1) krok 2019
discipline:
topic:
On examination the patient was determined to have a strong, balanced, inert type of higher nervous activity according to Pavlov's classification. What temperament according to Hippocrates is it?
A. Sanguine
B. -
C. Melancholic
D. Choleric
E. Phlegmatic

2) krok 2019
discipline:
topic:
A patient, who has been subsisting exclusively on polished rice, has developed polyneuritis due to thiamine deficiency. What substance is an indicator of such avitaminosis, when it is excreted with urine?
A. Pyruvic acid
B. Uric acid
C. Phenyl pyruvate
D. Malate
E. Methylmalonic acid

3) krok 2019
discipline:
topic:
Ammonia is extremely toxic for human CNS. What is the main way of ammonia neutralization in the nervous tissue?
A. Transamination
B. Glutamine synthesis
C. Ammonium salts synthesis
D. Urea synthesis
. E. Formation of paired compounds

4) krok 2019
discipline:
topic:
After a trauma the patient has developed right-sided paralyses and disturbed pain sensitivity. On the left side no paralyses are observed, but pain and thermal sensitivity is disturbed. What is the cause of this condition?
A. Cerebellar injury
B. Unilateral right-side spinal cord injuiry
C. Motor cortex injury
D. Brainstem injury
E. Midbrain injury

5) krok 2019
discipline:
topic:
To treat the burns, a patient was prescribed a drug with antiseptic properties that are based on formation of atomic oxygen in the presence of organic substances. This drug has also an astringent (anti-inflammatory) effect due to formation of albuminates. Name this drug:
A. Ethyl alcohol
B. Hydrogen peroxide
C. Sodium bicarbonate
D. Chlorhexidine digluconate
E. Potassium permanganate

6) krok 2019
discipline:
topic:
In the course of an urgent surgery, the vermiform appendix of the patient was excised. The appendix was acutely distended and gray-black throughout its whole length. In the distal segment a defect of the appendix wall was detected, through which a foul-smelling gray-brown substance was being discharged from the appendix lumen. Histological analysis shows necrotization of the appendix wall with hemorrhagic foci; lumen of the mesenteric artery is filled with a trombus. What type of appendicitis is it?

A. Chronic
B. Acute phlegmonous
C. Acute simple
D. Acute gangrenous
E. Acute superficial

7) krok 2019
discipline:
topic:
A 30-year-old person has been stung by a bee. The stung area exhibits edema, hyperemia, and elevated temperature. What is the initial pathogenetic factor of inflammatory edema in this case?

A. Disturbed lymphatic efflux
B. Decrease of oncotic blood pressure
C. Increase of osmotic pressure in the inflammation focus
D. Increase of microvascular permeability
E. Increase of capillary blood pressure

8) krok 2019
discipline:
topic:
After hyperventilation an athlete developed a brief respiratory arrest. It occurred due to the following changes in the blood:

A. Increase of *CO2* and *O2* pressure
B. Decrease of *CO2* pressure
C. Increase of *CO2* pressure
D. Decrease of pH
E. Decrease of *O2* pressure

9) krok 2019
discipline:
topic:
During gastric resection the patient received mixed anesthesia with tubocurarin chloride muscle relaxant; to restore spontaneous respiration the patient received proserin. What pharmacological group does this drug belong to?

A. Muscarinic agonists
B. Cholinesterase inhibitors
C. Calcium channel blockers
D. Muscarinic antagonists
E. Angiotensin-converting-enzyme inhibitors

10) krok 2019
discipline:
topic:
A patient presents with an acute attack of cholelithiasis. Laboratory examination of the patient’s feces will show the following in this case:

A. Connective tissue

B. Partially digested cellulose
C. Starch granules
D. Negative reaction to stercobilin
E. Positive reaction to stercobilin

11) krok 2019
discipline:
topic:
To test donor blood for hepatitis Bantigens, it is necessary to use highly sensitive detection methods. What test should be used for this purpose?
A. Indirect hemagglutination
B. Solid-phase enzyme-linked immunosorbent assay
C. Complement binding
D. Immunoelectrophoresis
E. Indirect immunofluorescence

