexes are strong, pathological reflexes are presented. What is the most likely development mechanism of hypertension and hyperreflexia?</p> <p>A. Motoneuron activation induced by stroke B. Activation of excitatory influence from the focus of stroke C. Inhibition of cerebral cortex motoneurons D. Reduction of descending inhibitory influence E. Activation of synaptic transmission</p>	<p>Correct answer is _____</p>

<p>32. A patient has corestenoma. What is the reason of such condition?</p> <p>A. Increased tonus of sympathetic centres B. Increased activity of sympathoadrenal system C. Increased tonus of parasympathetic centres D. Adrenaline action E. Noradrenaline action</p>	<p>Correct answer is _____</p>
<p>33. During an experiment the myotatic reflex has been studied in frogs. After extension in a skeletal muscle its reflectory contraction was absent. The reason for it might be a dysfunction of the following receptors:</p> <p>A. Golgi tendon organs B. Tactile C. Muscle spindles D. Nociceptors E. Articular</p>	<p>Correct answer is _____</p>
<p>34. 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:</p> <p>A. <i>Gyrus parahippocampalis</i> B. <i>Gyrus lingualis</i> C. <i>Gyrus angularis</i> D. <i>Gyrus supramarginalis</i> E. <i>Gyrus paracentralis</i></p>	<p>Correct answer is _____</p>
<p>35. 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:</p> <p>A. Postcentral gyrus B. Parietal C. Occipital D. Frontal E. Temporal</p>	<p>Correct answer is _____</p>
<p>36. 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?</p> <p>A. Basal ganglions B. Cerebellum C. Amygdaloid corpus D. Hippocamp E. Limbic system</p>	<p>Correct answer is _____</p>

<p>37. 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?</p> <ul style="list-style-type: none"> A. Trigeminal nerve B. Facial nerve C. Glossopharyngeal D. Vagus nerve E. Superlaryngeal nerve 	<p>Correct answer is _____</p>
<p>38. A patient consulted a doctor about a sensation of imbalance which appeared after a trauma. Which nerve is damaged?</p> <ul style="list-style-type: none"> A. Trigeminal nerve B. Facial nerve C. Vagus nerve D. Vestibulocochlear nerve E. Intermediate nerve 	<p>Correct answer is _____</p>
<p>39. 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?</p> <ul style="list-style-type: none"> A. Trigemini B. Vagus C. Glossopharyngeal D. Sublingual E. Accessory 	<p>Correct answer is _____</p>
<p>40. 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?</p> <ul style="list-style-type: none"> A. Muscles B. Afferent conductor C. Efferent conductor D. Nerve centres E. Receptors 	<p>Correct answer is _____</p>
<p>41. A patient presents with the following motor activity disturbances: tremor, ataxia and asynergia movements, dysarthria. The disturbances are most likely to be localized in:</p> <ul style="list-style-type: none"> A. Cerebellum B. Brainstem C. Medulla oblongata D. Basal ganglions E. Limbic system 	<p>Correct answer is _____</p>
<p>42. A patient got an injury of spinal marrow in a road accident that caused loss of tactile sensation, posture sense, and vibration sense. What conduction tracts are damaged?</p> <ul style="list-style-type: none"> A. Anterior spinocerebellar tract B. Rubrospinal tract C. Reticulospinal tract D. Tectospinal tract E. Fascicle of Goll and cuneate fascicle 	<p>Correct answer is _____</p>

<p>43. On examination a patient was found to have medial strabismus, the inward deviation of the eyeball and inability to abduct the eyeball outwards. What nerve is damaged?</p> <ul style="list-style-type: none"> A. Oculomotor B. Ocular C. Trochlear D. Abducent E. Visual 	<p>Correct answer is _____</p>
<p>44. A male with a lesion of one of the CNS parts has asthenia, muscular dystonia, balance disorder. Which CNS part has been affected?</p> <ul style="list-style-type: none"> A. Vestibular nuclei B. Reticular formation C. Red nuclei D. Cerebellum E. Black substance 	<p>Correct answer is _____</p>
<p>45. As a result of a craniocerebral injury a patient has decreased skin sensitivity. What area of the cerebral cortex may be damaged?</p> <ul style="list-style-type: none"> A. Posterior central gyrus B. Frontal cortex C. Anterior central gyrus D. Occipital region E. Cingulate gyrus 	<p>Correct answer is _____</p>
<p>46. 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 in this patient?</p> <ul style="list-style-type: none"> A. Specific thalamic nuclei B. Lateral hypothalamic nuclei C. Cerebellum D. Cerebral cortex E. Quadrigemina of mesencephalon 	<p>Correct answer is _____</p>
<p>47. A patient complains of pain in the heart area during acute attack of gastric ulcer. What vegetative reflex can cause this painful feeling?</p> <ul style="list-style-type: none"> A. Visceromotor reflex B. Viscerodermal reflex C. Viscerovisceral reflex D. Motor-visceral reflex E. Dermatovisceral reflex 	<p>Correct answer is _____</p>
<p>48. In a cat with decerebrate rigidity the muscle tone is to be decreased. This can be achieved by:</p> <ul style="list-style-type: none"> A. Stimulation of ampullar vestibular receptors B. Stimulation of vestibular nuclei of Deiters C. Stimulation of otolithic vestibular receptors D. Stimulation of the vestibulocochlear nerve E. Destruction of vestibular nuclei of Deiters 	<p>Correct answer is _____</p>

<p>49. As a result of an injury of the anterior spinal cord root was broken. Specify the neurons and their processes that had been damaged:</p> <ul style="list-style-type: none"> A. Axons of sensory neurons B. Dendrites of sensory neurons C. Axons of motor neurons D. Motor neuron dendrites E. Dendrites of association neurons 	<p>Correct answer is _____</p>
<p>50. As a result of continuous chronic encephalopathy, a patient has developed spontaneous motions and a disorder of torso muscles tone. These are the symptoms of the disorder of the following conduction tracts:</p> <ul style="list-style-type: none"> A. <i>Tractus spinothalamicus</i> B. <i>Tractus tectospinalis</i> C. <i>Tractus corticonuclearis</i> D. <i>Tractus rubrospinalis</i> E. <i>Tractus corticospinalis</i> 	<p>Correct answer is _____</p>
<p>51. 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?</p> <ul style="list-style-type: none"> A. Cerebral cortex B. Hippocampus C. Basal ganglion D. Reticular formation E. Red nuclei 	<p>Correct answer is _____</p>
<p>52. A fixed-run taxi passenger 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:</p> <ul style="list-style-type: none"> A. Holtz's reflex B. Hering-Breuer reflex C. Bainbridge reflex D. Dagnini-Aschner reflex E. Frank-Starling mechanism 	<p>Correct answer is _____</p>
<p>53. A 70-year-old patient is diagnosed with brainstem hemorrhage. Examination revealed increased tonus of flexor muscles accompanied by decreased tonus of extensor muscles. Such changes in muscle tonus can be explained by the irritation of the following brain structures:</p> <ul style="list-style-type: none"> A. Reticular formation B. Vestibular nuclei C. Red nuclei D. Quadrigeminal plate E. Black substance 	<p>Correct answer is _____</p>

<p>54. A patient who takes a blocker of membrane cytoceptors of efferent conductor synapses of autonomic nervous system complains about dry mouth. What receptors are blocked?</p> <ul style="list-style-type: none"> A. α-adrenoreceptors B. β-adrenoreceptors C. Nicotinic cholinoreceptors D. Muscarinic cholinoreceptors E. H_2-receptors 	<p>Correct answer is _____</p>
<p>55. A patient complains about pain in his upper jaw and toothache. Objectively: the patient feels pain when pressed in the region of the supraorbital foramen. What nerve is affected?</p> <ul style="list-style-type: none"> A. The first branch of trigeminus B. The second branch of trigeminus C. The third branch of trigeminus D. Trochlear nerve E. Facial nerve 	<p>Correct answer is _____</p>
<p>56. During a brain surgery it was noticed that stimulation of certain zones of cerebral cortex caused tactile and thermal sensations in patient. Which zone was being stimulated?</p> <ul style="list-style-type: none"> A. Precentral gyrus B. Postcentral gyrus C. Superior lateral gyrus D. Cingulate gyrus E. Parahippocampal gyrus 	<p>Correct answer is _____</p>
<p>57. A patient complains of an increased sensitivity of the posterior third of his tongue as well as of a gustatory disturbance in this region. What nerve is damaged?</p> <ul style="list-style-type: none"> A. Trigeminal B. Facial C. Glossopharyngeal D. Accessory E. Hypoglossal 	<p>Correct answer is _____</p>
<p>58. When students pass an exam, they often complain of having "dry mouth". The mechanism underlying the development of this condition is activation of the following processes:</p> <ul style="list-style-type: none"> A. Unconditioned sympathetic B. Unconditioned parasympathetic C. Conditioned sympathetic D. Unconditioned peripheral E. Conditioned parasympathetic 	<p>Correct answer is _____</p>

<p>59. After a patient had taken a blocking agent, his heart rate (HR) increased. Pressing on the eyeballs didn't result in the expected reflexory decrease in heart rate. What exactly was blocked by drug in the pacemaker cell?</p> <ul style="list-style-type: none"> A. α_1-adrenergic receptors B. β-adrenergic receptors C. M-cholinergic receptors D. Fast Na^+ channels E. Ca^{2+}-L-type channels 	<p>Correct answer is _____</p>
<p>60. A 36-year-old patient had had a traumatic brain injury caused a swallowing impairment. Which part of brain was affected?</p> <ul style="list-style-type: none"> A. Reticular formation B. Medulla oblongata C. Diencephalon D. Mesencephalon E. Thalamus 	<p>Correct answer is _____</p>
<p>61. Surface with an intact toad on it was inclined to the right. Tone of extensor muscles became reflexory higher due to the activation of the following receptors:</p> <ul style="list-style-type: none"> A. Photoreceptors of retina B. Vestibuloreceptors of semicircular ducts C. Vestibuloreceptors of utricle and saccule D. Proprioceptors E. Mechanoreceptors of foot skin 	<p>Correct answer is _____</p>
<p>62. An experiment was aimed at testing flexor reflex in a spinal frog, which was initiated by simultaneous stimulation with isolated pre-threshold electrical impulses. The frequency of those impulses such, that the reflex occurred. What process in nerve centers can be observed during this experiment?</p> <ul style="list-style-type: none"> A. Presynaptic summation B. Postsynaptic summation C. Temporal summation D. Threshold summation E. Spatial summation 	<p>Correct answer is _____</p>
<p>63. Parkinson's disease is caused by disruption of dopamine synthesis. What brain structure synthesizes this neurotransmitter?</p> <ul style="list-style-type: none"> A. Globus pallidus B. Hypothalamus C. Red nucleus D. Corpora quadrigemina E. Substantia nigra 	<p>Correct answer is _____</p>

<p>64. Monoamine oxidase inhibitors are widely used as psychopharmacological drugs. They change the level of nearly all neurotransmitters in synapses, with the following neurotransmitter being the exception:</p> <ul style="list-style-type: none"> A. Serotonin B. Acetylcholine C. Dopamine D. Noradrenaline E. Adrenaline 	<p>Correct answer is _____</p>
<p>65. A patient has damaged spinal cord white matter in the middle area of the posterior white columns, disrupted proprioceptive sensitivity of the lower limb joints and muscles. what fibers are affected?</p> <ul style="list-style-type: none"> A. <i>Tr. spinocerebellaris anterior</i> B. <i>Tr. spinothalamicus lateralis</i> C. <i>Fasciculus cuneatus</i> D. <i>Fasciculus gracilis</i> E. <i>Tr. spinocerebellaris posterior</i> 	<p>Correct answer is _____</p>
<p>66. After a traffic accident a 36-year-old patient has developed muscle paralysis of the extremities on the right, lost pain and thermal sensitivity on the left, and partially lost tactile sensitivity on both sides. What part of the brain is the most likely to be damaged?</p> <ul style="list-style-type: none"> A. Right-hand side of the spinal cord B. Motor cortex on the left C. Left-hand side of the spinal cord D. Anterior horn of the spinal cord E. Posterior horn of the spinal cord 	<p>Correct answer is _____</p>
<p>67. Vestibular receptors of semicircular canals of an animal have been destroyed. What reflexes will disappear as a result?</p> <ul style="list-style-type: none"> A. 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 	<p>Correct answer is _____</p>
<p>68. 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 injured?</p> <ul style="list-style-type: none"> A. Cerebellum B. Medulla oblongata C. Olfiencephalon D. Mesencephalon E. Prosencephalon 	<p>Correct answer is _____</p>

<p>69. The patient's pyramids of the medulla oblongata are damaged by tumor growth. As a result the conduction of nervous impulses will be impaired in the following pathway:</p> <p>A. <i>Tr. Corticonuclearis</i> B. <i>Tr. Corticospinalis</i> C. <i>Tr. Spinocerebellaris</i> D. <i>Tr. Dentatorubralis</i> E. <i>Tr. Corticopontinus</i></p>	
<p>70. A patient complaining of pain in the left shoulder-blade region has been diagnosed with myocardial infarction. What kind of pain does the patient have?</p> <p>A. Epicritic B. Radiating C. Phantom D. Visceral E. Protopathic</p>	
<p>71. Depression and emotional disturbances result from the lack of noradrenaline, serotonin and other biogenic amines in the brain. Their content in the synapses can be increased through administration of antidepressants that inhibit the following enzyme:</p> <p>A. D- amino acid oxidase B. Phenylalanine 4-monooxygenase C. Diamine oxidase D. L- amino acids oxidase E. Monoamine oxydase</p>	
<p>72. During the sport 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 causes of this condition?</p> <p>A. Stimulation of parasympathetic nerves B. ischemia of the CNS C. Abrupt change in the body fluid volume D. Stimulation of sympathetic nerves E. Alteration of transcapillary exchange</p>	

Humoral regulation of visceral functions

<p>56. Some diseases reveal symptoms of aldosteronism with hypertension and edema due to sodium retention in the organism. What organ of the internal secretion is affected on aldosteronism?</p> <p>A. Hypophysis B. Adrenal glands C. Pancreas D. Testicle E. Ovaries</p>	<p>Correct answer is _____</p>
<p>2. A 19-year-old female suffers from tachycardia in rest condition, weight loss, excessive sweating, exophthalmos and irritability. What hormone would you expect to find elevated in her serum?</p> <p>A. ACTH B. Mineralocorticoids C. Thyroxin D. Cortisol E. Insulin</p>	<p>Correct answer is _____</p>
<p>3. At head trauma in and around supraoptical and paraventricular nuclei of hypothalamus polyuria occurs. What results in development of the given phenomenon?</p> <p>A. ADH secretion increase B. ADH secretion decrease C. Renin secretion increase D. Sodium uretine peptide secretion decrease E. Aldosterone secretion increase</p>	<p>Correct answer is _____</p>
<p>4. A man because of 1,5 litre blood loss has suddenly reduced diuresis. The increased secretion of what hormone caused such diuresis alteration?</p> <p>A. Natriuretic B. Corticotropin C. Parathormone D. Vasopressin E. Cortisol</p>	<p>Correct answer is _____</p>
<p>5. A 26-year old woman is complaining of thirst and dryness in her mouth. The examination has revealed glucosuria and blood glucose content of 6,5 mmol/l. What condition are these symptoms the most typical for?</p> <p>A. Diabetes insipidus B. Diabetes mellitus C. Steroid diabetes D. Renal diabetes E. Alimentary glucosuria</p>	<p>Correct answer is _____</p>

<p>6. A patient complaining of weight loss (10 kg during 2 months), palpitation and exophthalmos came to the endocrinologist. For the hyperfunction of what gland (glands) are these complaints the most typical?</p> <ul style="list-style-type: none"> A. Pancreas B. Ovaries C. Adrenal glands D. Parathyroid glands E. Thyroid 	<p>Correct answer is _____</p>
<p>7. Usage of oral contraceptives with sex hormones inhibits secretion of the hypophysiae hormones. Secretion of which of the indicated hormones is inhibited while using oral contraceptives with sex hormones?</p> <ul style="list-style-type: none"> A. Thyrotropic B. Somatotropic C. Vasopressin D. Oxytocin E. Follicle-stimulating 	<p>Correct answer is _____</p>
<p>8. A 2-year-old child experienced convulsions because of lowering calcium ions concentration in the blood plasma. Functions of what structure is decreased?</p> <ul style="list-style-type: none"> A. Adrenal cortex B. Pineal cortex C. Parathyroid glands D. Thymus E. Hypophysis 	<p>Correct answer is _____</p>
<p>9. 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 symptom?</p> <ul style="list-style-type: none"> A. Medulla B. Pons cerebelli C. Mesencephalic tegmentum D. Hypothalamus E. Cerebral peduncles (cruces cerebri) 	<p>Correct answer is _____</p>
<p>10. The β cells of endocrine portion of pancreas are selectively damaged poisoning. How will it be reflected in plasma?</p> <ul style="list-style-type: none"> A. The content of globulins decreases B. The content of albumins decreases C. The content of fibrinogen decrease D. The level of sugar decrease 	<p>Correct answer is _____</p>

E. The content of sugar increases	
<p>11. Periodic renal colic attacks are observed in a woman with primer hyperparathyroidism. Ultrasonic examination revealed small stones in the kidneys. What is the most plausible reason of the stones' formation?</p> <p>A. Hypercalcemia B. Hyperphosphatemia C. Hyperuricemia D. Hyperkalemia E. Hypercholesterinemia</p>	Correct answer is _____
<p>12. Kidneys of a man under examination show increased resorption of calcium ions and decreased resorption of phosphate ions. What hormone causes this phenomenon?</p> <p>A. Hormonal form D₃ B. Thyrocalcitonin C. Parathormone D. Aldosterone E. Vasopressin</p>	Correct answer is _____
<p>13. A patient with diabetes mellitus experienced loss of consciousness and convulsions after injection of insulin, what is the result of biochemical blood analysis for concentration of the sugar?</p> <p>A. 3,3 mmol/L B. 8,0 mmol/L C. 5,5 mmol/L D. 1,5 mmol/L E. 10,0 mmol/L</p>	Correct answer is _____
<p>14. A person has reduced diuresis, hypernatremia, hypokalemia. Hypersecretion of what hormone can cause such changes?</p> <p>A. Parathormone B. Aldosterone C. Adrenalin D. Vasopressin E. Auricular sodiumuretic factor</p>	Correct answer is _____
<p>15. A teenager was irradiated with high radiation dose that resulted in serious damages of lymphoid system, lysis of many lymphocytes. Restoration of normal hemogram is possible due to the functioning of the following gland:</p> <p>A. Thyroid B. Adrenal C. Liver D. Thymus E. Pancreas</p>	Correct answer is _____

<p>16. Inhabitants of territories with cold climate have high content of an adaptive thermoregulatory hormone. What hormone is meant?</p> <ul style="list-style-type: none"> A. Insulin B. Glucagon C. Thyroxin D. Cortisol E. Somatotropin 	<p>Correct answer is _____</p>
<p>17. 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:</p> <ul style="list-style-type: none"> A. Aldosterone increase B. Reduction of atrial natriuretic factor C. Vasopressin increase D. Aldosterone reduction E. Vasopressin reduction 	<p>Correct answer is _____</p>
<p>18. 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?</p> <ul style="list-style-type: none"> A. Of testosterone B. Of somatotropin C. Of progesterone D. Of estrogen E. Of cortisol 	<p>Correct answer is _____</p>
<p>19. 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:</p> <ul style="list-style-type: none"> A. Angiotensin B. Aldosterone C. Renin D. Vasopressin E. Natriuretic hormone 	<p>Correct answer is _____</p>
<p>20. 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?</p> <ul style="list-style-type: none"> A. Substernal gland B. Thyroid gland C. Adrenal glands D. Parathyroid glands E. Seminal glands 	<p>Correct answer is _____</p>

<p>21. 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:</p> <ul style="list-style-type: none"> A. Vasopressin B. Cortisol C. Thyroxin D. Aldosterone E. Insulin 	<p>Correct answer is _____</p>
<p>22. A 35 year old man consulted a dentist about reduced density of dental tissue, high fragility of teeth during eating solid food. This patient suffers the most probably from the deficiency of the following mineral element:</p> <ul style="list-style-type: none"> A. Potassium B. Iron Sodium C. Magnesium D. Calcium 	<p>Correct answer is _____</p>
<p>23. 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?</p> <ul style="list-style-type: none"> A. Hypersecretion of insulin B. Hypersecretion of the somatotropic hormone C. Hyposecretion of the somatotropic hormone D. Hyposecretion of thyroxin E. Hyposecretion of insulin 	<p>Correct answer is _____</p>
<p>24. 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:</p> <ul style="list-style-type: none"> A. Somatotropin B. Thyrocalcitonin C. Prolactin D. Vasopressin E. Glucagon 	<p>Correct answer is _____</p>
<p>25. A patient has hypocalcemia. What hormone deficiency may be its cause?</p> <ul style="list-style-type: none"> A. Thyrocalcitonin B. Corticotropin C. Corticoliberin D. Parathormone E. Aldosterone 	<p>Correct answer is _____</p>
<p>26. Humoral form of certain vitamin induces</p>	<p>Correct answer is _____</p>

<p>genome level synthesis of Ca-binding proteins and enterocytes thus regulating the intestinal absorption of Ca²⁺ ions required for dental tissue development. What vitamin is it?</p> <p>A. K B. E C. B₁ D. A E. D₃</p>	
<p>27. A 36-year-old patient with diabetes mellitus had seizures with loss of consciousness after an insulin injection. What was the result of blood glucose test?</p> <p>A. 10 mmol/l B. 8,0 mmol/l C. 5,5 mmol/l D. 3,3 mmol/l E. 2,5 mmol/l</p>	<p>Correct answer is _____</p>
<p>28. A 43-year-old female complains of weight loss, hyperhidrosis, low-grade fever, increased irritability. She has been found to have hyperfunction of sympathetic-adrenal system and the basal metabolism. These disorders can be caused by hypersecretion of the following hormone:</p> <p>A. Corticotropin B. Somatotropin C. Aldosterone D. Insuline E. Thyroxine</p>	<p>Correct answer is _____</p>
<p>29. A 49 year-old patient was found to have a disproportionate enlargement of hands, feet, nose, ears, superciliary arches and cheek bones. Blood test revealed hyperglycemia, impaired glucose tolerance. What is the most likely cause of this pathology development?</p> <p>A. Vasopressin hyposecretion B. Insulin hyposecretion C. Hypersecretion of growth hormone D. Glucocorticoids hypersecretion E. Posterior pituitary hormone hypersecretion</p>	<p>Correct answer is _____</p>
<p>30. A severe injury in 36-year-old patient resulted in significant blood loss which was accompanied by blood pressure drop. What hormones provide rapid recovery of blood pressure after blood loss?</p> <p>A. Oxytocin B. Aldosterone C. Sex hormones D. Cortisol E. Adrenaline, vasopressin</p>	<p>Correct answer is _____</p>

<p>31. A 12 year-old child is of short stature, has disproportionate body structure and mental retardation. These characteristics might be caused by the hyposecretion of the following hormone:</p> <ul style="list-style-type: none"> A. Glucagon B. Thyroxine C. Somatotropin D. Cortisol E. Insulin 	<p>Correct answer is _____</p>
<p>32. Following thyroid surgery, a 47-year-old female patient had fibrillary twitching of muscles in the arms, legs and face. These disorders can be treated by the introduction of the following hormone:</p> <ul style="list-style-type: none"> A. Thyroid-stimulating hormone B. Triiodothyronine C. Thyroxine D. Parathyroid hormone E. Thyrotropin 	<p>Correct answer is _____</p>
<p>33. A patient with signs of osteoporosis and urolithiasis has been admitted to the endocrinology department. Blood test revealed hypercalcemia and hypophosphatemia. These changes are associated with abnormal synthesis of the following hormone:</p> <ul style="list-style-type: none"> A. Calcitonin B. Aldosterone C. Parathyroid hormone D. Cortisol E. Calcitriol 	<p>Correct answer is _____</p>
<p>34. A 41-year-old male patient has a history of recurrent attacks of heartbeats (paroxysms), profuse sweating, headaches. Examination revealed hypertension, hyperglycemia, increased basal metabolic rate, and tachycardia. These clinical presentations are typical for the following adrenal pathology:</p> <ul style="list-style-type: none"> A. Hyperfunction of the adrenal cortex B. Primary aldosteronism C. Hypofunction of the adrenal cortex D. Hypofunction of the medulla E. Hyperfunction of the medulla 	<p>Correct answer is _____</p>
<p>35. 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:</p> <ul style="list-style-type: none"> A. Adrenaline B. Aldosterone C. Oxytocin D. Glucagon E. Testosterone 	<p>Correct answer is _____</p>

<p>36. 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 at hormonal drug to stimulate the labor. Name this drug:</p> <ul style="list-style-type: none"> A. Estrone B. Hydrocortisone C. Testosterone D. Oxytocin E. ACTH 	<p>Correct answer is _____</p>
<p>37. A 30-year-old female exhibits signs of virilism (growth of body hair, balding temples, menstrual disorders). This condition can be caused by the overproduction of the following hormone:</p> <ul style="list-style-type: none"> A. Oxytocin B. Prolactin C. Testosterone D. Oestriol E. Relaxin 	<p>Correct answer is _____</p>
<p>38. 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:</p> <ul style="list-style-type: none"> A. Aldosterone B. Adrenaline, vasopressin C. Cortisol D. Sex hormones E. Oxytocin 	<p>Correct answer is _____</p>
<p>39. A 44 year old woman complains of general weakness, heart pain, significant increase of body weight. Objectively: moon face, hirsutism, AP is 165/100 mm Hg, height – 164 cm, weight – 103 kg; the fat is mostly accumulated on her neck, thoracic girdle, belly. What is the main pathogenetic mechanism of obesity?</p> <ul style="list-style-type: none"> A. Increased production of glucocorticoids B. Reduced production of thyroid hormones C. Increased insulin production D. Reduced glucagon production E. Increased mineralocorticoid production 	<p>Correct answer is _____</p>
<p>40. A patient has a decreased vasopressin synthesis that causes polyuria and as a result of it evident organism dehydration. What is the mechanism of polyuria development?</p> <ul style="list-style-type: none"> A. Reduced tubular reabsorption of Na ions B. Reduced tubular reabsorption of protein C. Reduced glucose reabsorption D. Reduced tubular reabsorption of water E. Acceleration of glomerular filtration 	<p>Correct answer is _____</p>

<p>41. A patient suffering from pheochromocytoma complains of thirst, dry mouth, hunger. Blood test for sugar revealed hyperglycemia. What type of hyperglycemia is it?</p> <ul style="list-style-type: none"> A. Hypercorticoid B. Adrenal C. Alimentary D. Somatotropic E. Hypoinsulinemic 	<p>Correct answer is _____</p>
<p>42. Roentgenological examination of skull base bones revealed enlargement of sellar cavity, thinning of anterior clinoid processes, destruction of different parts of sella turcica. Such bone destruction might be caused by a tumour of the following endocrinous gland:</p> <ul style="list-style-type: none"> A. Epiphysis B. Thymus gland C. Adrenal glands D. Hypophysis E. Thyroid gland 	<p>Correct answer is _____</p>
<p>43. 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?</p> <ul style="list-style-type: none"> A. Reduced production of thyroxin B. Reduced production of parathormone C. Increased production of thyroxin D. Increased production of calcitonin E. Increased production of thyroliberin 	<p>Correct answer is _____</p>
<p>44. Parodontitis is treated with calcium preparations and a hormone that stimulates tooth mineralization and inhibits tissue resorption. What hormone is it?</p> <ul style="list-style-type: none"> A. Calcitonin B. Aldosterone C. Parathormone D. Adrenalin E. Thyroxine 	<p>Correct answer is _____</p>
<p>45. 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:</p> <ul style="list-style-type: none"> A. Estrogen B. Progesterone C. Lutropin D. Follicle stimulating hormone 	<p>Correct answer is _____</p>

E. Follistatine	
<p>46. 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:</p> <ul style="list-style-type: none"> A. Adrenal cortex B. Adrenal medulla C. Adenohypophysis D. Neurohypophysis E. Islets of Langerhans (pancreatic islets) 	Correct answer is _____
<p>47. 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:</p> <ul style="list-style-type: none"> A. Triiodothyronine B. Thyrocalcitonin C. Parathormone D. Thyroxin E. Somatotropic hormone 	Correct answer is _____
<p>48. Clinical examination of a female patient revealed reduction of basal metabolism by 40%, gain in body mass, drop of body temperature, face puffiness, sexual disfunctions, inertness and apathy, lowered intelligence. These symptoms are caused by dysfunction of the following endocrine gland:</p> <ul style="list-style-type: none"> A. Hypophysis hyperfunction B. Epiphysis hypofunction C. Hyperfunction of thyroid gland D. Hypofunction of parathyroid glands E. Hypofunction of thyroid gland 	Correct answer is _____
<p>49. Analysis of urine from a 24-year-old man revealed the following changes: daily diuresis – 10 l, relative density – 1,001, qualitative alterations are absent. A patient complains of excessive thirst, frequent urination. What is the most likely cause of this disease?</p> <ul style="list-style-type: none"> A. Vasopressin hypersecretion B. Vasopressin hyposecretion C. Glucocorticoid hypersecretion D. Relative insulin insufficiency E. Aldosterone hypersecretion 	Correct answer is _____
<p>50. A child presents with symptoms of psychic and physical retardation (cretinism). It is usually associated with the following hormone deficiency:</p> <ul style="list-style-type: none"> A. Somatotropic B. Calcitonin C. Insulin D. Thyroxin E. Testosterone 	Correct answer is _____
<p>51. Indirect calorimetry allowed to establish that a 30-year-old male patient had a 30% decrease in basal metabolic rate. This might be caused by the reduced concentration of the following hormones in blood plasma:</p>	Correct answer is _____

<ul style="list-style-type: none"> A. Glucocorticoids B. Catecholamines C. Thyrocalcitonin, parathormone D. Somatoliberin, somatostatin E. Triiodothyronine, tetraiodothyronine 	
<p>52. A 20-year-old patient complains of morbid thirst and hyperdiuresis (up to 10 l daily). Glucose concentration in blood is normal but it is absent in urine. The patient has been diagnosed with diabetes insipidus. What hormonal drug is the most appropriate for management of this disorder?</p> <ul style="list-style-type: none"> A. Thyroxin B. Oxytocin C. Vasopressin D. Cortisol E. Insulin 	<p>Correct answer is _____</p>
<p>53. A 5-month-old boy was hospitalized for tonic convulsions. He has a lifetime 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 millimole/l. These changes are associated with:</p> <ul style="list-style-type: none"> A. Hypothyroidism B. Hypoaldosteronism C. Hypoparathyroidism D. Hyperparathyroidism E. Hyperaldosteronism 	<p>Correct answer is _____</p>
<p>54. After a severe stress a patient was found to have eosinopenia. A decrease in the eosinophils number can be explained by the changed concentration of the following hormones:</p> <ul style="list-style-type: none"> A. Adrenaline B. Glucocorticoids C. Insulin D. Mineralocorticoids E. Vasopressin 	<p>Correct answer is _____</p>
<p>55. A 6-year-old child suffers from delayed growth, disrupted ossification processes, decalcification of the teeth. What can be the cause?</p> <ul style="list-style-type: none"> A. Decreased glucagon production B. Hyperthyroidism C. Insulin deficiency D. Vitamin C deficiency E. Vitamin D deficiency 	<p>Correct answer is _____</p>
<p>56. 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:</p> <ul style="list-style-type: none"> A. Aldosterone B. Thyroxin C. Adrenalin D. Insulin E. Glucagon 	<p>Correct answer is _____</p>

<p>57. Corticosteroid hormones regulate the adaptation processes of the body as the whole to environment changes and ensure the maintenance of the internal homeostasis. What hormone activates the hypothalamo-pituitary-adrenal axis?</p> <p>A. Somatoliberin B. Corticostatin C. Thyroliberin D. Somatostatin E. Cortocolliberin</p>	
<p>58. On the examination the patient presents with hirsutism, moon-shaped face, stretch marks on the abdomen. BP is 190/100 mm Hg, blood glucose is 17,6 mmole/l. What pathology is such clinical presentation characteristic of?</p> <p>A. Adrenocortical hyperfunction B. Hyperfunction of insular apparatus C. Hypothyroidism D. Hyperthyroidism E. Gonadal hypofunction</p>	
<p>59. During removal of the hyperplastic thyroid gland of 47-year-old woman, the parathyroid gland was damaged. One month after the surgery the patient developed signs of hypoparathyroidism: frequent convulsions, hyperreflexia, laryngospasm. What is the most likely cause of patient's condition?</p> <p>A. Hyperchlorhydria B. Hyponatremia C. Hypophosphatemia D. Hyperkalemia E. Hypocalcemia</p>	
<p>60. On examination the patient is found to have low production of adrenocorticotropic hormone. How would this affect production of the other hormones?</p> <p>A. Decrease insulin synthesis B. Decrease adrenocorticotropic hormone synthesis C. Increase sex hormone synthesis D. Increase thyroid hormones synthesis E. Decrease hormones synthesis in the adrenal medulla</p>	
<p>61. After severe stress the patient presents with eosinopenia in the blood test. In this case the decrease number of eosinophils can explain changes in the level of the following hormones:</p> <p>A. Vasopressin B. Insulin C. Glucocorticoids D. Mineralocorticoids E. Adrenalin</p>	

Physiology of sensory systems and highest nervous activity

<p>1. A student is thoroughly summarizing a lecture. When his group mates begin talking the quality of the summarizing worsens greatly. What type of inhibition in the cerebral cortex is the cause of it?</p> <ul style="list-style-type: none">A. DifferentialB. DelayedC. ExternalD. DyingE. Protective	Correct answer is _____
<p>2. A 60-year-old patient was diagnosed with hypothalamic lateral nuclei stroke. What changes in patient's behavior may be expected?</p> <ul style="list-style-type: none">A. ThirstB. DepressionC. Unsatisfied hungerD. The rejection of foodE. Aggressive behavior	Correct answer is _____
<p>3. Middle part of cochlear of internal ear was destroyed in animal while experiment. It will cause abnormalities of the sound perception of the following frequencies:</p> <ul style="list-style-type: none">A. HighB. LowC. MiddleD. High and lowE. No abnormalities	Correct answer is _____
<p>4. In the experiment on the animal the part of the cerebral cortex hemispheres was removed. It caused elimination of previously formed conditioned reflex to the light irritation. What part of the cortex was removed?</p> <ul style="list-style-type: none">A. Precentral convolutionB. Postcentral convolutionC. Temporal lobeD. Occipital cortexE. Limbic cortex	Correct answer is _____
<p>5. While shifting the gaze to the closely situated object the refracting power of eye's optical mediums will increase by 10 diopters. It results from changing of such eye structure:</p> <ul style="list-style-type: none">A. Vitreous bodyB. Liquid of the anterior chamber of eyeC. CorneaD. LensE. Muscle that dilates pupil	Correct answer is _____

<p>6. A patient has a hemorrhage into the posterior central gyrus. What type of sensitivity on the opposite side will be disturbed?</p> <ul style="list-style-type: none"> A. Visual B. Auditory and visual C. Auditory D. Olfactory E. Skin and proprioceptive 	<p>Correct answer is _____</p>
<p>7. A man who went for a ride on a roundabout had amplification of heart rate, sweating and nausea. What receptors stimulation is it primarily connected with?</p> <ul style="list-style-type: none"> A. Proprioceptors B. Visual C. Auditory D. Tactors E. Vestibular 	<p>Correct answer is _____</p>
<p>8. A patient complains of dizziness and hearing loss. What nerve is damaged?</p> <ul style="list-style-type: none"> A. Trochlear B. Vagus C. Vestibulocochlear D. Sublingual E. Trigeminus 	<p>Correct answer is _____</p>
<p>9. 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?</p> <ul style="list-style-type: none"> A. Impaired circulation B. Receptor adaptation C. Development of the fibrous tissue D. Abnormality of the epidermis structure E. Abnormality of the receptor structure 	<p>Correct answer is _____</p>
<p>10. According to audiometry data a patient has a disturbed perception of medium-frequency sounds. It might have been caused by a damage of:</p> <ul style="list-style-type: none"> A. Cochlear nuclei B. Lateral geniculate bodies C. Spiral ganglion D. Middle part of helix E. Quadritubercular structure 	<p>Correct answer is _____</p>
<p>11. 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)?</p> <ul style="list-style-type: none"> A. Sanguine B. Phlegmatic C. Choleric D. Melancholic E. – 	<p>Correct answer is _____</p>

<p>12. During an experiment the myotatic reflex has been studied in frogs. After extension in a skeletal muscle its reflexory contraction was absent. The reason for it might be a dysfunction of the following receptors:</p> <ul style="list-style-type: none"> A. Articular B. Tactile C. Golgi tendon organs D. Muscle spindles E. Nociceptors 	<p>Correct answer is _____</p>
<p>13. Surface with an intact toad on it was inclined to the right. Tone of extensor muscles became reflexory higher due to the activation of the following receptors:</p> <ul style="list-style-type: none"> A. Mechanoreceptors of foot skin B. Photoreceptors of retina C. Proprioceptors D. Vestibuloreceptors of utricle and saccule E. Vestibuloreceptors of semicircular ducts 	<p>Correct answer is _____</p>
<p>14. In course of an experiment a toad's right labyrinth was destroyed. It will cause amyotonia of the following muscles:</p> <ul style="list-style-type: none"> A. Left flexors B. Left extensors C. Right extensors D. Right flexors E. Right and left extensors 	<p>Correct answer is _____</p>
<p>15. In course of an experiment thalamocortical tracts of an animal were cut. What type of sensory perception remained intact?</p> <ul style="list-style-type: none"> A. Auditory B. Exteroreceptive C. Visual D. Olfactory E. Nociceptive 	<p>Correct answer is _____</p>
<p>16. An experimentator wants a dog to develop conditioned salivary reflex. What conditioned stimulus will be appropriate to use?</p> <ul style="list-style-type: none"> A. Electric current B. Moderately loud sound C. Zwieback D. Meat E. Very loud sound 	<p>Correct answer is _____</p>
<p>17. During a neuro-surgical operation the occipital areas of cerebral cortex are stimulated. What sensations will the patient have?</p> <ul style="list-style-type: none"> A. Tactile B. Auditory C. Olfactory D. Gustatory E. Visual 	<p>Correct answer is _____</p>

<p>18. A patient has been prescribed the salt-free diet. What changes to the salt taste sensitivity threshold should be expected?</p> <ul style="list-style-type: none"> A. Decrease B. No changes C. Little change D. Increase E. Increase followed by a decrease 	<p>Correct answer is _____</p>
<p>19. A patient consulted a doctor about loss of taste at the root of tongue. The doctor established that this was due to nerve damage. What nerve was damaged?</p> <ul style="list-style-type: none"> A. Vagus B. Facial C. Superlaryngeal D. Trigeminal E. Glossopharyngeal 	<p>Correct answer is _____</p>
<p>20. Before an exam a student complained of acute dental pain which grew less during the exam. What inhibition caused the pain abatement?</p> <ul style="list-style-type: none"> A. Protective B. Delayed C. External D. Declining E. Differentiating 	<p>Correct answer is _____</p>
<p>21. A 60 year old patient has impaired perception of high-frequency sounds. These changes were caused by damage of the following auditory analyzer structures:</p> <ul style="list-style-type: none"> A. Main cochlea membrane near the helicotrema B. Main cochlea membrane near the oval window C. Eustachian tube D. Middle ear muscles E. Tympanic membrane 	<p>Correct answer is _____</p>
<p>22. 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 area:</p> <ul style="list-style-type: none"> A. Left and right halves of the left eye retina B. Left and right halves of the right eye retina C. Left and right halves of both eyes retina D. Left half of both eyes retina E. Right half of both eyes retina 	<p>Correct answer is _____</p>

<p>23. While examining the oral cavity a stomatologist revealed inflammation of papillae on the border of the median and posterior third of the back of tongue. What papillae are inflamed?</p> <p>A. <i>Papillae fungiformes</i> B. <i>Papillae foliatae</i> C. <i>Papillae filiformes</i> D. <i>Papillae vallatae</i> E. <i>Papillae conicae</i></p>	<p>Correct answer is _____</p>
<p>24. 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:</p> <p>A. Median part of the Corti's organ B. Corti's organ - closer to the oval foramen C. Corti's organ - closer to helicotrema D. Muscles of the middle ear E. Eardrum</p>	<p>Correct answer is _____</p>
<p>25. After a craniocerebral injury a patient is unable to recognize objects by touch. What part of brain has been damaged?</p> <p>A. Precentral gyrus B. Postcentral gyrus C. Temporal lobe D. Occipital lobe E. Cerebellum</p>	<p>Correct answer is _____</p>
<p>26. As a result of craniocerebral injury, a patient has decreased skin sensitivity. What area of cerebral cortex is likely to be damaged?</p> <p>A. Cingulate gyrus B. Anterior central gyrus C. Occipital region D. Posterior central gyrus E. Frontal cortex</p>	<p>Correct answer is _____</p>
<p>27. The receptors under study provide transfer of information to the cortex without thalamic involvement. Specify these receptors:</p> <p>A. Tactile B. Visual C. Auditory D. Gustatory E. Olfactory</p>	<p>Correct answer is _____</p>
<p>28. During the air and bone conduction tests it was revealed that the left ear the tones were louder by bone conduction. This might be associated with the disease of:</p> <p>A. Left inner ear B. Left middle ear C. Right inner ear D. Right middle ear E. Right external ear</p>	<p>Correct answer is _____</p>