12) krok 2019
discipline:
topic:
After an X-ray examination of the tuberculosis clinic patient, he was diagnosed with tumor of the right lung. During operation the surgeon removed the middle lobe of the patient's right lung. This lobe includes:
A. *Segmentum anterius et segmentum apicale*
B. *Segmentum basale anterius et posterius*
C. *Segmentum lingualare superius et inferius*
D. *Segmentum apicale (superius) et segmentum basale mediale*
E. *Segmentum laterale et segmentum mediale*

13) krok 2019
discipline:
topic:
ABO blood group is being determined. Erythrocyte agglutination occurred when standard sera of group I and group II were introduced into the blood being analyzed, while group III serum caused no agglutination. What agglutinogens do these erythrocytes have?
A. A
B. B
C. D and C
D. **C**
E. A and B

14) krok 2019
discipline:
topic:
After a certain CNS structure had been destroyed in a test animal, this animal lost its orienting reflexes. What structure had been destroyed?
A. Substantia nigra
B. Lateral vestibular nuclei
C. Corpora quadrigemina
D. Red nuclei
E. Medial reticular nuclei

15) krok 2019
discipline:
topic:
Toxic damage to hepatic cells resulted in disruption of the patient's liver function and the patient developed edemas. What changes of blood plasma are the main cause of edema development?

A. Decrease of globulin content
B. Decrease of fibrinogen content
C. Increase of albumin content
D. Decrease of albumin content
E. Increase of globulin content

16) krok 2019
discipline:
topic:
A patient with peptic ulcer disease was prescribed famotidine. As a result his gastric juice acidity significantly decreased. What is the mechanism of action of this drug?
A. Inhibition of H^+, A"^{T}-ATPase activity
B. Histamine H2 receptor blockade
C. Blockade of histamine receptors in the sympathetic ganglia
D. Muscarinic Ml receptor blockade
E. Histamine HI receptor blockade

17) krok 2019
discipline:
topic:
A 9-month-old child presents with delayed tooth eruption, improper sequence of tooth eruption, and horizontal maxillary configuration (high-arched palate). Microscopically enamel mineralization pattern is irregular, enamel columns are wrinkled, some of them are vacuolated, predentin zones are widened, single denticles can be observed. What disease is it?
A. Gout
B. Early rickets
C. Osteomalacia
D. Late rickets
E. Hypervitaminosis *D*

18) krok 2019
discipline:
topic:
Urinalysis of a patient with acute cystitis shows leukocytes and a large number of gram-negative bacilli. Inoculation has resulted in the growth of mucous colonies that produce a green soluble pigment. What microorganism is the most likely cause of the patient's disorder?
A. *Escherihia coli*
B. *Pseudomonas aeruginosa*
C. *Klebsiella pneumoniae*
D. *Salmonella enteritidis*
E. *Proteus mirabilis*

19) krok 2019
discipline:
topic:
24 hours after an appendectomy the patient's blood test shows neutrophilic leukocytosis with a regenerative shift. What is the most likely mechanism of absolute leukocytosis development in the patient's peripheral blood?
A. Leukocyte redistribution
B. Deceleration of leukocyte migration to the tissues
C. Intensification of leukopoiesis
D. Decreased leukocyte disintegration
E. Immunity activation

20) krok 2019

discipline:
topic:
Long-term taking of medicines can affect cells of the liver. Particularly, it can cause marked hypertrophy of agranular endoplasmic reticulum due to the following function of this organelle:

A. **Protein synthesis**
B. **Nucleic acid synthesis**
C. **Detoxication of harmful substances**
D. **Intracellular digestion**
E. **Formation of maturation spindle**

21) krok 2019
discipline:
topic:
An experiment was conducted to measure the skin sensitivity threshold. What patches of skin have the highest sensitivity threshold?

A. Dorsal surface of the hand
B. Face
C. Back
D. Shoulder
E. Shin

22) krok 2019
discipline:
topic:
An oncology patient is to undergo a surgery on the descending colon. Name the main source of blood supply to this organ:

A. Middle colic artery
B. Inferior mesenteric artery
C. Splenic artery
D. Superior mesenteric artery
E. Celiac trunk

23) krok 2019
discipline:
topic:
A 48-year-old man is unconscious. He has a history of several syncopal episodes with convulsions. ECG shows deformed QRS complexes unconnected with P waves, atrial contractions are approximately 70/min., ventricular contractions - 25-30/min. Name the type of arrhythmia in this case:

A. Second-degree atrioventricular block
B. Complete atrioventricular block
C. Intraventricular block
D. First-degree atrioventricular block
E. Intraatrial block

24) krok 2019
discipline:
topic:
A patient with periodontitis of the lower molar came to the doctor. It was determined that the inflammatory process spread to the lymph nodes. What lymph nodes were the first to be affected by the inflammatory process?