<p>29. A sportsmen spontaneously held breath for 40 seconds, which resulted in an increase of heart rate and systemic arterial pressure. Changes of this indicators are due to activation of the following regulatory mechanisms:</p> <ul style="list-style-type: none"> A. Conditioned sympathetic reflex B. Conditioned parasympathetic reflex C. Unconditioned sympathetic reflex D. Unconditioned parasympathetic reflex E. - 	<p>Correct answer is _____</p>
<p>30. 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?</p> <ul style="list-style-type: none"> A. Differential B. Protective C. Extinctive D. External E. Persistent 	<p>Correct answer is _____</p>
<p>31. Examination of a patient with an interbrain injury revealed the hearing impairment. What structures must be damaged?</p> <ul style="list-style-type: none"> A. Lateral geniculate bodies of thalamus B. Intralaminar nuclei of hypothalamus C. Medial nuclei of hypothalamus D. Medial geniculate bodies of thalamus E. Frontal nuclei of hypothalamus 	<p>Correct answer is _____</p>
<p>32. A 68-year-old female patient with the history of glaucoma has increased intraocular pressure with normal secretion of aqueous humor by ciliary bodies. The inadequate outflow of fluid from the anterior chamber is associated with the damage to the following structure of the eyeball wall:</p> <ul style="list-style-type: none"> A. Ciliary muscle B. Ciliary body C. Venous sinus D. Choroid E. Posterior corneal epithelium 	<p>Correct answer is _____</p>
<p>33. A patient with inflammation of tongue mucosa (glossitis) complains to taste sensitivity disorder in the two anterior third of his tongue. This is caused by the damage of the following nerve:</p> <ul style="list-style-type: none"> A. Tympanic B. Glossopharyngeal C. Lesser petrosal D. Lingual E. Tympanic chord 	<p>Correct answer is _____</p>

<p>34. A 42-year-old patient has an inflammation of the inner ear. After the examination, the doctor revealed the affection of the first neuron bodies of the auditory analyzer. Where are they localized?</p> <p>A. <i>G. geniculi</i> B. <i>G. ciliare</i> C. <i>G. spirale</i> D. <i>G. trigeminale</i> E. <i>G. vestibulare</i></p>	<p>Correct answer is _____</p>
<p>35. A 46 year-old patient consulted an oculist about drooping of upper eye-field. On examination he was diagnosed with a brain tumor. The pathological process must have affected the nuclei of the following pair of cranial nerves:</p> <p>A. IV B. VII C. III D. II E. VI</p>	<p>Correct answer is _____</p>
<p>36. A 23 year-old patient consulted an oculist about vision impairment. Visual acuity was corrected by means of lenticular lenses. Specify a type of dysfunction of the visual analyzer in this patient:</p> <p>A. Myopia B. Hyperopia C. Astigmatism D. Night-blindness E. Daltonism</p>	<p>Correct answer is _____</p>
<p>37. A patient under examination is in a stage of rapid eye movement sleep. This is confirmed by the following waves registered by EEG:</p> <p>A. Alpha spindles B. Alpha waves C. Delta waves D. Beta waves E. Theta waves</p>	<p>Correct answer is _____</p>
<p>38. Examination of a patient with a brain cortex injury revealed that he had lost the tactile sensitivity. What part of the cerebral cortex is damaged?</p> <p>A. Anterior central gyrus B. Posterior central gyrus C. Occipital lobe D. Frontal lobe E. Parietal lobe</p>	<p>Correct answer is _____</p>

<p>39. 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?</p> <ul style="list-style-type: none"> A. Contraction of <i>m. auricularis anterior</i> B. Contraction of <i>m. tensor tympani</i> C. Relaxation of <i>m. stapedius</i> D. Relaxation of <i>m. auricularis anterior</i> E. Relaxation of <i>m. tensor tympani</i> 	<p>Correct answer is _____</p>
<p>40. When taking exams students often have dry mouth. The mechanism that causes this state results from the following reflexes:</p> <ul style="list-style-type: none"> A. Unconditioned peripheral B. Unconditioned parasympathetic C. Unconditioned sympathetic D. Conditioned parasympathetic E. Conditioned sympathetic 	<p>Correct answer is _____</p>
<p>41. A laboratory experiment on a dog was used to study central part of auditory system. One of the mesencephalon structures was destroyed. The dog has lost the orientating response to auditory signals. What structure was destroyed?</p> <ul style="list-style-type: none"> A. Reticular formation nuclei B. Red nucleus C. Substantia nigra D. Superior colliculi of corpora quadrigemina E. Inferior colliculi of corpora quadrigemina 	<p>Correct answer is _____</p>
<p>42. Workers of a conveyor workshop received recommendations for the effective organization of working time and higher working efficiency. What peculiarity of work in this workshop causes the greatest stress for the workers?</p> <ul style="list-style-type: none"> A. Increased intellectual component B. Increased responsibility C. Monotony of work D. State of "operating rest" E. Social inefficiency of labor 	<p>Correct answer is _____</p>
<p>43. A histological specimen of the eyeball shows a biconvex structure connected to the ciliary body by the fibers of the Zinn's zonule and covered with a transparent capsule. Name this structure:</p> <ul style="list-style-type: none"> A. Crystalline lens B. Vitreous body C. Ciliary body D. Cornea E. Sclera 	<p>Correct answer is _____</p>

<p>44. Pupil dilation occurs when a person steps from a light room into a dark one. What reflex causes such a reaction?</p> <p>A. Sympathetic unconditioned reflex B. Sympathetic conditioned reflex C. Metasympathetic reflex D. Parasympathetic unconditioned reflex E. Parasympathetic conditioned reflex</p>	<p>Correct answer is _____</p>
<p>45. A patient demonstrates functional loss of nasal halves of the retinas. What area of visual pathways is affected?</p> <p>A. Optic chiasm B. Left optic tract C. Right optic tract D. Left optic nerve E. Right optic nerve</p>	<p>Correct answer is _____</p>
<p>46. 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:</p> <p>A. 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</p>	<p>Correct answer is _____</p>
<p>47. A person with vitamin A deficiency develops twilight vision disturbance. Name the cells that fulfill this photoreceptors function.</p> <p>A. Bipolar neurons B. Rod cells C. Cone cells D. Ganglionic nerve cells E. Horizontal cells of retina</p>	
<p>48. A students whose educational achievements throughout the semester were poor, feels emotionally tense during the final test. What is the primary cause that induced leading mechanism of emotional tension in this case?</p> <p>A. Lack of energy B. Lack of energy and information C. Lack of information D. Tight time and lack of energy E. Tight time</p>	

PHYSIOLOGY OF VISCERAL SYSTEMS

Physiology of blood system

<p>1. On blood grouping on the system ABO, standard serum of the I and II groups caused erythrocytes agglutination of the examined blood and serum group of the III didn't. What agglutinogens are in these erythrocytes?</p> <ul style="list-style-type: none">A. A and BB. AC. BD. D and CE. C	Correct answer is _____
<p>2. During total (with water) alimentary starvation the generalized edema has developed. Which of the pathogenic factors is dominant in this case?</p> <ul style="list-style-type: none">A. Reduced osmotic pressure of blood plasmaB. Increased osmotic pressure of interstitial fluidC. Reduced oncotic pressure of blood plasmaD. Increased oncotic pressure of interstitial fluidE. Reduced hydrostatic pressure of interstitial fluid	Correct answer is _____
<p>3. The concentration of albumins in human blood sample is lower than normal. This leads to edema of tissues. What blood function is damaged?</p> <ul style="list-style-type: none">A. Maintaining the -blood sedimentation systemB. Maintaining the oncotic pressure of bloodC. Maintaining the body temperatureD. All answers are correctE. Maintaining the pH level	Correct answer is _____
<p>4. A 2-year-old child has got intestinal dysbacteriosis, which results in hemorrhagic syndrome. What is the most likely cause of hemorrhage of the child?</p> <ul style="list-style-type: none">A. Activation of tissue thromboplastinB. Fibrinogen deficiencyC. Vitamin K insufficiencyD. HypocalcemiaE. PP hypovitaminosis	Correct answer is _____
<p>5. A patient with tissue trauma was taken a blood sample for the determination of blood clotting parameters. Specify the right sequence of extrinsic pathway activation.</p> <ul style="list-style-type: none">A. III-IV-XaB. IV-VIII: TF-XaC. IV-VIIa-XaD. III-VIII: TF-XaE. III-VIIa-Xa	Correct answer is _____

<p>6. If strong oxidizers get into the bloodstream, a met-hemoglobin is formed. It is a compound, where iron (II) becomes iron (III). What has to be done to save the patient?</p> <p>A. He has to be given pure oxygen B. Patient has to be exposed to the fresh air C. Respiratory centers have to be stimulated D. Interchangeable hemotransfusion has to be done E. He has to be calmed down and put to bed</p>	<p>Correct answer is _____</p>
<p>7. Blood sampling for bulk analysis is recommended to be performed on an empty stomach and in the morning. What changes in blood composition can occur if to perform blood sampling after food intake?</p> <p>A. Reduced contents of erythrocytes B. Increased contents of erythrocytes C. Reduced contents of thrombocytes D. Increased plasma proteins E. Increased contents of leukocytes</p>	<p>Correct answer is _____</p>
<p>8. A 32-year-old patient was admitted to the hospital with gross blood loss due to auto accident trauma. Ps –110 Bpm, RR - 22 pm, BP- 100/60 mm Hg. What changes in the blood will occur in an hour after the blood loss?</p> <p>A. Erythropenia B. Leukopenia C. Hypovolemia D. Hypoproteinemia E. Hypochromia of erythrocytes</p>	<p>Correct answer is _____</p>
<p>9. There is an inhibited coagulation in the patients with bile ducts obstruction, bleeding due to the low level of absorption of a vitamin. What vitamin is in deficiency?</p> <p>A. Carotene B. E C. K D. A E. D</p>	<p>Correct answer is _____</p>
<p>10. A 38-year-old woman was admitted to the admission-diagnostic department with uterine bleeding. What are the most likely changes of blood?</p> <p>A. Leukopenia B. Leucocytosis C. Increase of haematocrite rate D. Reduction of haematocrite rate E. Polycythemia</p>	<p>Correct answer is _____</p>

<p>11. 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:</p> <ul style="list-style-type: none"> A. Natriuretic B. Aldosteron C. Vasopressin D. Adrenocorticotropin E. Cortisol 	<p>Correct answer is _____</p>
<p>12. Long-term starvation cure of a patient resulted in diminished ratio of albumins and globulins in plasma. What of the following will be result of these changes?</p> <ul style="list-style-type: none"> A. Decrease of hematocrit B. Increase of hematocrit C. Decrease of ESR D. Hypercoagulation E. Increase of ESR 	<p>Correct answer is _____</p>
<p>13. A woman with III (B), Rh– blood group born a child with II (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?</p> <ul style="list-style-type: none"> A. I (0), Rh + B. II (A), Rh+ C. III (B), Rh+ D. I (0), Rh- E. II (A), Rh- 	<p>Correct answer is _____</p>
<p>14. A 16 years old boy after an illness has diminished function of protein synthesis in liver as a result of vitamin K deficiency. It will cause disturbance of:</p> <ul style="list-style-type: none"> A. Anticoagulant generation B. Erythropoietin secretion C. Erythrocyte sedimentation rate D. Blood coagulation E. Osmotic blood pressure 	<p>Correct answer is _____</p>
<p>15. A pregnant woman had her blood group identified. Reaction of erythrocyte agglutination with standard serums of 0αβ (I), Ba (III) groups didn't proceed with standard serum of Aβ (II) group. The blood group under examination is:</p> <ul style="list-style-type: none"> A. 0αβ(I) B. Aβ (II) C. Ba (III) D. AB (IV) E. – 	<p>Correct answer is _____</p>

<p>16. Punctata hemorrhage was found out in the patient after application of a tourniquet. With disfunction of what blood cells is it connected?</p> <ul style="list-style-type: none"> A. Neutrophiles B. Eosinophiles C. Monocytes D. Lymphocytes E. Platelets 	<p>Correct answer is _____</p>
<p>17. Examination of a 43 y.o. anephric patient revealed anemia symptoms. What is the cause of these symptoms?</p> <ul style="list-style-type: none"> A. Iron deficit B. Vitamin B₁₂ deficit C. Folic acid deficit D. Reduced synthesis of erythropoietins E. Enhanced destruction of erythrocytes 	<p>Correct answer is _____</p>
<p>18. Packed cell volume of a man was 40% before the trauma. What packed cell volume will be observed 24 hours after blood loss of 750 ml?</p> <ul style="list-style-type: none"> A. 55% B. 50% C. 45% D. 40% E. 30% 	<p>Correct answer is _____</p>
<p>19. 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 0$\alpha$$\beta$(I), A$\beta$(II), B$\alpha$(III) groups. The blood under examination is of the following group:</p> <ul style="list-style-type: none"> A. 0$\alpha$$\beta$(I) B. A$\beta$(II) C. B$\alpha$(III) D. AB (IV) E. – 	<p>Correct answer is _____</p>
<p>20. 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 exchange?</p> <ul style="list-style-type: none"> A. Both filtration and reabsorption will be increase B. Both filtration and reabsorption will be decreased C. Filtration will be decreased, reabsorption - increased D. Filtration will be increased, reabsorption - decreased E. Exchange will stay unchanged 	<p>Correct answer is _____</p>

<p>21. 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:</p> <ul style="list-style-type: none"> A. Increased number of erythrocytes B. Increased protein concentration in plasm C. Increased circulating blood volume D. Increased dieresis E. Water loss with sweat 	<p>Correct answer is _____</p>
<p>22. Examination of a pregnant woman revealed twice as much concentration of fibrinogen in blood plasma. What ESR can this woman have?</p> <ul style="list-style-type: none"> A. 0-5 mm/h B. 2-12 mm/h C. 5-10 mm/h D. 10-15 mm/h E. 40-50 mm/h 	<p>Correct answer is _____</p>
<p>23. 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:</p> <ul style="list-style-type: none"> A. From the cells to the intercellular fluid B. From the capillaries to the intercellular fluid C. From the intercellular fluid to the capillaries D. From the intercellular fluid to the cells E. No changes of water movement will be observed 	<p>Correct answer is _____</p>
<p>24. A clinic observes a 49 year old patient with significant prolongation of coagulation time, gastrointestinal hemorrhages, subcutaneous hematomas. These symptoms might be explained by the deficiency of the following vitamin:</p> <ul style="list-style-type: none"> A. B₁ B. B₆ C. H D. K E. E 	<p>Correct answer is _____</p>
<p>25. It was established that agglutination of the recipient's blood erythrocytes had been caused by the standard sera from the I and II groups. Serum from the III group as well as anti-Rh serum hadn't provoke any agglutination. Which blood group and rhesus is allowed to be transfused this recipient?</p> <ul style="list-style-type: none"> A. Aβ (II) Rh- B. Bα (III) Rh- C. AB (IV), Rh- D. 0$\alpha\beta$ (I) Rh+ E. AB (IV), Rh+ 	<p>Correct answer is _____</p>

<p>26. 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:</p> <ul style="list-style-type: none"> A. Increased permeability of renal filter B. Fall of oncotic pressure of blood plasma C. Rise of systemic arterial pressure D. Growth of filtration coefficient E. Increase of renal plasma flow 	<p>Correct answer is _____</p>
<p>27. A man permanently lives high in the mountains. What changes of blood characteristics can be found in his organism?</p> <ul style="list-style-type: none"> A. Decrease of hemoglobin content B. Decrease of reticulocytes number C. Decrease of colour index of blood D. Erythroblasts in blood E. Increase of erythrocytes number 	<p>Correct answer is _____</p>
<p>28. A man lost consciousness in a car with running engine where he had been waiting for a friend for a long time. What hemoglobin compound can be found in the blood of the patient?</p> <ul style="list-style-type: none"> A. Carbhemoglobin B. Methemoglobin C. Carboxyhemoglobin D. Deoxyhemoglobin E. Oxyhemoglobin 	<p>Correct answer is _____</p>
<p>29. ESR of a patient with pneumonia is 48 mm/h. What caused such changes?</p> <ul style="list-style-type: none"> A. Hypogammaglobulinemia B. Hypoproteinemia C. Hypergammaglobulinemia D. Hyperalbuminemia E. Erythrocytosis 	<p>Correct answer is _____</p>
<p>30. After honey consumption a teenager had urticaria accompanied by leukocytosis. What type of leukocytosis is it in this case?</p> <ul style="list-style-type: none"> A. Lymphocytosis B. Monocytosis C. Basophylic leukocytosis D. Eosinophilic leukocytosis E. Neutrophilic leukocytosis 	<p>Correct answer is _____</p>
<p>31. A patient who has been treated for viral hepatitis B developed symptoms of hepatic insufficiency. What changes indicating disorder in protein metabolism are likely to be observed in this case?</p> <ul style="list-style-type: none"> A. Absolute hyperfibrinogenemia B. Absolute hyperglobulinemia C. Absolute hypoalbuminemia D. Absolute hyperalbuminemia E. Protein rate in blood will stay unchanged 	<p>Correct answer is _____</p>

<p>32. Blood analysis of a patient showed signs of HIV infection (human immunodeficiency virus). Which cells does HIV-virus primarily affect?</p> <p>A. Proliferating cells (stem hematopoietic cells) B. Cells that contain receptor IgM (B-lymphocytes) C. Cells that contain receptor T4 (T-helpers) D. Specialized nervous cells (neurons) E. Mast cells</p>	<p>Correct answer is _____</p>
<p>33. A 42 y.o. patient complains of pain in the epigastric area, vomiting; vomit masses have the colour of "coffee-grounds", the patient has also melena. Anamnesis records gastric ulcer. Blood formula: erythrocytes - $2,8 \times 10^{12}/l$, leukocytes - $8 \times 10^9/l$, Hb- 90 g/l. What complication is it?</p> <p>A. Penetration B. Perforation C. Pyloric stenosis D. Haemorrhage E. Canceration</p>	<p>Correct answer is _____</p>
<p>34. A tooth extraction in a patient with chronic persistent hepatitis was complicated with prolonged hemorrhage. What is the reason for the haemorrhagic syndrome?</p> <p>A. Decrease in fibrin production B. Decrease in thrombin production C. Increase in thromboplastin production D. Increase in fibrinogen synthesis E. Fibrinolysis intensification</p>	<p>Correct answer is _____</p>
<p>35. A 5 year old child is ill with measles. Blood analysis revealed increase of total number of leukocytes up to $13 \times 10^9/l$. Leukogram: basophils - 0, eosinophils - 1, myelocytes - 0, juvenile neutrophils - 0, band neutrophils - 2, segmented neutrophils - 41, lymphocytes - 28, monocytes - 28. Name this phenomenon:</p> <p>A. Agranulocytosis B. Lymphocytosis C. Eosinopenia D. Monocytosis E. Neutropenia</p>	<p>Correct answer is _____</p>
<p>36. A 56 year old patient suffering from cardiac insufficiency has edema of feet and shins, edematous skin is pale and cold. What is the leading mechanism of edema pathogenesis?</p> <p>A. Drop of oncotic pressure in capillaries B. Rise of hydrostatic pressure in venules C. Increase of capillary permeability D. Disorder of lymph outflow E. Positive water balance</p>	<p>Correct answer is _____</p>

<p>37. A 3-year-old boy with pronounced hemorrhagic syndrome doesn't have antihemophilic globulin A (factor VIII) in the blood plasma. Hemostasis has been impaired at the following stage:</p> <ul style="list-style-type: none"> A. Conversion of prothrombin to thrombin B. Conversion of fibrinogen to fibrin C. Blood clot retraction D. External mechanism of prothrombinase activation E. Internal mechanism of prothrombinase activation 	<p>Correct answer is _____</p>
<p>38. Electrophoretic study of a blood serum sample, taken from the patient with pneumonia, revealed an increase in one of the protein fractions. Specify this fraction:</p> <ul style="list-style-type: none"> A. Albumins B. α_1-globulins C. α_2-globulins D. β-globulins E. γ-globulins 	<p>Correct answer is _____</p>
<p>39. A clinic observes a 49 year old patient with significant prolongation of coagulation time, gastrointestinal haemorrhages, subcutaneous hematomas. These symptoms might be explained by the deficiency of the following vitamin:</p> <ul style="list-style-type: none"> A. B_1 B. B_6 C. H D. K E. E 	<p>Correct answer is _____</p>
<p>40. Examination of a man who had been working hard under higher temperature of the environment revealed abnormal quantity of blood plasma proteins. What phenomenon is the case?</p> <ul style="list-style-type: none"> A. Absolute hyperproteinemia B. Absolute hypoproteinemia C. Relative hyperproteinemia D. Dysproteinemia E. Paraproteinemia 	<p>Correct answer is _____</p>
<p>41. Toxic affection of liver results in dysfunction of protein synthesis. It is usually accompanied by the following kind of dysproteinemia:</p> <ul style="list-style-type: none"> A. Relative hypoproteinemia B. Relative hyperproteinemia C. Absolute hypoproteinemia D. Absolute hyperproteinemia E. Paraproteinemia 	<p>Correct answer is _____</p>

<p>42. 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 following group:</p> <ul style="list-style-type: none"> A. $O\alpha\beta$ (I) B. $A\beta$ (II) C. $B\alpha$ (III) D. AB (IV) E. - 	<p>Correct answer is _____</p>
<p>43. A pregnant woman underwent ABO 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?</p> <ul style="list-style-type: none"> A. O(I) B. A(II) C. B(III) D. AB(IV) E. - 	<p>Correct answer is _____</p>
<p>44. The cellular composition of exudate largely depends on the etiological factor of inflammation. What leukocytes are the first to get into the focus of inflammation caused by pyogenic bacteria?</p> <ul style="list-style-type: none"> A. Monocytes B. Basophils C. Myelocytes D. Neutrophil granulocytes E. Eosinophilic granulocytes 	<p>Correct answer is _____</p>
<p>45. A patient with skin mycosis has disorder of cellular immunity. The most typical characteristic of it is reduction of the following index:</p> <ul style="list-style-type: none"> A. B-lymphocytes B. T-lymphocytes C. Immunoglobulin G D. Immunoglobulin E E. Plasmocytes 	<p>Correct answer is _____</p>
<p>46. 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 $O\alpha\beta$ (I), $A\beta$ (II), $B\alpha$ (III) didn't activate erythrocyte agglutination reaction. The group of the analyzed blood is:</p> <ul style="list-style-type: none"> A. $O\alpha\beta$ (I) B. $A\beta$ (II) C. $B\alpha$ (III) D. AB (IV) E. - 	<p>Correct answer is _____</p>

<p>47. Blood count of an athlete is as follows: erythrocytes - $5, 5 \times 10^{12}/l$, Hb - 180 g/l, leukocytes - $7 \times 10^9/l$, neutrophils - 64%, basophils - 0,5%, eosinophils - 0,5%, monocytes - 8%, lymphocytes - 27%. First of all, such results indicate the stimulation of:</p> <ul style="list-style-type: none"> A. Leukopoiesis B. Lymphopoiesis C. Granulocytopoiesis D. Immunogenesis E. Erythropoiesis 	<p>Correct answer is _____</p>
<p>48. After implantation of a cardiac valve a young man constantly takes indirect anticoagulants. His state was complicated by hemorrhage. What substance content has decreased in blood?</p> <ul style="list-style-type: none"> A. Heparin B. Prothrombin C. Haptoglobin D. Creatin E. Ceruloplasmin 	<p>Correct answer is _____</p>
<p>49. After an attack of bronchial asthma a patient had his peripheral blood tested. What changes can be expected?</p> <ul style="list-style-type: none"> A. Thrombocytopenia B. Leukopenia C. Eosinophilia D. Lymphocytosis E. Erythrocytosis 	<p>Correct answer is _____</p>
<p>50. A 3-year-old child had eaten some strawberries. Soon he developed a rash and itching. What was found in the child's leukogram?</p> <ul style="list-style-type: none"> A. Neutrophilic leukocytosis B. Monocytosis C. Lymphocytosis D. Eosinophilia E. Hypolymphemia 	<p>Correct answer is _____</p>
<p>51. In a dysentery patient undergoing treatment in the contagious isolation ward, a significant increase in packed cell volume has been observed (60%). What other value will be affected by this change?</p> <ul style="list-style-type: none"> A. Increasing blood viscosity B. Increasing erythrocyte sedimentation rate (ESR) C. Leukopenia D. Increasing volume of blood circulation E. Thrombocytopenia 	<p>Correct answer is _____</p>

<p>52. A patient is diagnosed with hereditary coagulopathy that characterized by factor VIII deficiency. Specify the phase of blood clotting during which coagulation will be disrupted in the given case:</p> <ul style="list-style-type: none"> A. Fibrin formation B. Thromboplastin formation C. Thrombin formation D. Clot retraction E. - 	<p>Correct answer is _____</p>
<p>53. In allergic disease, a dramatic increase in basophilic leukocyte number in patient' blood is observed. This phenomenon is due to the following basophil function:</p> <ul style="list-style-type: none"> A. Phagocytosis of immune complexes B. Phagocytosis of microorganisms and small particles C. Participation in blood clotting D. Participation of heparin and histamine in metabolism E. Immunoglobulin synthesis 	<p>Correct answer is _____</p>
<p>54. A blood drop has been put into a test tube with 0,3% solution of NaCl. What will happen with erythrocytes?</p> <ul style="list-style-type: none"> A. Shrinkage B. Mechanical haemolysis C. Osmotic haemolysis D. Biological haemolysis E. Any changes will be observed 	<p>Correct answer is _____</p>
<p>55. A patient has the oxyhemoglobin dissociation curve shifted to the left. What blood changes induce this condition?</p> <ul style="list-style-type: none"> A. Acidosis, hypercapnia, temperature rise B. Acidosis, hypercapnia, temperature drop C. Acidosis, hypocapnia, temperature rise D. Alkalosis, hypocapnia, temperature drop E. - 	<p>Correct answer is _____</p>
<p>56. Blood analysis of a 16-year-old girl suffering from the autoimmune inflammation of thyroid gland revealed multiple plasmatic cells. Such increase in plasmocyte number is caused by proliferation and differentiation of the following blood cells:</p> <ul style="list-style-type: none"> A. Tissue basophils B. T-helpers C. T-killers D. T-supressors E. B-lymphocytes 	<p>Correct answer is _____</p>

<p>57. It is known that people who permanently live in highland have an increased concentration of erythrocytes per each blood volume unit. Owing to this fact blood can optimally fulfil the following function:</p> <ul style="list-style-type: none"> A. Maintenance of acid-base balance B. Maintenance of ionic equilibrium C. Gas transport D. Amino acid transport E. Haemostasis participation 	<p>Correct answer is _____</p>
<p>58. Before an operation a 30-yearold male patient had his blood typed. It turned out to be Rh-positive. Erythrocytes were not agglutinated by standard sera of 0(I), A(II), B(III) groups. According to the AB0 blood group system this blood is of the following type:</p> <ul style="list-style-type: none"> A. 0(I) B. A(II) C. B(III) D. AB(IV) E. – 	<p>Correct answer is _____</p>
<p>59. In hemotransfusions it is recommended to transfuse only phenotype-matched blood. According to the AB0 system, blood group is determined by:</p> <ul style="list-style-type: none"> A. Proteins of blood serum B. Protein determinants of erythrocyte membranes C. Protein-polysaccharide components of leukocytes D. Carbohydrate determinants of leukocyte membranes E. Carbohydrate determinants of erythrocyte membranes 	<p>Correct answer is _____</p>
<p>60. Examination of a patient, suffering from atrophic gastritis, revealed megaloblastic anemia. The anemia is likely to be caused by the deficiency of the following substance:</p> <ul style="list-style-type: none"> A. Iron B. Vitamin B1 C. Vitamin B6 D. Gastromucoproteid E. Erythropoietins 	<p>Correct answer is _____</p>
<p>61. A patient complains of frequent gingival haemorrhages he has been experiencing since his childhood. Blood test revealed a deficiency in blood-coagulation factor VIII. This means that the patient has an impairment of:</p> <ul style="list-style-type: none"> A. Thrombin generation B. Fibrin generation C. Prothrombinase generation D. Thrombocyte adhesion E. Thrombocyte aggregation 	<p>Correct answer is _____</p>

<p>62. A 29-year-old patient was delivered to a hospital because of intoxication with carbon monoxide. Objectively: the patient presents with symptoms of severe hypoxia - evident dyspnea, cyanosis, tachycardia. What compound is produced as a result of intoxication with carbon monoxide?</p> <ul style="list-style-type: none"> A. Methemoglobin B. Carbhemoglobin C. Oxyhemoglobin D. Carboxyhemoglobin E. Sulfhemoglobin 	<p>Correct answer is _____</p>
<p>63. A woman with A (II), Rh-negative blood had a child with B (III), Rh-positive blood. The child was diagnosed with congenital anaemia of newborns. What is the most likely cause of its development?</p> <ul style="list-style-type: none"> A. ABO-incompatibility B. Rhesus incompatibility C. Hereditary chromosomal pathology D. Intrauterine intoxication E. Intrauterine infection 	<p>Correct answer is _____</p>
<p>64. A patient has petechial hemorrhages on the gums, hard and soft palate, buccal mucosa. This is caused by the dysfunction of the following blood corpuscles:</p> <ul style="list-style-type: none"> A. Eosinophils B. Monocytes C. Lymphocytes D. Platelets E. Erythrocytes 	<p>Correct answer is _____</p>
<p>65. 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?</p> <ul style="list-style-type: none"> A. I (0) Rh+ B. II (A) Rh+ C. III (B) Rh+ D. IV (AB) Rh+ E. IV (AB) Rh- 	<p>Correct answer is _____</p>
<p>66. A 30-year-old man with diabetes mellitus type I was hospitalized. The patient is comatose. Laboratory tests revealed hyperglycemia and ketonemia. What metabolic disorder can be detected in this patient?</p> <ul style="list-style-type: none"> A. Metabolic alkalosis B. Metabolic acidosis C. Respiratory alkalosis D. Respiratory acidosis E. Normal acid-base balance 	<p>Correct answer is _____</p>

<p>67. A patient, who has been suffering for a long time from intestine disbacteriosis, has increased hemorrhaging caused by disruption of posttranslational modification of blood-coagulation factors II, VII, IX, and X in liver. What vitamin deficiency is the cause of this condition?</p> <p>A. P B. C C. K D. B₁₂ E. B₉</p>	<p>Correct answer is _____</p>
<p>68. A patient visited a dentist to extract a tooth. After the tooth had been extracted, bleeding from tooth socket continued for 15 minutes. Anamnesis states that the patient suffers from active chronic hepatitis. What phenomenon can extend the time of hemorrhage?</p> <p>A. Decrease of albumin content in blood B. Thrombocytopenia C. Increased activity of anticoagulation system D. Decrease of fibrinogen content in blood E. Hypocalcemia</p>	<p>Correct answer is _____</p>
<p>69. A patient is diagnosed with chronic atrophic gastritis attended by deficiency of Castle's intrinsic factor. What type of anemia does the patient have?</p> <p>A. Iron refractory anemia B. Iron-deficiency anemia C. B₁₂-deficiency anemia D. Protein-deficiency anemia E. Hemolytic anemia</p>	<p>Correct answer is _____</p>
<p>70. A 3-year-old boy with pronounced hemorrhagic syndrome doesn't have antihemophilic globulin A (factor VIII) in the blood plasma. Hemostasis has been impaired at the following stage:</p> <p>A. 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</p>	<p>Correct answer is _____</p>
<p>71. 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?</p> <p>A. B(III) B. 0(I) C. A(II) D. AB(IV) E. -</p>	<p>Correct answer is _____</p>

<p>72. A patient is diagnosed with hereditary coagulopathy that is characterized by factor VIII deficiency. Specify the phase of blood clotting during which coagulation will be disrupted in the given case:</p> <p>A. Thromboplastin formation B. Thrombin formation C. Fibrin formation D. Clot retraction E. -</p>	<p>Correct answer is _____</p>
<p>73. 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?</p> <p>A. 0 (I) B. A (II) C. B (III) D. AB (IV) E. -</p>	<p>Correct answer is _____</p>
<p>74. 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 can the father have?</p> <p>A. II (A), Rh+ B. I (0), Rh+ C. III (B), Rh+ D. I (0), Rh- E. II (A), Rh-</p>	<p>Correct answer is _____</p>
<p>75. A patient, who has been suffering for a long time from intestine disbacteriosis, has increased hemorrhaging caused by disruption of posttranslational modification of blood-coagulation factors II, VII, IX, and X in the liver. What vitamin deficiency is the cause of this condition?</p> <p>A. K B. B12 C. B9 D. C E. P</p>	<p>Correct answer is _____</p>
<p>76. 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?</p> <p>A. IV (AB) Rh- B. II (A) Rh+ C. III (B) Rh- D. IV (AB) Rh+ E. I (0) Rh+</p>	<p>Correct answer is _____</p>

<p>77. A patient visited a dentist to extract a tooth. After the tooth had been extracted, bleeding from the tooth socket continued for 15 minutes. Anamnesis states that the patient suffers from active chronic hepatitis. What phenomenon can extend the time of hemorrhage?</p> <p>A. Decrease of fibrinogen content in blood B. Thrombocytopenia C. Hypocalcemia D. Increased activity of anticoagulation system E. Decrease of albumine content in blood</p>	<p>Correct answer is _____</p>
<p>78. Upon toxic damage of hepatic cells resulting in disruption of liver function the patient developed edemas. What changes of blood plasma are the main cause of edema development?</p> <p>A. Decrease of albumin content B. Increase of globulin conten C. Decrease of fibrinogen conten D. Increase of albumin conten E. Decrease of globulin conten</p>	<p>Correct answer is _____</p>
<p>79. 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:</p> <p>A. 0 (I) B. A (II) C. B (III) D. AB (IV) E. -</p>	<p>Correct answer is _____</p>
<p>80. A 60-year-old man suffering from chronic hepatitis frequently observes nasal and gingival hemorrhages, spontaneous hemorrhagic rashes on the skin and mucosa. Such presentations result from:</p> <p>A. Decreased synthesis of prothrombin and fibrinogen B. Increased blood content of aminotransferases C. Decreased synthesis of serum albumins D. Increased blood content of macroglobulins and cryoglobulins E. Decreased blood content of cholinesterase</p>	<p>Correct answer is _____</p>
<p>81. After pancreatic surgery the patient developed hemorrhagic syndrome with disturbed 3rd stage of blood clotting. What will be the most likely mechanism of the hemostatic disorder?</p> <p>A. Decrease of prothrombin synthesis</p>	

<p>B. Decrease of fibrinogen synthesis C. Fibrinolysis activation D. Fibrin-stabilizing factor deficiency E. Qualitative abnormalities of fibrinogenesis</p>	
<p>82. To lose some weight a woman has been limiting the amount of products in her diet. 3 months later she developed edemas and her diuresis increased. What dietary component deficiency is the cause of this? A. Proteins B. Fats C. Vitamins D. Minerals E. Carbohydrates</p>	
<p>83. During acute hemorrhage the body loses not only fluid but also electrolytes. What substance solution can be used as a simple blood substitute? A. Albumin B. Calcium chloride C. Sodium bromide D. Sodium nucleotide E. Sodium chloride</p>	

Physiology of heart & circulation

<p>1. The calcium canals of cardiomyocytes have been blocked on an isolated rabbit's heart. What changes in the heart's activity can happen as a result?</p> <ul style="list-style-type: none"> A. Decreased heart beat rate B. Heart stops in systole C. Decreased force of the contraction D. Decreased rate and force heart beat E. Heart stops in diastole 	<p>Correct answer is _____</p>
<p>2. Examination of a person revealed that minute volume of heart is 3500 mL, systolic volume is 50 mL. What is the frequency of cardiac contraction?</p> <ul style="list-style-type: none"> A. 90 bpm B. 50 bpm C. 80 bpm D. 60 bpm E. 70 bpm 	<p>Correct answer is _____</p>
<p>3. A person has steady HR not exceeding 40 bpm. What is the pacemaker of the heart rhythm in this person?</p> <ul style="list-style-type: none"> A. Atrioventricular node B. His' bundle C. Sinoatrial node D. Purkinje' fibers E. Branches of His' bundle 	<p>Correct answer is _____</p>
<p>4. After the trauma, the patient's right <i>n. vagus</i> was damaged. Which violation of the cardiac activity is possible in this case?</p> <ul style="list-style-type: none"> A. Violation of the automatism of an atrio-ventricular node B. Violation of the automatism of a Kiss-Fleck node C. Block of a conductivity in the atrio-ventricular node D. Violation of conductivity in the right auricle E. Arrhythmia 	<p>Correct answer is _____</p>
<p>5. Electrocardiogram of a man showed absence of P-wave in all leads. What part of the conducting system is blocked?</p> <ul style="list-style-type: none"> A. Common branch of the bundle of His B. Atrioventricular node C. Sinu-atrial node D. Branches of the bundle of His E. Purkinje's fibers 	<p>Correct answer is _____</p>
<p>6. The process of heart transplantation determined the viability of myocardial cells. The determination of what myocardium parameter is the most important?</p> <ul style="list-style-type: none"> A. Concentration of Ca-ions in myofibrils B. Concentration of Ca-ions in heart C. Heart temperature D. Rest potential of cardiomyocytes E. Concentration of oxygen in heart vessels 	<p>Correct answer is _____</p>

<p>7. The electrocardiogram demonstrated that the duration of man's heart cycle is 1 sec. What is the heart rate per minute?</p> <ul style="list-style-type: none"> A. 50 B. 60 C. 70 D. 80 E. 100 	<p>Correct answer is _____</p>
<p>8. The heart rate and the systemic arterial blood pressure of a man have increased due to voluntary respiratory delay for 40 c. Realization of what regulation mechanism caused these changes?</p> <ul style="list-style-type: none"> A. – B. Conditioned parasympathetic reflexes C. Conditioned sympathetic reflexes D. Unconditioned parasympathetic reflexes E. Unconditioned sympathetic reflex 	<p>Correct answer is _____</p>
<p>9. Accelerated frequency of the heart rate and increased blood pressure were marked in the sportsman on the start before the competitions. Influence of what parts of the CNS can explain these changes?</p> <ul style="list-style-type: none"> A. Medulla B. Mesencephalon C. Diencephalon D. Hypothalamus E. Cortex of the large hemispheres 	<p>Correct answer is _____</p>
<p>10. Arterial hypertension is caused by the stenosis of the renal arteries in the patient. Activation of what system is the main link in the pathogenesis of this form of hypertension?</p> <ul style="list-style-type: none"> A. Sympathoadrenal B. Renin-angiotensin C. Parasympathetic D. Hypothalamic-pituitary E. Kallikrein-kinin 	<p>Correct answer is _____</p>
<p>11. On experiment on the dog the peripheral part of <i>nervus vagus</i> of the neck was irritated. What changes of the heart function would be observed?</p> <ul style="list-style-type: none"> A. Increased contraction force and rate B. Increased myocardial excitability C. Increased contraction force D. Increased atrioventricular conduction E. Decreased contraction rate 	<p>Correct answer is _____</p>

<p>12. Processes of repolarization are disturbed in ventricular myocardium in examined person. It will cause amplitude abnormalities of configuration and duration of the wave:</p> <ul style="list-style-type: none"> A. P B. Q C. R D. S E. T 	<p>Correct answer is _____</p>
<p>13. While emotional excitement the heart rate in a 30-year-old person run up to 112 Bpm. What part of the conducting system of the heart caused it?</p> <ul style="list-style-type: none"> A. Purkinje's fibers B. Synoatrial node C. His bundle D. His bundle branches E. Intraventricular node 	<p>Correct answer is _____</p>
<p>14. While preparing a patient to the operation the heart chambers' pressure was measured. In one of them the pressure changed during one heart cycle from 0 to 120 mm Hg. What chamber of heart was it?</p> <ul style="list-style-type: none"> A. Left atrium B. Left ventricle C. Right atrium D. Right ventricle E. – 	<p>Correct answer is _____</p>
<p>15. An isolated cell of human heart automatically generates excitation impulses with frequency 60 times per minute. What structure does this cell belong to?</p> <ul style="list-style-type: none"> A. Ventricle B. Sinoatrial node C. Atrioventricular node D. His' bundle E. Atrium 	<p>Correct answer is _____</p>
<p>16. Examination of an isolated cardiomyocyte revealed that it didn't generate excitation impulses automatically. This cardiomyocyte was obtained from:</p> <ul style="list-style-type: none"> A. Sinoatrial node B. Purkinje's fibers C. Ventricles D. Atrioventricular node E. His' bundle 	<p>Correct answer is _____</p>