A. Submental
B. Anterior cervical
C. Lateral cervical
D. Submandibular
E. Facial

25) krok 2019
discipline:
topic:
Examination of a surgically excised adrenal gland shows large cells that can be impregnated with a potassium dichromate solution. What hormone is being synthesized by these cells?

A. **Secretin**
B. **Aldosterone**
C. **Thyroxine**
D. **Cholecystokinin**
E. **Adrenaline**

26) krok 2019
discipline:
topic:
A patient with asphyxia after a brief respiratory arrest developed single infrequent respirations with passive expiration, after which he stopped breathing completely. What type of respiration was observed in this case?

A. Biot respiration
B. Kussmaul respiration
C. Gasping respiration
D. Cheyne-Stokes respiration
E. Apneustic respiration

27) krok 2019
discipline:
topic:
A histological specimen demonstrates a vessel with the wall that consists of endothelium, basement membrane, and loose connective tissue. This vessel belongs to the following type:

A. **Muscular vein**
B. **Lymph capillary**
C. **Non-muscular vein**
D. **Artery**
E. **Hemocapillary**

28) krok 2019
discipline:
topic:
A 45-year-old man with acute pneumonia was prescribed a penicillin antibiotic. However, when tested for personal tolerance to this antibiotic, he developed an allergic response. What drug should be prescribed for treatment instead?

A. Benzylpenicillin
B. Phenoxymethylpenicillin
C. Erythromycin
D. Bicillin-5
E. Ciprofloxacin

29) krok 2019
discipline:
topic:
During diabetes mellitus and starvation, the number of acetone bodies in blood increases. These bodies are used as a source of energy and are synthesized from the following substance:

A. Ketoglutarate
B. Malate
C. Acetyl-CoA
D. Citrate

E. Succinyl-CoA

30) krok 2019
discipline:
topic:
The bacteriological laboratory needs to prepare for analysis of materials that are suspected to be contaminated with spores of anthrax causative agent. What diagnostic preparation allows for quick detection of these spores?
A. Anti-anthrax immunoglobulin
B. Anti-anthrax fluorescent serum
C. Standard anthrax antigen
D. Enzyme-tagged immunoglobulin
E. Monoclonal antibodies to anthrax causative agent

31) krok 2019
discipline:
topic:
I.M. Siechenov has proven that a tired limb restores its working capacity faster if during its period of rest another limb works. It became a basis for the concept of:
A. Pessimum
B. Optimum
C. Fatigue
D. Active rest
E. Parabiosis

32) krok 2019
discipline:
topic:
A patient with obliterating endarteritis has undergone a ganglionic sympathectomy. Positive therapeutic effect of this surgery is associated with development of arterial hyperemia of the lower limbs, which can be described as:
A. Neuroparalytic
B. Metabolic
C. Working
D. Neurotonic
E. Reactive

33) krok 2019
discipline:
topic:
A patient has been suffering from bronchial asthma for 15 years. What changes in the patient's leukogram can be expected in this case?
A. Leukopenia
B. Basophilia
C. Eosinophilia
D. Leukocytosis
E. Left shift

34) krok 2019
discipline:
topic:
A student, whose educational achievements throughout the semester were poor, feels emotionally tense during the final test. What is the primary cause that induced the leading mechanism of emotional tension in this case?
A. Lack of energy and information

B. Lack of energy
C. Lack of time and energy
D. Lack of information
E. Lack of time

35) krok 2019
discipline:
topic:
A 30-year-old woman developed facial edemas. Examination detected proteinuria (5.87 g/L), hypoproteinemia, dysproteinemia, and hyperlipidemia. Such combination of signs is characteristic of:
A. Chronic kidney failure
B. Nephrotic syndrome
C. Acute kidney failure
D. Chronic pyelonephritis
E. Nephritic syndrome

36) krok 2019
discipline:
topic:
A 45-year-old woman exhibits no signs of diabetes mellitus, but her fasting blood glucose levels are elevated (7.2 mmol/L). What should be measured next?
A. Glucose tolerance
B. Blood urea
C. Residual blood nitrogen
D. Glycated hemoglobin
E. Urine glucose