<p>17. A peripheral segment of <i>vagus nerve</i> on a dog's neck was being stimulated in course of an experiment. The following changes of cardiac activity could be mean while observed:</p> <ul style="list-style-type: none"> A. Heart rate and heart force amplification B. Enhancement of atrioventricular conduction C. Heart rate fall D. Heart hurry E. Increased excitability of myocardium 	<p>Correct answer is _____</p>
<p>18. A patient who suffers from severe disorder of water-salt metabolism experienced cardiac arrest in diastole. What is the most probable mechanism of cardiac arrest in diastole?</p> <ul style="list-style-type: none"> A. Hypernatremia B. Hyponatremia C. Hypokaliemia D. Organism dehydration E. Hyperkaliemia 	<p>Correct answer is _____</p>
<p>19. Short-term physical activity resulted in reflex amplification of heart rate and raise of systemic arterial pressure. What receptors activation was the main cause of pressor reflex realization?</p> <ul style="list-style-type: none"> A. Vascular chemoreceptors B. Vascular volume receptors C. Proprioceptors of active muscles D. Hypothalamus thermoreceptors E. Vascular baroreceptors 	<p>Correct answer is _____</p>
<p>20. Arterial pressure of a surgeon who performed a long operation rose up to 140/110 mm Hg. What changes of humoral regulation could have caused the rise of arterial pressure in this case?</p> <ul style="list-style-type: none"> A. Activation of renin angiotensive system B. Activation of sympathoadrenal system C. Inhibition of sympathoadrenal system D. Activation of formation and excretion of aldosterone E. Activation of kallikrein kinin system 	<p>Correct answer is _____</p>
<p>21. A 63 y.o. man with collapse symptoms was delivered to the emergency hospital. A doctor chose noradrenaline in order to prevent hypotension. What is the action mechanism of this medication?</p> <ul style="list-style-type: none"> A. Activation of dopamine receptors B. Block of M -cholinoreceptors C. Activation of serotonin receptors D. Activation of α_1-adrenoreceptors E. Activation of β-adrenoreceptors 	<p>Correct answer is _____</p>

<p>22. A hypertensive glucose solution was introduced to a patient. It will intensify water movement:</p> <ul style="list-style-type: none"> A. From the capillaries to the intercellular liquid B. There will be no changes of water movement C. From the intercellular liquid to the cells D. From the cells to the intercellular liquid E. From the intercellular liquid to the capillaries. 	<p>Correct answer is _____</p>
<p>23. A cardiac electric stimulator was implanted to a 75 year old man with heart rate of 40 bpm. Thereafter the heart rate raised up to 70 bpm. The electric stimulator has undertaken the function of the following heart part:</p> <ul style="list-style-type: none"> A. His' bundle branches B. Sinoatrial node C. His' bundle fibel's D. Purkinje's fibers E. Atrioventricular node 	<p>Correct answer is _____</p>
<p>24. ECG of a patient with hyperfunction of thyroid gland showed heart hurry. It is indicated by depression of the following ECG element:</p> <ul style="list-style-type: none"> A. QRS complex B. R - R interval C. P – Q interval D. P – Q segment E. P - T interval 	<p>Correct answer is _____</p>
<p>25. An aged man had raise of arterial pressure under a stress. It was caused by activation of:</p> <ul style="list-style-type: none"> A. Functions of thyroid gland B. Sympathoadrenal system C. Functions of adrenal cortex D. Hypophysis function E. Parasympathetic nucleus of vagus 	<p>Correct answer is _____</p>
<p>26. Blood minute volume of a 30 year old woman at rest is 5 l/m. What blood volume is pumped through the pulmonary vessels per minute?</p> <ul style="list-style-type: none"> A. 3,75 l B. 1,5 l C. 2,5 l D. 2,0 l E. 5 l 	<p>Correct answer is _____</p>
<p>27. 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 structures:</p> <ul style="list-style-type: none"> A. His' bundle B. Atria C. Atrioventricular node D. Sinoatrial node E. Ventricles 	<p>Correct answer is _____</p>

<p>28. An animal with aortic valve insufficiency got hypertrophy of its left heart ventricle. Some of its parts have local contractures. What substance accumulated in the myocytes caused these contractures?</p> <ul style="list-style-type: none"> A. Lactic acid B. Potassium C. Carbon dioxide D. Sodium E. Calcium 	<p>Correct answer is _____</p>
<p>29. Systemic arterial pressure of an adult dropped from 120/70 to 90/50 mm Hg that led to reflex vasoconstriction. The vasoconstriction will be maximal in the following organ:</p> <ul style="list-style-type: none"> A. Heart B. Kidneys C. Adrenals D. Brain E. Bowels 	<p>Correct answer is _____</p>
<p>30. 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 trans-capillary water exchange?</p> <ul style="list-style-type: none"> A. Exchange will stay unchanged B. Filtration will be decreased, reabsorption-increased C. Filtration will be increased, reabsorption-decreased D. Both filtration and reabsorption will be increased E. Both filtration and reabsorption will be decreased 	<p>Correct answer is _____</p>
<p>31. 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?</p> <ul style="list-style-type: none"> A. Sympathetic unconditioned reflexes B. Parasympathetic conditioned reflexes C. Parasympathetic unconditioned reflexes D. Sympathetic conditioned reflexes E. Catecholamines 	<p>Correct answer is _____</p>
<p>32. ECG study showed that the T-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:</p> <ul style="list-style-type: none"> A. Depolarization B. Repolarization C. Excitement D. Contraction E. Relaxation 	<p>Correct answer is _____</p>

<p>33. ECG of a patient shows prolongation of T-wave. This is caused by deceleration in ventricles of:</p> <ul style="list-style-type: none"> A. Depolarization and repolarization B. Depolarization C. Repolarization D. Contraction E. Relaxation 	<p>Correct answer is _____</p>
<p>34. In a healthy adult speed of the excitement conduction through the atrioventricular node is 0,02-0,05 m/sec. Atrioventricular delay enables:</p> <ul style="list-style-type: none"> A. Simultaneity of both atria contractions B. Simultaneity of both ventricles contractions C. Sufficient force of atrial contractions D. Sufficient force of ventricular contractions E. Sequence of atrial and ventricular contractions 	<p>Correct answer is _____</p>
<p>35. 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?</p> <ul style="list-style-type: none"> A. Decrease in the circulating blood volume B. Systemic constriction of the venous vessels C. Systemic dilatation of the arterial resistive vessels D. Increase in the heart rate E. Weakening of the pumping ability of heart 	<p>Correct answer is _____</p>
<p>36. Introduction of a big dose of histamine to an experimental animal caused abrupt drop of arterial pressure as a result of:</p> <ul style="list-style-type: none"> A. Increase of heart rate B. Decrease of heart rate C. Decrease of heart rate and force D. Dilatation of resistance vessels E. Constriction of resistance vessels 	<p>Correct answer is _____</p>
<p>37. A patient has delayed conduction of excitement through the atrioventricular node. What changes of ECG will be observed?</p> <ul style="list-style-type: none"> A. Prolongation of Q-S interval B. Negative T wave C. S-T-segment displacement D. Prolongation of P-Q interval E. Prolongation of Q-T interval 	<p>Correct answer is _____</p>
<p>38. Vagus branches that innervate heart are being stimulated during an experiment. This caused reduction of heart rate due to the intensification of the following process (through the cell membrane of cardiac pacemaker):</p> <ul style="list-style-type: none"> A. Calcium and potassium ion yield B. Potassium ion entry C. Potassium ion yield D. Calcium ion entry E. Calcium ion yield 	<p>Correct answer is _____</p>

<p>39. A patient with kidney disease has high blood pressure, especially the diastolic one. Hypersecretion of what biologically active substance causes blood pressure rise?</p> <ul style="list-style-type: none"> A. Adrenaline B. Noradrenaline C. Vasopressin D. Catecholamines E. Renin 	<p>Correct answer is _____</p>
<p>40. 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?</p> <ul style="list-style-type: none"> A. Adrenaline B. Vasopressin C. Angiotensin-II D. Noradrenaline E. Serotonin 	<p>Correct answer is _____</p>
<p>41. ECG of a patient showed that RR interval equaled 1,5 s, heart rate equaled 40 bpm. What is the cardiac pacemaker?</p> <ul style="list-style-type: none"> A. Sinus node B. Atrioventricular node C. His' bundle D. Left branch of His' bundle E. Right branch of His' bundle 	<p>Correct answer is _____</p>
<p>42. Introduction of a local anesthetic to a patient resulted in the development of anaphylactic shock. What is the leading mechanism of blood circulation disturbance?</p> <ul style="list-style-type: none"> A. Activation of sympathoadrenal system B. Reduction of contractile myocardium function C. Decrease of vascular tone D. Hypervolemia E. Pain 	<p>Correct answer is _____</p>
<p>43. A 50 y.o. man abruptly felt palpitation, heart ache, strong weakness, rise of arterial pressure. His pulse is irregular and deficient. ECG shows no P wave and different R-R intervals. What cardiac rate abnormality is it?</p> <ul style="list-style-type: none"> A. Respiratory arrhythmia B. Ciliary arrhythmia C. Paroxysmal tachycardia D. Atrioventricular heart block E. Sinus extrasystole 	<p>Correct answer is _____</p>

<p>44. While a 24 year old woman was waiting for tooth extraction, tonus of sympathetic part of autonomic nervous system rose. What reaction will the patient display?</p> <ul style="list-style-type: none"> A. Miotic pupils B. Bronchus constriction C. Increased frequency of heartbeat D. Hyperperistalsis E. Hypersecretion of digestive juices 	<p>Correct answer is _____</p>
<p>45. During phonocardiogram registration it was ascertained that the duration of the first heart sound twice exceeds the norm. It is most likely that patient has the following organ affected:</p> <ul style="list-style-type: none"> A. Cardiomyocytes of heart atriums B. Cardiomyocytes of ventricles C. Cardiomyocytes of atriums D. Atrioventricular valves E. Semilunar valves 	<p>Correct answer is _____</p>
<p>46. In course of an experiment the peripheral segment of <i>vagus nerve</i> of an animal was stimulated. The following changes of heart activity were observed:</p> <ul style="list-style-type: none"> A. Increase of frequency and force of heartbeat B. Increased excitability of myocardium C. Increased conduction of excitement through myocardium D. Increased force of heartbeat E. Reduced heart rate 	<p>Correct answer is _____</p>
<p>47. A patient suffering from essential arterial hypertension got hypertensive crisis that caused an attack of cardiac asthma. What is the leading mechanism of cardiac insufficiency in this case?</p> <ul style="list-style-type: none"> A. Absolute coronary insufficiency B. Myocardium damage C. Disturbed blood inflow to the heart D. Cardiac overload due to increased resistance E. Cardiac overload due to increased blood volume 	<p>Correct answer is _____</p>
<p>48. On the 2nd day after myocardium infarction the patient's systolic arterial pressure abruptly dropped down to 60 mm Hg. This was accompanied by tachycardia up to 140 bpm, dyspnea, loss of consciousness. What is the leading mechanism in the pathogenesis of this shock?</p> <ul style="list-style-type: none"> A. Decrease of circulating blood volume B. Paroxysmal tachycardia C. Decrease of stroke volume D. Intoxication by the products of necrotic degeneration E. Anaphylactic reaction to myocardial proteins 	<p>Correct answer is _____</p>

<p>49. A patient was stung by a bee. Examination revealed that his left hand was hot, pink, edematic, there was a big red blister on the site of sting. What is the leading mechanism of edema development?</p> <ul style="list-style-type: none"> A. Injury of vessels caused by the sting B. Drop of oncotic pressure in tissue C. Drop of osmotic pressure in tissue D. Increased vessel permeability E. Reduced vessel filling 	<p>Correct answer is _____</p>
<p>50. 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?</p> <ul style="list-style-type: none"> A. 4 l/min B. 5 l/min C. 6 l/min D. 7 l/min E. 10 l/min 	<p>Correct answer is _____</p>
<p>51. A 49 year old woman spent a lot of time standing. As a result of it she got leg edema. What is the most likely cause of the edema?</p> <ul style="list-style-type: none"> A. Decrease in hydrostatic pressure of blood in veins B. Decrease in hydrostatic pressure of blood in arteries C. Increase in hydrostatic pressure of blood in veins D. Increase in oncotic pressure of blood plasma E. Increase in systemic arterial pressure 	<p>Correct answer is _____</p>
<p>52. 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:</p> <ul style="list-style-type: none"> A. Vasopressin B. Angiotensin C. Renin D. Natriuretic hormone E. Aldosterone 	<p>Correct answer is _____</p>
<p>53. 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:</p> <ul style="list-style-type: none"> A. Atrium B. Ventricle C. Sinoatrial node D. Atrioventricular node E. His' bundle 	<p>Correct answer is _____</p>

<p>54. 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?</p> <ul style="list-style-type: none"> A. Parasympathetic conditioned reflexes B. Parasympathetic unconditioned reflexes C. Sympathetic conditioned reflexes D. Sympathetic unconditioned reflexes E. Peripheric reflexes 	<p>Correct answer is _____</p>
<p>55. A 35-year-old man developed acute heart failure while running for a long time. What changes in ionic composition can be observed in the cardiac muscle?</p> <ul style="list-style-type: none"> A. Reduction of Na^+ and Ca^{2+} ions in the myocardium cells B. Reduction of Na^+ and Ca^{2+} ions in the extracellular space C. Accumulation of Na^+ and Ca^{2+} ions in the myocardium cells D. Reduction of K^+ and Mg^{2+} ions in the extracellular space E. Accumulation of K^+ and Mg^{2+} ions in the myocardium cells 	<p>Correct answer is _____</p>
<p>56. 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:</p> <ul style="list-style-type: none"> A. Right ventricle B. Left ventricle C. Atrio-ventricular node D. Atria E. Ventricles 	<p>Correct answer is _____</p>
<p>57. A patient with a pathology of the cardiovascular system developed edemata of the lower extremities. What is the mechanism of cardiac edema development?</p> <ul style="list-style-type: none"> A. Increased hydrostatic pressure at the arterial end of the capillary B. Increased hydrostatic pressure at the venous end of the capillary C. Increased oncotic pressure D. Reduced osmotic pressure E. Lymph efflux disorder 	<p>Correct answer is _____</p>

<p>58. During ventricular systole, the cardiac muscle does not respond to additional stimulation because it is in the phase of:</p> <ul style="list-style-type: none"> A. Hyperexcitability B. Subnormal excitability C. Absolute refractoriness D. Relational refractoriness E. There is no correct answer 	<p>Correct answer is _____</p>
<p>59. A patient with constant headaches, pain in the occipital region, tinnitus, dizziness has been admitted to the cardiology department. Objectively: AP - 180/110 mm Hg, heart rate - 95/min. Radiographically, there is a stenosis of one of the renal arteries. Hypertensive condition in this patient has been caused by the activation of the following system:</p> <ul style="list-style-type: none"> A. Sympathoadrenal B. Renin-angiotensin C. Hemostatic D. Kinin E. Immune 	<p>Correct answer is _____</p>
<p>60. An animal experiment is aimed at studding of cardiac cycle. All the heat valves are closed. What phase of cardiac cycle is characterized by this status?</p> <ul style="list-style-type: none"> A. Protodiastolic period B. Asynchronous contraction C. Isometric contraction D. Rapid filling E. Reduced filling 	<p>Correct answer is _____</p>
<p>61. Experimental stimulation of the sympathetic nerve branches that innervate the heart caused the increase in force of heart contraction because the membrane of typical cardiomyocytes permitted an increase in:</p> <ul style="list-style-type: none"> A. Potassium ion entry B. Potassium ion exit C. Calcium ion exit D. Calcium ion entry E. Calcium and potassium ions exit 	<p>Correct answer is _____</p>
<p>62. 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?</p> <ul style="list-style-type: none"> A. Increasing venous return B. Decreasing venous return C. Increasing arterial pressure D. Increasing central venous pressure E. Decreasing oncotic pressure of blood plasma 	<p>Correct answer is _____</p>

<p>63. A patient complains of palpitation after stress. The pulse is 104 bpm, P-Q=0,12 seconds, there are no changes of QPS complex. What type of arrhythmia does the patient have?</p> <ul style="list-style-type: none"> A. Ciliary arrhythmia B. Sinus bradycardia C. Sinus tachycardia D. Sinus arrhythmia E. Extrasystole 	<p>Correct answer is _____</p>
<p>64. ECG of a patient shows that T-waves in the second standard extremity lead are positive, their amplitude and duration are normal. It would be true that the following process is taking its normal course in the cardiac ventricles:</p> <ul style="list-style-type: none"> A. Excitement B. Contraction C. Depolarization D. Relaxation E. Repolarization 	<p>Correct answer is _____</p>
<p>65. Dentists commonly practice local anaesthetization by applying Novocain solution with 0,1% adrenalin solution. The added adrenalin induces:</p> <ul style="list-style-type: none"> A. Arterial pressure drop B. Arterial pressure rise C. Local vasoconstriction D. Local vasodilatation E. Decrease in vascular resistance 	<p>Correct answer is _____</p>
<p>66. A patient has a first-degree atrioventricular block accompanied by the prolongation of P-Q interval up to 0,25 s. Under such conditions the following myocardial function will be disturbed:</p> <ul style="list-style-type: none"> A. Excitability B. Conduction C. Automatism D. Contractibility E. – 	<p>Correct answer is _____</p>
<p>67. As a result of a rapid change from horizontal to vertical body position a 16-year-old girl lost consciousness. What is the reason for it?</p> <ul style="list-style-type: none"> A. Heart rate decrease B. Arterial pressure rise C. Decreased venous return D. Increased venous return E. – 	<p>Correct answer is _____</p>

<p>68. In course of an experiment researchers stimulate a branch of a sympathetic nerve that innervates heart. What changes in cardiac activity should be registered?</p> <ul style="list-style-type: none"> A. Decrease in heart force B. Increase in heart rate C. Increase in heart force D. Increase in arterial pressure E. Increase in heart rate and heart force 	<p>Correct answer is _____</p>
<p>69. Functioning of certain structures of the isolated heart was stopped by means of cooling. What structure was cooled providing that the heart first stopped contractions and then resumed them with a frequency twice lower than the initial one?</p> <ul style="list-style-type: none"> A. Sinoatrial node B. Atrioventricular node C. His' bundle D. His' bundle branches E. Purkinje's fibers 	<p>Correct answer is _____</p>
<p>70. An 18-year-old patient complains of general weakness, fatigue, low spirits. The patient is of the asthenic constitution type. Ps - 68/min., AP - 90/60 mm Hg. She has been found to have primary neurocirculatory hypotension. What is the leading factor of the arterial pressure drop in this patient?</p> <ul style="list-style-type: none"> A. Decreased minute blood volume B. Hypovolemia C. Deposition of blood in the veins of the systemic circulation D. Decreased cardiac output E. Decreased tonus of resistive vessels 	<p>Correct answer is _____</p>
<p>71. A student who unexpectedly met his girlfriend developed an increase in systemic arterial pressure. This pressure change was caused by the intensified realization of the following reflexes:</p> <ul style="list-style-type: none"> A. Unconditional parasympathetic B. Unconditional sympathetic C. Conditional sympathetic D. Conditional parasympathetic E. Conditional sympathetic and parasympathetic 	<p>Correct answer is _____</p>
<p>72. Experimental stimulation of the peripheral segment of the vagus nerve at a cat will result in the following changes:</p> <ul style="list-style-type: none"> A. Dilated pupils B. Decreased heart rate C. Increased heart rate D. Increased respiratory rate E. Bronchiectasis 	<p>Correct answer is _____</p>

<p>73. In the solution being used for perfusing the isolated heart of rat, the K⁺ concentration has been increased to 8 mmol/l. What changes in the heart are to be expected?</p> <ul style="list-style-type: none"> A. There will be no changes B. Diastolic arrest C. Heart rate increase D. Systolic arrest E. Heart force increase 	<p>Correct answer is _____</p>
<p>74. ECG of a 46-year-old patient shows an increase the QRS duration. It might be caused by:</p> <ul style="list-style-type: none"> A. Increased ventricular activation time B. Increased atrial and ventricular excitability C. Increased atrial activation time D. Conduction disturbances in the AV node E. Increased atrial excitability 	<p>Correct answer is _____</p>
<p>75. A patient with hypertensive crisis has increased content of angiotensin II in blood. Angiotensin pressor effect is based on:</p> <ul style="list-style-type: none"> A. Activation of kinin-kallikrein system B. Prostaglandin hypersecretion C. Contraction of arteriole muscles D. Activation of biogenic amine synthesis E. Vasopressin production stimulation 	<p>Correct answer is _____</p>
<p>76. In 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?</p> <ul style="list-style-type: none"> A. Rheography B. Plethysmography C. Phlebography D. Sphygmography E. Myography 	<p>Correct answer is _____</p>
<p>77. Electrocardiogram of a young man reveals deviation of his electrical axis of heart at the left. This phenomenon can be caused by:</p> <ul style="list-style-type: none"> A. Dilation of the right ventricle B. Dilation of the right atrium C. Asthenic body type D. Dilation of the left atrium E. Hypersthenic body type 	<p>Correct answer is _____</p>

<p>78. A patient with constant headaches, pain in the occipital region, tinnitus, dizziness has been admitted to the cardiology department. Objectively: AP- 180/110mm Hg, heart rate - 95/min. Radiographically, there is a stenosis of one of the renal arteries. Hypertensive condition in this patient has been caused by the activation of the following system:</p> <p>A. Renin-angiotensin B. Hemostatic C. Sympathoadrenal D. Kinin E. Immune</p>	<p>Correct answer is _____</p>
<p>79. Patient's systolic blood pressure is 90 mm Hg, diastolic - 70 mm Hg. Such blood pressure is caused by decrease of the following factor:</p> <p>A. Pumping ability of the left heart B. Pumping ability of the right heart C. Aortic compliance D. Total peripheral resistance E. Vascular tone</p>	<p>Correct answer is _____</p>
<p>80. A 67-year-old man was delivered to the cardiology unit with complaints of periodical pain in the heart, dyspnea after even insignificant physical exertion, cyanosis, and edemas. ECG revealed additional contractions of the heart ventricles. Name this type of rhythm disturbance:</p> <p>A. Tachycardia B. Flutter C. Fibrillation D. Extrasystole E. Bradycardia</p>	
<p>81. The patient's ECG shows that in the second 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 sec (norm is 0.07-0.10 sec). It can be concluded that the following process occurs normally in the cardiac atria:</p> <p>A. Activation B. Relaxation C. Depolarization D. Repolarization E. Contraction</p>	
<p>82. Due to blood loss the circulating blood volume of the patient decreased. How will it affect the blood pressure in this patient?</p> <p>A. Systolic pressure will decrease while diastolic will increase B. Only systolic pressure will decrease C. Diastolic pressure will decrease while systolic will</p>	

increase D. systolic and diastolic pressure will decrease E. Only diastolic pressure will decrease	
83. A 15-year-old teenager complains of lack of air, general weakness, palpitation. Heart rate is 130 bpm., BP is 100/60 mm Hg. ECG: QRS complex has normal shape and duration. The number of P waves and ventricular complexes is equal, T waves merges with P wave. What type of cardiac arrhythmia is observed in the teenager? A. Paroxysmal atrial tachycardia B. Atrial thrill C. Sinus extrasystole D. Atrial fibrillation E. Sinus tachycardia	

Physiology of respiration system

<p>A. Spasm of smooth muscle of bronchi developed in the patient. Usage of activators of what membrane cytoceptors is physiologically valid to decrease attack?</p> <p>A. α- and β-adrenoreceptors B. α-adrenoreceptors C. β-adrenoreceptors D. M-cholinoreceptors E. N-cholinoreceptors</p>	<p>Correct answer is _____</p>
<p>2. Lung of premature infant is presented on electronic photomicrography of biopsy material. Collapse of the alveolar wall caused by the deficiency of surfactant was revealed. Disfunction of what cells of the alveolar wall caused it?</p> <p>A. Alveocytes type I B. Alveolar macrophagcs C. Secretory cells D. Fibroblasts E. Alveolocytes type II</p>	<p>Correct answer is _____</p>
<p>3. Child asked you to puff up the balloon as much as possible for a one exhalation. What air volume will you use?</p> <p>A. Vital volume of the lungs B. Total volume of the lungs C. Backup volume of the inspiration D. Inspiration volume E. Functional residual volume</p>	<p>Correct answer is _____</p>
<p>4. The alveolar ventilation of the patient is 5 L/min, the breath frequency is 10 per/min, and the tidal volume is 700 ml. What is the patient's dead space ventilation?</p> <p>A. 0,7 L/min B. 4,3 L/min C. - D. 2,0 L/min E. 1,0L/min</p>	<p>Correct answer is _____</p>
<p>5. A patient after pathological process has a thickened alveolar membrane. The direct consequence of the process will be the reduction of:</p> <p>A. Diffuse lung capacity B. Reserve expiratory capacity C. Minute respiratory capacity D. Alveolar lung ventilation E. Oxygen capacity of blood</p>	<p>Correct answer is _____</p>

<p>6. Intrapleural pressure is being measured in a person. In what phase does a person hold his breath if the pressure is -25 cm of water?</p> <p>A. Forced expiration B. Quiet inspiration C. – D. Forced inspiration E. Quiet expiration</p>	<p>Correct answer is _____</p>
<p>7. Part of alveoles of a preterm infant didn't spread because of enhanced elastic recoil of lungs. How can this recoil be reduced?</p> <p>A. By fluid suction from the respiratory tracts B. By glyucose introduction C. By surfactant introduction D. By artificial pulmonary ventilation E. By pure oxygene inhalation</p>	<p>Correct answer is _____</p>
<p>8. A man took a quiet expiration. Name an air volume that is meanwhile contained in his lungs:</p> <p>A. Expiratory reserve volume B. Functional residual capacity C. Residual volume D. Vital lung capacity E. Respiratory volume</p>	
<p>9. A group of mountain climbers went through the blood analysis at the height of 3000 m. It revealed decrease of HCO_3^- to 15 micromole/l (standard is 22-26 $\mu\text{mole/l}$). What is the mechanism of HCO_3^- decrease?</p> <p>A. Intensification of acidogenesis B. Hypoventilation C. Hyperventilation D. Decrease of bicarbonate reabsorption in kidneys E. Decrease of ammoniogenesis</p>	<p>Correct answer is _____</p>
<p>10. A man's intrapleural pressure is being measured. In what phase did the man hold his breath, if his pressure is $-7,5$ mm Hg?</p> <p>A. Forced expiration B. Quiet inspiration C. – D. Quiet expiration E. Forced inspiration</p>	<p>Correct answer is _____</p>
<p>11. Vagi of an experimental animal were cut on both sides. What respiration changes will be observed?</p> <p>A. It will become shallow and frequent B. It will become shallow and infrequent C. No changes will be observed D. It will become deep and infrequent E. It will become deep and frequent</p>	<p>Correct answer is _____</p>

<p>12. 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?</p> <p>A. No changes will be observed B. It will become infrequent and deep C. Thoracic respiration will be maintained, diaphragmal respiration will disappear D. It will come to a standstill E. Diaphragmal respiration will be maintained, thoracic respiration will disappear</p>	<p>Correct answer is _____</p>
<p>13. A patient has a transverse disruption of spinal cord below the IV thoracic segment. What changes of respiration will it cause?</p> <p>A. Respiration will stop B. Respiration will become less frequent C. Respiration will become deeper D. Respiration will become more frequent E. Respiration will stay unchanged</p>	<p>Correct answer is _____</p>
<p>14. 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?</p> <p>A. Inspiratory reserve volume B. Expiratory reserve volume C. Total lung capacity D. Respiratory volume E. Vital capacity of lungs</p>	<p>Correct answer is _____</p>
<p>15. If a man has an attack of bronchiospasm it is necessary to reduce the effect of vagus on smooth muscles of bronchi. What membrane cytoceptors should be blocked for this purpose?</p> <p>A. N-cholinoreceptors B. M-cholinoreceptors C. α-adrenoreceptors D. β-adrenoreceptors E. α- and β-adrenoreceptors</p>	<p>Correct answer is _____</p>
<p>16. A doctor asked a patient to breath out fully after taking a normal breath. What muscles contract during such exhalation?</p> <p>A. Abdominal muscles B. Trapezius muscles C. Pectoral muscles D. External intercostal muscles E. Diaphragm</p>	<p>Correct answer is _____</p>
<p>17. Voluntary breath-holding caused increase of respiration depth and frequency. The main factor stimulating these changes of external respiration is:</p> <p>A. Decreased concentration of H^+ in blood B. Decreased tension of O_2 in blood</p>	<p>Correct answer is _____</p>

<p>C. Decreased tension of CO₂ in blood D. Increased tension of CO₂ in blood E. Increased tension of O₂ in blood</p>	
<p>18. Lungs of a preterm infant have areas of atelectasis (pulmonary collapse). The main cause is: A. Underdeveloped inspiration muscles B. Diminished force of surface tension of lungs C. Surfactant deficiency D. Increased viscous resistance E. Surfactant excess</p>	<p>Correct answer is _____</p>
<p>19. 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: A. Juxtaglomerular B. Peripheral chemoreceptors C. Irritant D. Pleura receptors E. Central chemoreceptors</p>	<p>Correct answer is _____</p>
<p>20. A man has trauma of greater pectoral muscle. What index' decrease will it cause? A. Functional residual lung capacity B. Residual volume C. Expiratory reserve volume D. Inspiratory reserve volume E. Respiratory volume</p>	<p>Correct answer is _____</p>
<p>21. A patient has a transverse laceration of spinal cord below the VI thoracal segment. How will it change the character of breathing? A. It will stop B. It will become more rare C. It will become more deep D. It will become more frequent E. It won't change essentially</p>	<p>Correct answer is _____</p>
<p>22. A man has been holding his breath for 60 seconds. After that the respiratory minute volume has increased up to 12 L. What blood change is the main reason for the increase of respiratory minute volume? A. Increase of pH B. Decrease of pO₂ C. Increase of pCO₂ D. Decrease of pCO₂ E. Increase of pO₂</p>	<p>Correct answer is _____</p>
<p>23. A patient has a traumatic injury of sternocleidomastoid muscle. This has resulted in decrease in the following value:</p>	<p>Correct answer is _____</p>

<ul style="list-style-type: none"> A. Residual volume B. Expiratory reserve volume C. Inspiratory reserve volume D. Functional residual lung capacity E. Respiratory volume 	
<p>24. When studying the signs of pulmonary ventilation, reduction of forced expiratory volume has been detected. What is the likely cause of this phenomenon?</p> <ul style="list-style-type: none"> A. Increase of functional residual lung capacity B. Increase of pulmonary residual volume C. Increase of respiratory volume D. Increase of inspiratory reserve volume E. Obstructive pulmonary disease 	<p>Correct answer is _____</p>
<p>25. 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?</p> <ul style="list-style-type: none"> A. Thermoreceptors B. Juxtacapillary (J) receptors C. Irritant receptors D. Stretch receptors of lungs E. Proprioceptors of respiratory muscles 	<p>Correct answer is _____</p>
<p>26. During auscultation a 26-year-old patient was asked to breathe deep. After 10 breaths the patient lost consciousness, which is associated with the development of the following condition:</p> <ul style="list-style-type: none"> A. Carbon dioxide acidosis B. Respiratory alkalosis C. Polycythemia D. Reduced oxygen capacity of blood E. Erythropenia 	<p>Correct answer is _____</p>
<p>27. The air in a room has increased concentration of carbonic acid. What respiratory changes (depth and rate) will be observed in a person after entering this room?</p> <ul style="list-style-type: none"> A. Decrease in depth B. Decrease in rate C. Increase in rate D. Increase in depth E. Increase in depth and rate 	<p>Correct answer is _____</p>
<p>28. A man who has been staying in a stuffy room for a long time lost consciousness. He regained consciousness after inhalation of ammonia spirit vapour. This substance's effect is connected with</p>	<p>Correct answer is _____</p>

<p>direct influence upon the following structures:</p> <ul style="list-style-type: none"> A. Respiratory centre B. Vasculomotor centre C. Receptors of upper airways D. Resistive vessels E. Capacitive vessels 	
<p>29. A man is in the state of rest. He has been forcing himself to breath deeply and frequently for 3-4 minutes. What effect will it have upon acid-bace balance of the organism?</p> <ul style="list-style-type: none"> A. Metabolic alkalosis B. Metabolic acidosis C. Respiratory acidosis D. Respiratory alkalosis E. There will be no change in acid-base balance 	<p>Correct answer is _____</p>
<p>30. There is a strict time limit for people to stay at a height of 8000 m above sea level without oxygen cylinders. Specify the life-limiting factor in this case:</p> <ul style="list-style-type: none"> A. Humidity rate B. Temperature C. Earth gravity D. Rate of ultraviolet radiation E. Partial pressure of oxygen in air 	<p>Correct answer is _____</p>
<p>31. A group of students who were climbing up a mountain presented with euphoria, tachypnea, tachycardia. Specify the immediate reason for hypocapnia accompanying mountain sickness:</p> <ul style="list-style-type: none"> A. Erythrocytosis B. Anaemia C. Increase in heart rate D. Increase in respiration rate and depth E. Decrease in respiration depth 	<p>Correct answer is _____</p>
<p>32. An unconscious young man with signs of morphine poisoning entered admission office. His respiration is shallow and infrequent which is caused by inhibition of respiratory centre. What type of respiratory failure is it?</p> <ul style="list-style-type: none"> A. Ventilative obstructive B. Ventilative restrictive C. Ventilative dysregulatory D. Perfusive E. Diffusive 	<p>Correct answer is _____</p>
<p>33. When water affects mucous membrane of the inferior nasal meatuses, this causes "diver reflex" that provokes:</p>	<p>Correct answer is _____</p>

<ul style="list-style-type: none"> A. Bronchospasm B. Reflectory dyspnea C. Reflectory hyperpnea D. Reflectory apnea E. Cough 	
<p>34. To assess the effectiveness of breathing in patients, the indicator of functional residual capacity is used. It includes the following volumes:</p> <ul style="list-style-type: none"> A. Inspiratory reserve volume, tidal volume, residual volume B. Inspiratory reserve volume and tidal volume C. Inspiratory reserve volume and residual volume D. Expiratory reserve volume and tidal volume E. Expiratory reserve volume and residual volume 	<p>Correct answer is _____</p>
<p>35. 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:</p> <ul style="list-style-type: none"> A. Physical build of a person B. Height of a person C. Body mass of a person D. Decreased force of respiratory muscle contraction E. Gas composition of the air 	<p>Correct answer is _____</p>
<p>36. A patient has a trauma of sternocleidomastoid muscle. This caused a decrease in value of the following indicator of external respiration:</p> <ul style="list-style-type: none"> A. Residual volume B. Inspiratory reserve volume C. Expiratory reserve volume D. Respiratory capacity E. Functional residual lung capacity 	<p>Correct answer is _____</p>
<p>37. Electrical activity of neurons is being measured. They fire prior to and at the beginning of inhalation. Where are these neurons situated?</p> <ul style="list-style-type: none"> A. Diencephalon B. Mesencephalon C. Medulla oblongata D. Spinal cord E. Cerebral cortex 	<p>Correct answer is _____</p>
<p>38. Work in a mine is known to cause inhalation of large amount of coal dust. Inhaled coal dust can be detected in the following pulmonary cells:</p> <ul style="list-style-type: none"> A. Pericapillary cells B. Secretory endothelial cells 	<p>Correct answer is _____</p>

<p>C. Capillary endothelial cells D. Alveolar macrophages E. Respiratory epithelial cells</p>	
<p>39. Alveolar space of acinus was invaded by bacteria that interacted with the surfactant. This led to the activation of the cells that are localized in the alveolar walls and on the surface. Name these cells:</p> <p>A. Alveolocytes type II B. Alveolar macrophages C. Endothelial cells D. Clara cells E. Alveolocytes type I</p>	<p>Correct answer is _____</p>
<p>40. A patient demonstrates sharp decrease of pulmonary surfactant activity. This condition can result in:</p> <p>A. Alveolar tendency to recede B. Decreased airways resistance C. Decreased work of expiratory muscles D. Increased pulmonary ventilation E. Hyperoxemia</p>	<p>Correct answer is _____</p>
<p>41. During recording of a spirogram a patient calmly exhaled. How do we call the volume of air remaining in the lungs?</p> <p>A. Functional residual capacity B. Pulmonary residual volume C. Expiratory reserve volume D. Tidal volume E. Vital capacity of lungs</p>	<p>Correct answer is _____</p>
<p>42. During training session in the laboratory the students were performing spirometry on themselves. What indicator CANNOT be measured with this method?</p> <p>A. Functional residual capacity B. Respiratory rate C. Maximal breathing capacity D. Vital capacity E. Respiratory minute volume</p>	
<p>43. Patient who has been suffering from bronchial asthma for a long time, developed acute respiratory failure. What is the main mechanism of pathology development in this case?</p> <p>A. Obstructive disorders of pulmonary ventilation B. Pulmonary blood supply disturbance C. Pulmonary enzyme system disturbance D. Decrease elasticity of the pulmonary tissue E. Restrictive disorders</p>	

Physiology of digestion system

<p>1. When the pH level of the stomach lumen decreases to less than 3, the antrum of the stomach releases peptide that acts in paracrine fashion to inhibit gastrin release. This peptide is:</p> <ul style="list-style-type: none"> A. Somatostatin B. Gastrin-releasing peptide C. GIF D. Vasoactive intestinal peptide E. Acetylcholine 	<p>Correct answer is _____</p>
<p>2. The patient with hypersecretion of gastric juice was recommended to exclude concentrated bouillon and vegetable decoctions from the diet because of their stimulation of gastric secretion. What is dominating mechanism of stimulation of secretion in this case?</p> <ul style="list-style-type: none"> A. Irritation of mechanoreceptors of the stomach B. Stimulation of excretion of secretin in the duodenum C. Irritation of taste receptors D. Stimulation of gastrin production by G-cells E. Irritation of mechanoreceptors of the oral cavity 	<p>Correct answer is _____</p>
<p>3. A 60-year-old patient was diagnosed with hypothalamic lateral nuclei stroke. What changes in patient's behavior may be expected?</p> <ul style="list-style-type: none"> A. Unsatisfied hunger B. The rejection of food C. Aggressive behavior D. Thirst E. Depression 	<p>Correct answer is _____</p>
<p>4. The patient in consequence of postulcerative cicatricial changes had the constriction of pyloric part of the stomach (pyloric stenosis). Which functional manifestations hamper during digestion in the stomach?</p> <ul style="list-style-type: none"> A. Carbohydrate hydrolysis B. Albuminolysis C. Fat hydrolysis D. Evacuation of contents E. Secretion of gastric juice 	<p>Correct answer is _____</p>
<p>5. Experimental method "fictitious feeding" proves the realization of control mechanisms for gastric secretion which are named as:</p> <ul style="list-style-type: none"> A. Gastric phase B. Intestinal phase C. Complex-reflex phase D. Neurohumoral phase E. Humoral phase 	<p>Correct answer is _____</p>

<p>6. As a result of a trauma the patient had the damaged lateral nuclei of hypothalamus. Which from the listed conditions of the organism causes such damage?</p> <ul style="list-style-type: none"> A. Bulimia B. Aphagia C. Hyperphagia D. Anorexia E. Areflexia 	<p>Correct answer is _____</p>
<p>7. The digestion system is a part of general system of discharge in an organism. Which from the listed functions does digestion system fulfill?</p> <ul style="list-style-type: none"> A. Motor B. Secretory C. Excretory D. Protective E. Incretory 	<p>Correct answer is _____</p>
<p>8. A college entrant constantly experiences "dry mouth" before entrance examination. Which regulation mechanism from the named below basically causes this condition?</p> <ul style="list-style-type: none"> A. Humoral B. Unconditioned-reflex C. Conditioned-reflex D. Paracrine E. Local-reflex 	<p>Correct answer is _____</p>
<p>9. During the examination of the group of people enzymatic activity of saliva was defined. Which enzyme activity from the named below was examined?</p> <ul style="list-style-type: none"> A. Pepsin B. Amylases C. Gastricsin D. Lactases E. Trypsin 	<p>Correct answer is _____</p>
<p>10. The person distinguishes four gustatory qualities: sweet, sour, bitter and salt. Which from the listed gustatory substances is the sensitivity expressed in greater degree to?</p> <ul style="list-style-type: none"> A. Bitter B. Salt C. Sour D. Sweet E. Mixed 	<p>Correct answer is _____</p>