37) krok 2019
discipline:
topic:
Examination of a patient shows decreased leukocyte and erythrocyte count and low hemoglobin levels in peripheric blood, as well as appearance of large cells (megaloblasts). What vitamin deficiency can cause these clinical presentations?
A. Riboflavin
B. Folic acid
C. Biotin
D. Niacin
E. Ascorbic acid

38) krok 2019
discipline:
topic:
What changes can be expected to occur in the isolated heart of a toad, if excessive amount of calcium chloride is introduced into its perfusate?
A. Increased cardiac contraction force
B. Increased cardiac contraction force and frequency
C. Diastolic cardiac arrest
D. Decreased cardiac contraction force
E. Increased cardiac contraction frequency

39) krok 2019
discipline:
topic:
A newborn presents with weak suckling, frequent vomiting, and hypotonia. Blood and urine citrulline are very high. What metabolic process is disturbed?

A. Glycolysis
B. Ornithine cycle
C. Tricarboxylic acid cycle
D. Gluconeogenesis
E. Cori cycle

40) krok 2019
discipline:
topic:
Patients with ischemic heart disease are usually prescribed small doses of aspirin. This drug inhibits synthesis of platelet aggregation activator, thromboxane A2. What substance is this activator synthesized from?
A. Homogentisic acid
B. Acetic acid
C. Glutamic acid
D. Malonic acid
E. Arachidonic acid

41) krok 2019
discipline:
topic:
Some diseases of large intestine lead to the changes in the quantitative ratio between mucosal epithelial cells. What cell types are normally predominant in the cryptal epithelium of the large intestine?
A. **Ciliated columnar epithelial cells**
B. **Goblet cells**
C. **Cells with acidophilic granules**
D. **Poorly differentiated cells**
E. **Endocrine cells**

42) krok 2019
discipline:
topic:
The parents with normal hearing have two daughters and a son, who are congenitally deaf. Their other 5 children are healthy. What is the pattern of deafness inheritance in this case?
A. Autosomal recessive
B. Autosomal dominant
C. X-linked recessive
D. Y-linked
E. X-linked dominant

43) krok 2019
discipline:
topic:
Disturbed activity of trypsin and chymotrypsin leads to disturbed protein breakup in the small intestine. Activity of these enzymes depends on the presence of the following factor:
A. Enterokinase
B. Pepsin
C. Na^+ salts
D. Hydrochloric acid
E. Bile acids

44) krok 2019
discipline:
topic:

A 30-year-old man with an incised wound on the plantar surface of the left foot was brought to the traumatology department. Lifting of the lateral side of the foot is limited. What muscle is likely to be functionally disturbed?

A. Triceps muscle of calf
B. Anterior tibial muscle
C. Soleus muscle
D. Flexor hallucis longus muscle
E. Peroneus longus muscle

45) krok 2019
discipline:
topic:
Hematologic study shows the following pattern: erythrocytes - 2,8 • 10^{12}/L, Hb - 80 g/L, color index - 0.85, reticulocytes - 0,1%, platelets -160 thousand per microliter, leukocytes - 60 ■ 10^{9}/L. Basocytes - 2%, eosinophils - 8%, promyelocytes - 5%, myelocytes - 5%, juvenile - 16%, stab neutrophils - 20%, segmented neutrophils - 34%, lymphocytes - 5%, monocytes - 5%. This clinical presentation indicates the following blood pathology:

A. Undifferentiated leukemia
B. Chronic myeloleukemia
C. Hemolytic anemia
D. Hypoplastic anemia
E. Acute myeloleukemia

46) krok 2019
discipline:
topic:
A 3-year-old child with elevated body temperature has taken aspirin and developed increased hemolysis of erythrocytes. In this case hemolytic anemia can be caused by congenital deficiency of the following enzyme:

A. Glucose 6-phosphatase
B. Glycerol-phosphate dehydrogenase
C. Glucose 6-phosphate dehydrogenase
D. Glycogen phosphorylase
E. Gamma-glutamyl transferase

47) krok 2019
discipline:
topic:
A 14-year-old adolescent has diphtheria. During the peak of the disease against the background of acute drop in body temperature and tachycardia the blood pressure is 70/50 mm Hg. What type of vascular tone disturbance is it?