<p>11. The patient after the gastric resection had derangements of digestion processes. Which regulation mechanism change from the named below results in derangements development in this case?</p> <ul style="list-style-type: none"> A. Complex-reflex B. Humoral C. Neurohumoral D. Unconditioned-reflex E. Nervous 	<p>Correct answer is _____</p>
<p>12. During the examination of acid-forming stomach function the patient in fasting condition had the following parameters: total acidity is 120 mmole/l, pH – 0.9. What from the named below corresponds to estimation of acid-forming function to the greatest degree?</p> <ul style="list-style-type: none"> A. Normal secretion B. Submaximal secretion C. Hyposecretion D. Hypersecretion E. Achylia 	<p>Correct answer is _____</p>
<p>13. At artificial feeding of infants the cow milk is used which is necessarily diluted. Which from the listed features of infants' gastric digestion is the reason of diluted milk use?</p> <ul style="list-style-type: none"> A. Low acidity B. High activity of lipase C. Low activity of pepsin D. Small stomach volume E. Low acid discharge 	<p>Correct answer is _____</p>
<p>14. In clinic the research of gastric maximal secretion is carried out using gastrointestinal hormones as the secretion stimulators. What from the listed is the most appropriate to use for this purpose?</p> <ul style="list-style-type: none"> A. Gastricsin B. Secretin C. Motilin D. Cholecystokinin E. Pentagastrin 	<p>Correct answer is _____</p>
<p>15. Exocrinous activity of pancreas is in formation and discharge into duodenum of the juice containing zymogens. What from the listed causes zymogens' activation of pancreas juice?</p> <ul style="list-style-type: none"> A. Hydrochloric acid B. Histamine C. Chemotrypsin D. Enterokinase E. Trypsin 	<p>Correct answer is _____</p>

<p>16. The patient has entered in gastroenterological department with the complaint for diarrhea which appears after rich and fatty food intake. What from the named can be the most probable reason of such condition development?</p> <ul style="list-style-type: none"> A. Low activity of phospholipase B. Low activity of trypsin C. High activity of lipase D. Cholepoiesis increase E. Biliation decrease 	<p>Correct answer is _____</p>
<p>17. Often gastroesophagal reflux (regurgitation of food from a stomach into esophagus) is the gastrointestinal tract motor disorders. What from the named forwards the development of such condition to the greatest degree?</p> <ul style="list-style-type: none"> A. Pyloric sphincter tonus decrease B. Pyloric sphincter tonus increase C. Inferior esophageal sphincter tonus increase D. Inferior esophageal sphincter tonus decrease E. Cardia tonus increase 	<p>Correct answer is _____</p>
<p>18. The patient has the low acidity of gastric juice. What from the listed functions changes in the greater degree at the lack of the given component?</p> <ul style="list-style-type: none"> A. Activation of lipolysis B. Activation of glycolysis C. Activation of proteolysis D. Activation of glycogenolysis E. Motility depression 	<p>Correct answer is _____</p>
<p>19. In conditions of environment temperature jump the person can experience thermal diarrhea. What from the listed mechanisms forwards the development of this condition?</p> <ul style="list-style-type: none"> A. Acid formation increase B. Biliation decrease C. Biliation increase D. Cholepoiesis increase E. Water and salts absorption decrease 	<p>Correct answer is _____</p>
<p>20. For clinical research of the patient's saliva it is necessary to define its digesting ability. What substrate is it necessary to use during this research?</p> <ul style="list-style-type: none"> A. Albumin B. Globulin C. Fibrinogen D. Glucose E. Amylum 	<p>Correct answer is _____</p>

<p>21. A patient with brain bloodstream disorder has got difficulties with swallowing; he can choke over while eating liquid food. What part of the brain is damaged?</p> <ul style="list-style-type: none"> A. Medulla B. Thalamencephalon C. Cerebellum D. Midbrain E. Cervical part of the spinal medulla 	<p>Correct answer is _____</p>
<p>22. An experimental dog by means of stomach tube was given 150 ml of meat broth. The concentration of which of the below mentioned substances will be increased in animal's blood?</p> <ul style="list-style-type: none"> A. Neurotensin B. Vasoactive intestinal polypeptide C. Somatostatin D. Gastrin E. Insulin 	<p>Correct answer is _____</p>
<p>23. Because of present gallstone in the common bile duct, a patient has no bile excretion into duodenum. What disorder can it cause?</p> <ul style="list-style-type: none"> A. Carbohydrates digestion B. Proteins digestion C. Lipids digestion D. Carbohydrates absorption E. Proteins absorption 	<p>Correct answer is _____</p>
<p>24. Secretion of which gastrointestinal hormones is primarily decreased in patient with removed duodenum?</p> <ul style="list-style-type: none"> A. Histamine B. Gastrin C. Gastrin and histamine D. Cholecystokinin and secretin E. Neurotensin 	<p>Correct answer is _____</p>
<p>25. A 57-year-old patient was admitted to the gastroenterological department with suspicion on Zollinger-Ellison syndrome because of rapid increase of gastrin level in the blood serum. What disorder of the secretory function of the stomach is the most likely?</p> <ul style="list-style-type: none"> A. Hypoacid hypersecretion B. Hyperacid hyposecretion C. Hyperacid hypersecretion D. Hypoacid hyposecretion E. Achylia 	<p>Correct answer is _____</p>

<p>26. A 30-year-old woman was diagnosed with insufficiency of exocrine function of pancreas. Hydrolysis of what nutrients will be disturbed?</p> <p>A. Proteins B. Fats, carbohydrates C. Proteins, carbohydrates D. Proteins, fats E. Proteins, fats, carbohydrates</p>	<p>Correct answer is _____</p>
<p>27. A 2-year-old child has got intestinal dysbacteriosis, which resulted in hemorrhagic syndrome. What is the most likely cause of hemorrhage of the child?</p> <p>A. Fibrinogen deficiency B. Hypocalcemia C. PP hypovitaminosis D. Vitamin K deficiency E. Activation of tissue thromboplastin</p>	<p>Correct answer is _____</p>
<p>28. Examination of a 35 year old patient revealed high acidity of gastric juice. What receptors should be blocked in order to reduce it?</p> <p>A. α_1-adrenoreceptors B. β_2-adrenoreceptors C. β_1-adrenoreceptors D. α_2-adrenoreceptors E. Histamine</p>	<p>Correct answer is _____</p>
<p>29. After consumption of rich food a patient has nausea and heartburn, steatorrhea. This condition might be caused by:</p> <p>A. Increased lipase secretion B. Bile acid deficiency C. Amylase deficiency D. Disturbed phospholipase synthesis E. Disturbed trypsin synthesis</p>	<p>Correct answer is _____</p>
<p>30. A patient ill with chronic gastritis went for endogastric pH-metry that allowed to reveal decreased acidity of gastric juice. It is indicative of diminished function of the following cells:</p> <p>A. Parietal exocrinocytes B. Accessory cells C. Endocrinocytes D. Cervical cells E. Chief exocrinocytes</p>	<p>Correct answer is _____</p>
<p>31. Surgical removal of a part of stomach resulted in disturbed absorption of vitamin B₁₂, it is excreted with feces. The patient was diagnosed with anemia. What factor is necessary for absorption of this vitamin?</p> <p>A. Gastrin B. Folic acid C. Hydrochloric acid D. Gastromucoprotein E. Pepsin</p>	<p>Correct answer is _____</p>

<p>32. A patient underwent an operation on account of gall bladder excision that resulted in obstruction of Ca^{2+} absorption through the bowels wall. What vitamin will stimulate this process?</p> <p>A. C B. B₁₂ C. D₃ D. K E. PP</p>	<p>Correct answer is _____</p>
<p>33. A patient has a disturbed absorption of fat hydrolysates. It might have been caused by a deficit in the small intestine cavity:</p> <p>A. Of bile pigments B. Of lipolytic enzymes C. Of bile acids D. Of sodium ions E. Of liposoluble vitamins</p>	<p>Correct answer is _____</p>
<p>34. A 60-year-old patient presents with weakened peristaltic activity of the bowels. Which of the following foodstuffs would stimulate peristalsis most of all?</p> <p>A. Meat B. White bread C. Brown bread D. Lard E. Tea</p>	<p>Correct answer is _____</p>
<p>35. A patient consumed a lot of reach in proteins food that caused increase of rate of proteolytic enzymes of pancreatic juice. It is also accompanied by increase of rate of the following enzyme:</p> <p>A. Trypsin B. Pepsin C. Enterokinase D. Gastricsin E. Renin</p>	<p>Correct answer is _____</p>
<p>36. In course of an experiment <i>chorda tympani</i> of an animal was being stimulated by electric current, as a result the parotid duct excreted:</p> <p>A. A lot of viscous saliva B. A lot of fluid saliva C. A small quantity of fluid saliva D. A small quantity of viscous saliva E. Saliva wasn't excreted</p>	<p>Correct answer is _____</p>
<p>37. A man consumes dry food. What salivary glands secrete most of all?</p> <p>A. Submandibular B. Sublingual C. Parotides D. Buccal E. Palatine</p>	<p>Correct answer is _____</p>

<p>38. In course of an experiment a nerve is being stimulated by electric impulses. As a result of it sublingual and submaxillary glands discharge some dense viscous saliva. What nerve is being stimulated?</p> <p>A. <i>N. glossopharyngeus</i> B. <i>N. facialis</i> C. <i>N. trigeminus</i> D. <i>N. vagus</i> E. <i>N. sympathicus</i></p>	<p>Correct answer is _____</p>
<p>39. Alterations in protein digestion in the small intestine are induced by the impairment of trypsin and chymotrypsin activity. What enzyme deficiency may be the cause of this impairment?</p> <p>A. Lipase B. Maltase C. Pepsin D. Amylase E. Enterokinase</p>	<p>Correct answer is _____</p>
<p>40. A 36-year-old male patient has malabsorption of sodium ions from the intestinal lumen into blood. At the same time, absorption of the following substances remains unchanged:</p> <p>A. Proteins B. Fats C. Chlorides D. Carbohydrates E. Water</p>	<p>Correct answer is _____</p>
<p>41. A patient consulted a doctor about difficult chewing. On the examination he was found to have the atrophy of the right temporal muscle and masticatory muscles. Upon opening the mouth, the patient's jaw deviates to the left. What nerve is affected?</p> <p>A. Maxillary B. Inferior alveolar C. Facial D. Mandibulohyoid E. Motor portion of the mandibular nerve</p>	<p>Correct answer is _____</p>
<p>42. Stimulation of peripheral segment of <i>Chorda tympani</i> in an experimental animal resulted in the discharge of the following secretion from the parotid salivary fistula:</p> <p>A. A lot of viscose saliva B. A lot of liquid saliva C. A small amount of viscose saliva D. A small amount of liquid saliva E. There is no saliva</p>	<p>Correct answer is _____</p>

<p>43. An animal has been given a weak solution a hydrochloric acid introduced into the duodenum through a tube. Which hormone concentration will increase in the animal?</p> <ul style="list-style-type: none"> A. Neurotensin B. Glucagon C. Cholecystokinin (pancreozymin) D. Secretin E. Gastrin 	<p>Correct answer is _____</p>
<p>44. A 48-year-old female patient with history of cholilithiasis has recurring steatorrhea. What vitamin deficiency may develop as a complication of the current disease?</p> <ul style="list-style-type: none"> A. <i>PP</i> B. <i>K</i> C. <i>B₆</i> D. <i>B₁₂</i> E. <i>C</i> 	<p>Correct answer is _____</p>
<p>45. 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:</p> <ul style="list-style-type: none"> A. Gastric juice B. Intestinal juice C. Pancreatic juice D. Saliva E. Bile 	<p>Correct answer is _____</p>
<p>46. A 30-year-old woman has subnormal concentration of enzymes in the pancreatic juice. This might be caused by the hyposecretion of the following gastrointestinal hormone:</p> <ul style="list-style-type: none"> A. Somatostatin B. Secretin C. Cholecystokinin-pancreozymin D. Gastro-inhibiting peptide E. Vaso-intestinal peptide 	<p>Correct answer is _____</p>
<p>47. Examination of a patient revealed that dental hypoplasia was caused by hypovitaminosis of vitamins <i>A</i> and <i>D</i>. These vitamins were administered perorally but they didn't have any medicinal effect. What is the probable cause of disturbed vitamin assimilation?</p> <ul style="list-style-type: none"> A. Achylia B. Achlorhydria C. Bile acid deficiency D. Hypochlorhydria E. Hyperchlorhydria 	<p>Correct answer is _____</p>

<p>48. During an acute experiment some of diluted solution of hydrochloric acid was injected into the duodenal cavity of an experimental animal. This will result in hypersecretion of the following hormone:</p> <ul style="list-style-type: none"> A. Histamine B. Gastrin C. Motilin D. Neurotensin E. Secretin 	<p>Correct answer is _____</p>
<p>49. A man is eating dry food. Which salivary glands secrete the largest amount of saliva in this case?</p> <ul style="list-style-type: none"> A. Submandibular B. Sublingual C. Parotid D. Buccal E. Palatine 	<p>Correct answer is _____</p>
<p>50. In order to administer general health improving therapy a parodontist intends to study factors of nonspecific resistance of saliva and mucous secretion. Which of the following factors of nonspecific resistance should be studied in the first line?</p> <ul style="list-style-type: none"> A. Secretory IgA B. Properdin C. Interferon D. Complement E. Lysozyme 	<p>Correct answer is _____</p>
<p>51. Roentgenologically confirmed obstruction of common bile duct resulted in preventing bile from inflowing to the duodenum. What process is likely to be disturbed?</p> <ul style="list-style-type: none"> A. Protein absorption B. Carbohydrate hydrolysis C. Fat emulgation D. Hydrochloric acid secretion in stomach E. Salivation inhibition 	<p>Correct answer is _____</p>
<p>52. After examining the patient the doctor recommended him to eliminate rich meat and vegetable broth, spices, smoked products from the diet, since the patient was found to have:</p> <ul style="list-style-type: none"> A. Reduced secretion of hydrochloric acid by the stomach glands B. Increased secretion of hydrochloric acid by the stomach glands C. Reduced motility of the gastrointestinal tract D. Reduced salivation E. Biliary dyskinesia 	<p>Correct answer is _____</p>

<p>53. A patient complains of frequent diarrheas, especially after consumption of rich food, weight loss. Laboratory examination revealed steatorrhea; his feces were hypocholic. What might have caused such condition?</p> <ul style="list-style-type: none"> A. Unbalanced diet B. Lack of pancreatic lipase C. Lack of pancreatic phospholipase D. Obturation of biliary tracts E. Inflammation of mucous membrane of small intestine 	<p>Correct answer is _____</p>
<p>54. 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?</p> <ul style="list-style-type: none"> A. Lipase B. Gastrin C. Secretin D. Renin E. Pepsin 	<p>Correct answer is _____</p>
<p>55. A 30-year-old male patient with acute pancreatitis has been found to have a disorder of cavitory protein digestion. The reason for such condition can be the hyposynthesis and hyposecretion of the following enzyme:</p> <ul style="list-style-type: none"> A. Pepsin B. Dipeptidase C. Trypsin D. Lipase E. Amylase 	<p>Correct answer is _____</p>
<p>56. 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:</p> <ul style="list-style-type: none"> A. Cellulose B. Carbohydrates C. Fats D. Proteins E. Lactose 	<p>Correct answer is _____</p>
<p>57. 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:</p> <ul style="list-style-type: none"> A. Maltase B. Isomaltase C. Lactase D. Invertase E. Amylase 	<p>Correct answer is _____</p>

<p>58. A patient has normally coloured stool including a large amount of free fatty acids. The reason for this is a disturbance of the following process:</p> <ul style="list-style-type: none"> A. Biliary excretion B. Fat hydrolysis C. Choleresis D. Fat absorption E. Lipase secretion 	<p>Correct answer is _____</p>
<p>59. A 35-year-old man with peptic ulcer disease has undergone antrectomy. After the surgery secretion of the following gastrointestinal hormone will be disrupted the most:</p> <ul style="list-style-type: none"> A. Histamine B. Gastrin C. Neurotensin D. Cholecystokinin E. Secretin 	<p>Correct answer is _____</p>
<p>60. A patient is diagnosed with atrophic gastritis attended by deficiency of Castle's intrinsic factor. What type of anemia does the patient have?</p> <ul style="list-style-type: none"> A. B₁₂-deficiency anemia B. Iron refractory anemia C. Iron-deficiency anemia D. Protein-deficiency anemia E. Hemolytic anemia 	<p>Correct answer is _____</p>
<p>61. Due to the blockage of the common bile duct (which was radiographically confirmed), the biliary flow to the duodenum was stopped. We should expect the impairment of:</p> <ul style="list-style-type: none"> A. Fat emulsification B. Protein absorption C. Carbohydrate hydrolysis D. Secretion of hydrochloric acid E. Salivation inhibition 	<p>Correct answer is _____</p>
<p>62. Protective function of saliva is based on several mechanisms, including the presence of enzyme that has bactericidal action and causes lysis of complex capsular polysaccharides of staphylococci and streptococci. Name this enzyme.</p> <ul style="list-style-type: none"> A. Alpha-amylase B. Lysozyme C. oligo-1,6-glucosidase D. Collagenase E. Beta-glucuronidase 	<p>Correct answer is _____</p>

Physiology of energy exchange and thermoregulation

<p>1. The population of the countries with hot climate and low humidity of air don't have hyperthermia. What from the listed factors of thermal acclimatization is the leading one?</p> <ul style="list-style-type: none">A. ConvectionB. Heat conductionC. Pulmonary ventilationD. EvaporationE. Behavioral adaptation	Correct answer is _____
<p>2. The patient's body weight increase in relation to normative one is corrected with protein diet. What from the listed processes will cause mass normalization in these conditions?</p> <ul style="list-style-type: none">A. Carbohydrate depots emaciationB. Power inputs increaseC. Glycolysis depressionD. Fat depot emaciationE. Maximal oxygen consumption	Correct answer is _____
<p>3. After intensive muscular work respiratory coefficient exceeds 1.0. What from the named factors causes increase of this parameter?</p> <ul style="list-style-type: none">A. Oxygen debtB. HyperventilationC. Lactic acid accumulationD. HypoxiaE. Hypoxemia	Correct answer is _____
<p>4. At definition of the basal metabolism of two patients of one age and with identical body weight the increase of this parameter is fixed at the patient who is higher. What from the listed factors is the principal cause of the detected difference?</p> <ul style="list-style-type: none">A. Cellular metabolismB. Activity of hormonal linkC. The body surface areaD. Maximal oxygen consumptionE. Oxygenation of blood	Correct answer is _____
<p>5. In a sauna at low humidity the temperature of air achieves 100°C. Which from the specified thermoregulation mechanisms protects the person from overheating?</p> <ul style="list-style-type: none">A. Pulmonary ventilationB. Thermal radiationC. Heat conductionD. ConvectionE. Evaporation of sweat	Correct answer is _____

<p>6. Which from the given parameters reflects energy metabolism intensity?</p> <ul style="list-style-type: none"> A. Quantity of consumed oxygen B. Quantity of emitted heat C. Quantity of the discharged water D. Composition of the food taken E. Quantity of discharged CO₂ 	<p>Correct answer is _____</p>
<p>7. Why are carbohydrates the first to be oxidized in the organism during physical exercise?</p> <ul style="list-style-type: none"> A. Carbohydrates during oxidation in the organism give the greatest respiratory coefficient B. For oxidation of 1 gram of carbohydrates the least quantity of O₂ is used C. Carbohydrates have the least size of thermal equivalent D. Carbohydrates have the greatest thermal value E. For oxidation of 1 gram of carbohydrates the greatest quantity of O₂ is used 	<p>Correct answer is _____</p>
<p>8. What from the given complexes of normative conditions is used for definition of the basal metabolism?</p> <ul style="list-style-type: none"> A. Fasting, during sleep, sitting position, ambient temperature: + 20 °C B. Fasting, wakefulness, lying position, ambient temperature: +10 °C C. Fasting, wakefulness, lying position, ambient temperature: +18 - +20 °C D. In 12 hours after a meal, sitting, wakefulness condition, ambient temperature: +20 °C E. In 1 hour after a meal, sitting, wakefulness condition, at temperature of physiological comfort 	<p>Correct answer is _____</p>
<p>9. What from the specified processes provides isothermia?</p> <ul style="list-style-type: none"> A. Processes of chemical thermoregulation B. Processes of physical thermoregulation C. Level of oxidizing processes in the organism D. Activity of exothermal reactions in the organism E. Optimum ratio of heat production and thermolysis 	<p>Correct answer is _____</p>
<p>10. What from the listed thermoregulation processes are activated in conditions of ambient temperature drop?</p> <ul style="list-style-type: none"> A. Physical thermoregulation B. Pulmonary ventilation and sweat secretion C. Increase of muscle performance D. Chemical thermoregulation E. Heat conduction increase 	<p>Correct answer is _____</p>