A. Acute hypotension
B. Essential hypotension
C. Somatoform autonomic dysfunction
D. Chronic hypotension
E.

48) krok 2019
discipline:
topic:
A patient has elevated blood pressure due to increased vascular tone. To lower the blood pressure in this case it is necessary to prescribe the blockers of:

A. Muscarinic acetylcholine receptors
B. *a*- and /3-adrenoceptors
C. o-adrenoceptors
D. Histamine HI receptors

E. /3-adrenoceptors

49) krok 2019
discipline:
topic:
Collagenosis patients typically present with the processes of connective tissue destruction. The presence of these processes can be confirmed by the increase in:
A. Transaminase activity in the blood
B. Blood creatine and creatinine
C. LDH-isoenzyme activity in the blood
D. Blood oxyproline and oxylysine
E. Blood urates

50) krok 2019
discipline:
topic:
A 34-year-old man died in a comatose state. According to his family after a business trip to an African country he developed periodical jaundice attacks. Autopsy shows the following: dense enlarged spleen with slate-black pulp; enlarged plethoric liver, gray-black on section; cerebral gray matter is brown-gray; cerebral white matter contains numerous small hemorrhages. What infectious disease can be suspected?
A. Generalized herpetic infection
B. Malaria
C. Generalized cryptococcosis
D. Meningococcemia
E. Prion infection

51) krok 2019
discipline:
topic:
A patient with inoperable lung cancer accompanied by unbearable pain was prescribed an analgesic. Against the background of analgesic therapy the patient developed signs of intestinal obstruction. What analgesic could have caused this complication?
A. Morphine
B. Omnopon (Papaveretum)
C. Fentanyl
D. Promedol (Trimeperidine)
E. Analgin (Metamizole)

52) krok 2019
discipline:
topic:
Wernicke-Korsakoff syndrome often develops in chronic alcoholics, who have a low-vitamin diet. Decreased transketolase activity can be observed in the course of this disease. What vitamin deficiency causes this development?
A. Retinol
B. Cobalamin
C. Riboflavin
D. Thiamine
E. Niacin

53) krok 2019
discipline:
topic:
Regional lymph nodes surrounding an infected wound are enlarged. Histological examination shows increased number of macrophages, lymphocytes, and lymphatic follicles in the cortical layer of the lymph

nodes, as well as a large amount of plasma cells. What process in the lymph nodes is indicated by these histological changes?

A. Neoplastic aberration
B. Transplant rejection
C. Antigen stimulation
D. Acquired deficiency of lymphoid tissue
E. Congenital deficiency of lymphoid tissue

54) krok 2019
discipline:
topic:
Human genetic apparatus consists of approximately 30 thousand of genes, while the number of antibody variants can be as high as millions. What mechanism leads to formation of new genes that ensure the synthesis of such a number of antibodies?

A. DNA replication
B. DNA repair
C. Formation of Okazaki fragments
D. Genetic recombination
E. Gene amplification

55) krok 2019
discipline:
topic:
A patient was administered a certain drug for relief of cardiac rhythm disturbance. This drug can be used as a local anesthetic as well. Name this drug:

A. Diphenine (Phenytoin)
B. Anaesthesin (Benzocaine)
C. Cocaine hydrochloride
D. Dicain (Tetracaine)
E. Lidocaine hydrochloride

56) krok 2019
discipline:
topic:
Chronic overdose of glucocorticoids leads to the development of hyperglycemia in a patient. Name the process of carbohydrate metabolism that results in elevated blood glucose levels:

A. Aerobic glycolysis
B. Glycogenolysis
C. Pentose-phosphate pathway
D. Gluconeogenesis
E. Glycogenesis

57) krok 2019
discipline:
topic:
Ingestion of plants and mushrooms that grow along highways is dangerous due to risk of lead poisoning. What is the main source of environmental pollution with this chemical element?

A. Herbicides
B. Exhaust fumes
C. Sewage
D. Chemical fertilizers
E. Acid rains

58) krok 2019
discipline:

topic:
The surgeon noticed aggregated lymphoid nodules (Peyer's patches) on the intestinal mucosa. What portion of the intestine is it?

A. Duodenum
B. Jej unum
C. Cecum
D. Rectum
E. Ileum

59) krok 2019
discipline:
topic:
A young woman, a foreign student from Tehran, has made an appointment with the urologist. She complains of the sensation of heaviness in her lower abdomen and a small amount of blood being excreted with urine at the end of each urination. Microscopy of urine detects the presence of parasite eggs, approximately 140x70 micron in size, with a terminal spike. What diagnosis can be made by the infectious diseases specialist?

A. Opisthorchiasis
B. Paragonimiasis
C. Schistosomiasis
D. Dicroceliasis
E. Fascioliasis

60) krok 2019
discipline:
topic:
In an experiment a laboratory rat was subjected to a stress factor (electric current), which resulted in muscular hypotonia, arterial hypotension, hypothermia, and hypoglycemia in the animal. What period of general adaptation syndrome is it?

A. Resistance stage
B. Exhaustion stage
C. Antishock phase
D. Shock phase
E.

61) krok 2019
discipline:
topic:
Human brain produces endogenous peptides that are similar to morphine and can reduce pain perception. Name these peptides:

A. Statins
B. Endorphins
C. Vasopressin
D. Oxytocin
E. Liberins

62) krok 2019
discipline:
topic:
A man is a carrier of HIV that is an RNA virus. The cells of this patient synthesize viral DNA. This process is based on:

A. Replication
B. Reverse transcription
C. Repair
D. Transcription
E. Translation

63) krok 2019
discipline:
topic:
Autopsy of a 58-year-old man, who for a long time has been drinking alcohol in large amounts and died at home, is being conducted. Macroscopically the right lung is dense and enlarged, its tissue is gray and homogeneous on section, its pleura is covered with grayish membranous deposits. Microscopically the alveolar cavities contain fibrin threads, neutrophils, and hemolysed erythrocytes. Make the diagnosis:

A. Caseous pneumonia
B. Croupous pneumonia
C. Focal pneumonia
D. Primary pulmonary tuberculosis
E. Interstitial pneumonia

64) krok 2019
discipline:
topic:
A patient for a long time was on an imbalanced diet low in proteins, which resulted in hepatic fatty infiltration. This condition is likely to develop if a certain substance is absent in a person's diet. Name this substance:

A. Alanine
B. Cholesterol
C. Acetic acid
D. Biotin
E. Methionine

65) krok 2019
discipline:
topic:
A 52-year-old woman came to the neurologist with complaints of loss of skin sensitivity on the right half of her face in the
, area of the lower eyelid, nasal arch, and upper lip. What branch of what nerve is damaged in this patient?

A. Ophthalmic branch of the trigeminal nerve
B. Greater petrosal nerve branching from the facial nerve
C. Chorda tympani branching from the facial nerve
D. Maxillary branch of the trigeminal nerve
E. Mandibular branch of the trigeminal nerve

66) krok 2019
discipline:
topic:
A woman with allergic neurodermatitis was prescribed a second-generation antihistamine without depressing effect on the CNS. Name this drug:

A. Dimedrol (Diphenhydramine)
B. Tavegyl (Clemastine)
C. Loratadine
D. Ketotifen
E. Diazolin (Mebhydrolin)

67) krok 2019
discipline:
topic:
The mother's karyotype has 45 chromosomes. It was determined that translocation of chromosome 21 to chromosome 14 had occurred. What disorder is likely to be observed in the child of this woman if the father's karyotype is normal?

A. Edwards syndrome
B. Patau syndrome
C. Klinefelter syndrome
D. Down syndrome
E. Morris syndrome (androgen insensitivity)

68) krok 2019
discipline:
topic:
A man has been working for a long time in oil processing. What type of carcinogens does he encounter at his workplace?
A. Amino-azo compounds
B. Biological carcinogens
C. Nitrosamines
D. Polycyclic aromatic hydrocarbons
E. Amines

69) krok 2019
discipline:
topic:
During regular examination of schoolchildren, a scrape from the perianal folds of a 10-year-old girl shows asymmetrical oval eggs with larvae inside. What diagnosis can be made?
A. Ancylostomiasis
B. Trichuriasis
C. Enterobiasis
D. Amebiasis
E. Ascariasis

70) krok 2019
discipline:
topic:
Clinical course of urolithiasis was complicated by the passage of a renal calculus. Where in the ureter is it most likely to stop?
A. 5 cm above the pelvic segment
B. 2 cm above the entrance to the urinary bladder
C. In the middle of the abdominal segment
D. At the border between the abdominal and pelvic segments
E. In the renal pelvis

71) krok 2019
discipline:
topic:
Histone protein synthesis is artificially blocked in a cell. What cell structure will be damaged as a result?
A. **Nuclear membrane**
B. **Golgi apparatus**
C. **Cell membrane**
D. **Nuclear chromatin**
E. **Nucleolus**

72) krok 2019
discipline:
topic:
After a prolonged attack of severe headache the patient lost mobility in his left arm and leg. Muscle tone is decreased in the affected limbs, the muscles are spasmed, spinal tendon reflexes are acutely intensified,

reflex zones are increased. What nervous system disorder can be observed in this patient?