<p>11. A young man increased his energy inputs from 500 to 2000 kJ per hour. What from the suggested can cause it?</p> <ul style="list-style-type: none"> A. Physical activity B. Rising of external temperature C. Food taking D. Change of sleeping for waking E. Mental activity 	<p>Correct answer is _____</p>
<p>12. Buffer capacity of blood was decreased in the worker due to exhausting muscular work. Entry of what acid substance to the blood can this state be explained?</p> <ul style="list-style-type: none"> A. Pyruvate B. Lactate C. 3-phosphoglycerate D. 1,3-bisphosphoglycerate E. α-ketoglutarate 	<p>Correct answer is _____</p>
<p>13. Respiratory coefficient was studied in the patient who strictly kept certain diet for 10 days. It was determined that it is 1. What diet does the patient follow?</p> <ul style="list-style-type: none"> A. With domination of carbohydrates B. Mixed C. With domination of proteins and fat D. With domination of fat and carbohydrates E. With domination of proteins and carbohydrates 	<p>Correct answer is _____</p>
<p>14. What heat transfer mechanism is the most effective while the man being at 80% moisture and the temperature +35°C?</p> <ul style="list-style-type: none"> A. Evaporation B. – C. Radiation D. Heat conduction E. Convection 	<p>Correct answer is _____</p>
<p>15. The energy inputs of a healthy man have been measured. In what position was the patient if his energy inputs were less than the main exchange?</p> <ul style="list-style-type: none"> A. Nervous exertion B. Easy work C. Sleep D. Rest E. Calmness 	<p>Correct answer is _____</p>
<p>16. A lightly dressed man is standing in a room, air temperature is +14°C, windows and doors are closed. In what way does he emit heat the most actively?</p> <ul style="list-style-type: none"> A. Perspiration B. Heat conduction C. Heat radiation D. Convection E. Evaporation 	<p>Correct answer is _____</p>

<p>17. A human body cools in water much faster than in the air. What way of heat emission in water is much more efficient?</p> <p>A. Convection B. Heat radiation C. Heat conduction D. Sweat evaporation E. –</p>	<p>Correct answer is _____</p>
<p>18. An infant has apparent diarrhea resulting from improper feeding. One of the main diarrhea effects is plentiful excretion of sodium bicarbonate. What form of acid-base balance disorder is the case?</p> <p>A. Metabolic alkalosis B. Respiratory alkalosis C. No disorders of acid-base balance will be observed D. Respiratory acidosis E. Metabolic acidosis</p>	<p>Correct answer is _____</p>
<p>19. Workers of a hothouse farm work under conditions of unfavorable microclimate: air temperature is +37°C relative humidity is 90%, air speed is 0,2 m/s. The way of heat emission under these conditions will be:</p> <p>A. Radiation B. Convection C. Heat conduction D. All the ways E. Evaporation</p>	<p>Correct answer is _____</p>
<p>20. 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?</p> <p>A. Evaporation B. Radiation C. Heat conduction D. Convection E. Convection and conduction</p>	<p>Correct answer is _____</p>
<p>21. 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:</p> <p>A. 5-6 p.m. B. 7-8 a.m. C. 10-12 a.m. D. 2-3 p.m. E. 3-4 a.m.</p>	<p>Correct answer is _____</p>

<p>22. A man's energy consumption is measured on an empty stomach, in lying position, under conditions of physical psychical rest, at comfortable temperature. At what time will the energy consumption be the lowest?</p> <p>A. At 3-4 o'clock a.m. B. At 7-8 o'clock a.m. C. At 10-12 o'clock a.m. D. At 2-4 o'clock p.m. E. At 5-6 o'clock p.m.</p>	<p>Correct answer is _____</p>
<p>23. A man left a conditioned premise and went outside. The outside temperature was +40°C, the air moisture 60%.What way of heat emission will be mostly involved in this case?</p> <p>A. Sweat evaporation B. Convection C. Radiation D. Conduction E. –</p>	<p>Correct answer is _____</p>
<p>24. In a hot weather, the microclimate in hot rooms is often normalized by fans. At the same time heat radiation from the human body increases through:</p> <p>A. Convection B. Heat conduction C. Conduction D. Radiation E. Evaporation</p>	<p>Correct answer is _____</p>
<p>25. In a young man during exercise, the minute oxygen uptake and carbon dioxide emission equaled to 1000 ml. what substrates are oxidized in the cells of the body?</p> <p>A. Proteins B. Carbohydrates C. Fats D. Carbohydrates and proteins E. Carbohydrates and fats</p>	<p>Correct answer is _____</p>
<p>26. 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:</p> <p>A. Heat radiation B. Heat conduction C. - D. Convection E. Evaporation</p>	<p>Correct answer is _____</p>

<p>27. 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%?</p> <ul style="list-style-type: none"> A. Liquid evaporation B. Thermal conduction C. Heat radiation D. Convection E. – 	<p>Correct answer is _____</p>
<p>28. Power inputs of a man were measured. In what state was this man if his power inputs were lower than basal metabolism?</p> <ul style="list-style-type: none"> A. Relaxation B. Simple work C. Rest D. Sleep E. Nervous tension 	<p>Correct answer is _____</p>
<p>29. Thermometry revealed that the temperature of the exposed skin is by 1-1,5 °C lower than the temperature of the adjacent areas covered with clothing from natural fabrics. The reason for this is that the clothes reduce the heat loss through:</p> <ul style="list-style-type: none"> A. Convection B. Radiation C. Conduction D. Evaporation E. – 	<p>Correct answer is _____</p>
<p>30. At the end of the working day a worker of a hot work shop has been delivered to a hospital. The patient complains of a headache, dizziness, nausea, general weakness. Objectively: the patient is conscious, his skin is hyperemic, dry, hot to the touch. Heart rate is of 130/min. Respiration is rapid, superficial. What disorder of thermoregulation is most likely to have occurred in this patient?</p> <ul style="list-style-type: none"> A. Increased heat transfer and reduced heat production B. Increased heat transfer and heat production C. Increased heat production with no changes to the heat transfer D. Reduced heat transfer E. Reduced heat production with no changes to the heat transfer 	<p>Correct answer is _____</p>
<p>31. It was determined that basal metabolic rate of a patient under study increased due value by 8%. This means that the intensity of energetic metabolism processes in this patient is:</p>	<p>Correct answer is _____</p>

<ul style="list-style-type: none"> A. Normal B. Moderately increased C. Moderately inhibited D. Essentially inhibited E. Essentially increased 	
<p>32. A month after a serious operation a 38-year-old patient has recovered and has now positive nitrogen balance. Urine of this patient may be found to have low concentration of the following nitrogen-containing substance:</p> <ul style="list-style-type: none"> A. Lactate B. 17-ketosteroids C. Urea D. Stercobilinogen E. Galactose 	<p>Correct answer is _____</p>
<p>33. When measuring power input of a person by the method of indirect calorimetry the following result was obtained: oxygen consumption is 1000 ml and carbon dioxide production is 800 ml per minute. The person under examination has the following respiratory coefficient:</p> <ul style="list-style-type: none"> A. 1,25 B. 1,0 C. 0,9 D. 0,84 E. 0,8 	<p>Correct answer is _____</p>
<p>34. For people adapted to high external temperature profuse sweating is not accompanied by loss of large volume of sodium chloride. This is caused by the effect the following hormone has on the perspiratory glands:</p> <ul style="list-style-type: none"> A. Cortisol B. Vasopressin C. Aldosterone D. Thyroxin E. Natriuretic 	<p>Correct answer is _____</p>

Physiology of excretion system

<p>1. Person felt thirsty after staying in heat for a long time. Signals of what receptors caused it first of all?</p> <ul style="list-style-type: none"> A. Baroreceptors of aortic arch B. Osmoreceptors of hypothalamus C. Osmoreceptors of the liver D. Sodium receptors of hypothalamus E. Glucoreceptors of hypothalamus 	<p>Correct answer is _____</p>
<p>2. Shock and sings of acute renal failure (ARF) developed in the patient due to severe injury. What is the leading cause of development of ARF in the case?</p> <ul style="list-style-type: none"> A. Decreased oncotic blood pressure B. Decreased arterial pressure C. Increased pressure in the nephron capsule D. Increased pressure in the renal arteries E. Urine excretion violation 	<p>Correct answer is _____</p>
<p>3. During some diseases the patient experiences glucosuria. What is the possible reason of this phenomenon?</p> <ul style="list-style-type: none"> A. Mechanisms of secondary active transport are broken B. The level of glucose in blood is higher than 10 millimole/l C. The permeability of the renal filter increases D. ADH Level in blood increases E. Aldosterone secretion decreases 	<p>Correct answer is _____</p>
<p>4. For definition of effective renal plasma flow the substance is used which is freely filtrated, does not reabsorb and is completely secreted. What substance clearance is calculated for ERP definition?</p> <ul style="list-style-type: none"> A. Insulin B. Inulin C. PAG D. Urea E. Creatinine 	<p>Correct answer is _____</p>
<p>5. The patient with diabetes had chronic renal failure, with the development of uremia, glomerular filtration rate decreased up to 8 ml/min. What was the reason of the GFR drop?</p> <ul style="list-style-type: none"> A. Nephron number decrease through the development of nephrosclerosis B. Afferent arteriole spasm C. Osmotic blood pressure increase D. Systemic arterial pressure decrease E. Ureteral obstruction with stone 	<p>Correct answer is _____</p>

<p>6. During the person's ageing gradual retrogression of the metabolic processes supplying energy in tissues is observed. What stage of uropoiesis will suffer in this case first of all?</p> <ul style="list-style-type: none"> A. Concentration B. Filtration C. Secretion D. Reabsorption E. Synthesis 	<p>Correct answer is _____</p>
<p>7. During laboratory examination of the patient sugar in urine is detected. Glucose concentration in blood plasma is within the limits of physiological norm. What processes derangements are observed in this case?</p> <ul style="list-style-type: none"> A. Glomerular filtration B. Tubular reabsorption C. Tubular secretion D. Insulin secretions E. Aldosterone secretions 	<p>Correct answer is _____</p>
<p>8. At acute cardiovascular collapse the urine formation stops, anuria occurs. What from the listed results in anuria development?</p> <ul style="list-style-type: none"> A. Oncotic blood pressure decrease B. Water reabsorption increase in tubules C. Hydrostatic pressure of primary urine increase D. Derangements of the renal filter work E. ABP drop and GFR decrease 	<p>Correct answer is _____</p>
<p>9. At head trauma in and around supraoptical and paraventricular nuclei of hypothalamus polyuria occurs. What results in development of the given phenomenon?</p> <ul style="list-style-type: none"> A. ADH secretion decrease B. ADH secretion increase C. Renin secretion increase D. Sodium uretine peptide secretion decrease E. Aldosterone secretion increase 	<p>Correct answer is _____</p>
<p>10. At the decrease of systemic ABP the decrease of diuresis is observed. What mechanism derangements result in development of the given phenomenon?</p> <ul style="list-style-type: none"> A. Urine concentration in receiving tubules B. Tubular reabsorption C. Tubular secretion D. Glomerular filtration E. Urine flow from urinary bladder 	<p>Correct answer is _____</p>

<p>11. Glomerular filtration rate (GFR) increased by 20% due to prolonged starvation of the person. The most evident cause of filtration changes under these conditions is:</p> <ul style="list-style-type: none"> A. Increase of filtration coefficient B. Increase of penetration of the renal filter C. Increase of systemic blood pressure D. Decrease of oncotic pressure of blood plasma E. Increase of renal plasma stream 	<p>Correct answer is _____</p>
<p>12. The low specific gravity of the secondary urine (1002) was found out in the sick person. What is the most distant part of nephron where concentration of secondary urine takes place?</p> <ul style="list-style-type: none"> A. In the nephron's glomerulus B. In ascending part of loop of Henle C. In distal tubule of nephron D. In proximal tubule of nephron E. In the collecting duct 	<p>Correct answer is _____</p>
<p>13. A 16 year-old patient got numerous traumas in automobile accident. Now the patient is having a shock. AP - 80/60 mm Hg, daily urine volume 60-80 ml. What pathogenic mechanism leads to kidneys function violation?</p> <ul style="list-style-type: none"> A. Increased vasopressin blood concentration B. Decreased hydrostatic pressure in glomerular capillaries C. Trauma of the urinary bladder D. Increased osmotic pressure in glomerular capillaries E. Increased pressure in Bowman's capsule 	<p>Correct answer is _____</p>
<p>14. A 58-year-old patient with acute cardiac insufficiency has decreased volume of daily urine - oliguria. What is the mechanism of this phenomenon?</p> <ul style="list-style-type: none"> A. Decreased number of functioning glomerules B. Drop of oncotic blood pressure C. Rise of hydrostatic blood pressure in capillaries D. Reduced permeability of renal filter E. Decreased glomerular filtration 	<p>Correct answer is _____</p>
<p>15. Examination of a patient revealed hyperkalemia and hyponatremia. Low secretion of which hormone may cause such changes?</p> <ul style="list-style-type: none"> A. Natriuretic B. Parathormone C. Cortisol D. Aldosteron E. Vasopressin 	<p>Correct answer is _____</p>

<p>16. A driver who got a trauma in a road accident and is shocked has reduction of daily urinary output down to 300 ml. What is the main pathogenetic factor of such diuresis change?</p> <p>A. Decreased number of functioning glomerules B. Increased vascular permeability C. Secondary hyperaldosteronism D. Drop of arterial pressure E. Drop of oncotic blood pressure</p>	<p>Correct answer is _____</p>
<p>17. A patient has a decreased vasopressin synthesis that causes polyuria and as a result of it evident organism dehydration. What is the mechanism of polyuria development?</p> <p>A. Reduced tubular reabsorption of protein B. Reduced tubular reabsorption of Na ions C. Reduced glucose reabsorption D. Reduced tubular reabsorption of water E. Acceleration of glomerular filtration</p>	<p>Correct answer is _____</p>
<p>18. A patient with diminished excretory function of kidneys has bad breath. What substance which is excessively excreted by salivary glands is the main cause of this occurrence?</p> <p>A. Alpha-amylase B. Lysozyme C. Phosphatase D. Urea E. Mucin</p>	<p>Correct answer is _____</p>
<p>19. Glucose concentration in a patient's blood is 15 mmole/l (reabsorption threshold is 10 mmole/l). What effect can be expected?</p> <p>A. Diuresis reduction B. Reduced glucose reabsorption C. Reduced vasopressin secretion D. Reduced aldosterone secretion E. Glucosuria</p>	<p>Correct answer is _____</p>
<p>20. A 48 year old male patient was admitted to the hospital with acute attack of chronic glomerulonephritis. Examination revealed chronic renal failure. What is the cause of hyperazotemia by chronic renal failure?</p> <p>A. Reduction of glomerular filtration B. Reduction of tubular reabsorption C. Reduction of tubular excretion D. Disorder of protein metabolism E. Disorder of water-electrolytic metabolism</p>	<p>Correct answer is _____</p>
<p>21. A 23-year-old patient with diabetes mellitus has hyperglycemia at the rate 19 mmol/l which is clinically manifested by glycosuria, polyuria, polydipsia. Which is the listed below mechanisms is responsible for the development of glycosuria?</p> <p>A. Polydipsia</p>	<p>Correct answer is _____</p>

<p>B. Tissue dehydration C. Polyuria D. Non-enzymatic glycosylation of proteins E. Exceedence of glucose renal threshold</p>	
<p>22. In 52-year-old patient with chronic glomerulonephritis, the glomerular filtration rate (GFR) was reduced by 20 % compared to normal. What causes the decrease in GFR in patient with chronic renal failure?</p> <p>A. Obstruction of urinary tract B. Renal artery thrombosis C. Renal ischemia D. Reduced number of active nephrons E. Tubulopathy</p>	<p>Correct answer is _____</p>
<p>23. Arterial pH is 7,4; primary urine – 7,4; final urine – 5,8. Decrease in the pH of final urine is the result of the secretion of the following ions in the nephron tubules:</p> <p>A. Hydrogen carbonate ions B. Creatinine C. Hydrogen ions D. Potassium ions E. Urea</p>	<p>Correct answer is _____</p>
<p>24. A 29-year-old patient with pyelonephritis has been found to have hyposthenuria combined with polyuria. According to this data, what process is most likely to be disrupted?</p> <p>A. Glomerular filtration B. Tubular excretion C. – D. Tubular secretion E. Tubular reabsorption</p>	<p>Correct answer is _____</p>
<p>25. Examination of a patient revealed glycosuria and hyperglycemia. He complains of dry mouth, itchy skin, frequent urination, thirst. He has been diagnosed with diabetes mellitus. What is the cause of polyuria in this patient?</p> <p>A. Increased filtration pressure B. Increased plasma oncotic pressure C. Increased urine osmotic pressure D. Decreased plasma oncotic pressure E. Decreased cardiac output</p>	<p>Correct answer is _____</p>
<p>26. Urine analysis has shown high levels of protein and erythrocytes in urine. This can be caused by the following:</p> <p>A. Hydrostatic blood pressure in glomerular capillaries B. Renal filter permeability</p>	<p>Correct answer is _____</p>

<p>C. Hydrostatic pressure of primary urine D. Oncotic pressure of blood plasma E. Effective filter pressure</p>	
<p>27. A patient has insufficient blood supply to the kidneys, which has 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:</p> <p>A. Renin B. Angiotensinogen C. Angiotensin II D. Catecholamines E. Norepinephrine</p>	<p>Correct answer is _____</p>
<p>28. Diabetic nephropathy with uremia has developed in patient with pancreatic diabetes. The velocity of glomerular filtration is 9 ml/min. what mechanism of a decrease in glomerular filtration velocity and chronic renal failure development is most likely in the case of this patient?</p> <p>A. Reduction of active nephron mass B. Tissue acidosis C. Decrease in systemic arterial pressure D. Obstruction of nephron tubules with hyaline casts E. Arteriolar spasm</p>	<p>Correct answer is _____</p>
<p>29. A patient with massive burns developed acute renal insufficiency characterized by a significant and rapid deceleration of glomerular filtration. What is the mechanism of its development?</p> <p>A. Reduction of functioning nephron number B. Damage of glomerular filter C. Rise of pressure of tubular fluid D. Reduction of renal blood flow E. Renal artery embolism</p>	<p>Correct answer is _____</p>
<p>30. A child has an acute renal failure. What biochemical factor found in saliva can confirm this diagnosis?</p> <p>A. Increase in glucose concentration B. Decrease in glucose concentration C. Increase in urea concentration D. Increase in concentration of higher fatty acids E. Decrease in nucleic acid concentration</p>	<p>Correct answer is _____</p>
<p>31. Histologic specimen of the kidney demonstrates cells closely adjoined to the renal corpuscle in the distal convoluted tubule. Their basement membrane is extremely thin and has no folds. These cells sense the changes in sodium content of urine and influence renin secretion occurring in juxtaglomerular cells. Name these cells:</p> <p>A. Macula densa cells B. Glomerular capillary endothelial cells C. Mesangial cells</p>	<p>Correct answer is _____</p>

<p>D. Podocytes E. Juxtaglomerular cells</p>	
<p>32. A patient with a history of chronic glomerulonephritis presents with azotemia, oliguria, hypo- and isosthenuria, proteinuria. What is the leading factor in the pathogenesis of these symptoms development under chronic renal failure? A. Mass decrease of active nephrons B. Intensification of glomerular filtration C. Tubular hyposecretion D. Disturbed permeability of glomerular membranes E. Intensification of sodium reabsorption</p>	<p>Correct answer is _____</p>
<p>33. Due to the use of poor-quality measles vaccine for preventive vaccination, a 1-year-old child developed an autoimmune renal injury. The urine was found to contain macromolecular proteins. What process of urine formation was disturbed? A. Filtration B. Reabsorption C. Secretion D. Reabsorption and secretion E. Secretion and filtration</p>	<p>Correct answer is _____</p>
<p>34. According to the results of glucose tolerance test, the patient has no disorder of carbohydrate tolerance. Despite that, glucose is detected in the patients's urine (5 mmol/l). The patient has been diagnosed with renal diabetes. What renal changes cause glucosuria in this case? A. Decreased activity of glucose reabsorption enzymes B. Increased activity of glucose reabsorption enzymes C. Exceeded glucose reabsorption threshold D. Increased glucose secretion E. Increased glucose filtration</p>	<p>Correct answer is _____</p>
<p>35. A man presents with glomerular filtration rate of 180 ml/min, while norm is 125 ml/min. The likely cause of it is the decreased: A. Effective filtration pressure B. Plasma oncotic pressure C. Hydrostatic blood pressure in the glomerular capillaries D. Renal blood flow E. Permeability of renal filter</p>	