A. Peripheral paralysis
B. Flaccid paralysis
C. Central paralysis
D. Extrapyramidal paralysis
E. Reflex paralysis

73) krok 2019
discipline:
topic:
People, who for a long time remained in hypodynamic state, develop intense pain in the muscles after a physical exertion. What is the most likely cause of this pain?

A. Accumulation of lactic acid in muscles
B. Intensive breakdown of muscle proteins
C. Increased content of ADP in muscles
D. Decreased content of lipids in muscles
E. Accumulation of creatinine in muscles

74) krok 2019
discipline:
topic:
A family has two children. The younger child is under a year. The child has developed spastic cough attacks. Similar clinical presentation was observed in the elder preschool child one month ago. The doctor suspects pertussis infection. What method enables retrospective diagnostics of this disease?

A. Microscopy
B. Serological
C. Molecular biological
D. Bacteriological
E. Biological

75) krok 2019
discipline:
topic:
A 40-year-old woman on examination presents with intensified basal metabolic rate. What hormone present in excess leads to such condition?

A. **Aldosterone**
B. **Thyrocalcitonin**
C. **Triiodothyronine**
D. **Somatostatin**
E. **Glucagon**

76) krok 2019
discipline:
topic:
A 59-year-old man, a business manager, developed intense burning retrosternal pain that irradiates to the left arm. The pain occurred in the evening after the tax audit. 15 minutes later the patient's condition normalized. What mechanism of angina pectoris development is leading in this patient?

A. Intravascular aggregation of blood cells
B. Increased level of blood catecholamines
C. Coronary artery thrombosis
D. Coronary atherosclerosis
E. Functional cardiac overload

77) krok 2019
discipline:

topic:
The neurological department received a patient complaining of memory deterioration and loss of mental work capacity that developed after a head trauma. Recommend him a medicine for improvement in cerebral metabolism:

A. Analgin (Metamizole)
B. Piracetam (Nootropil)
C. Meridil (Methylphenidate)
D. Sydnocarb (Mesocarb)
E. Caffeine

78) krok 2019
discipline:
topic:
In the hematology unit a patient with leukemia was prescribed 5-Fluorouracil. This drug:

A. Inhibits translation
B. Inhibits DNA synthesis
C. Stimulates DNase
D. Inhibits transcription
E. Catalyzes replication

79) krok 2019
discipline:
topic:
A 63-year-old man, who has been suffering from chronic diffuse obstructive pulmonary emphysema for 15 years, died of progressive heart failure. Autopsy shows nutmeg liver cirrhosis, cyanotic induration of kidneys and spleen, ascites, and edemas of the lower limbs. What type of heart failure can be characterized by such changes in the internal organs?

A. Chronic heart failure
B. Chronic atrial failure
C. Acute right ventricular failure
D. Acute left ventricular failure
E. Acute global heart failure

80) krok 2019
discipline:
topic:
Autopsy revealed a large wedge-shaped patch of a dense dark red tissue with clear margins in the upper lobe of the right lung. Histological examination detected there necrosis of the alveolar walls; the alveolar lumen is tightly packed with erythrocytes. What process occurred in the lungs?

A. Gangrene
B. Hemorrhage
C. Hemorrhagic infarction
D. Atelectasis
E. Carneous degeneration

81) krok 2019
discipline:
topic:
The Gerontology Institute recommends older people to take vitamin complexes that contain vitamin *E*. What is the main function of this vitamin?

A. Antioxidant
B. Antihemorrhagic
C. Antidermatitic
D. Antineuritic
E. Antiscorbutic

82) krok 2019
discipline:
topic:
A 40-year-old man with impaired venous patency in the lower limbs developed edemas. What mechanism plays the main role in the development of this disturbance?
A. Hypoproteinemia
B. Decreased gradient of osmotic pressure between blood and tissue
C. Elevated filtration pressure
D. Positive fluid balance
E. Disturbed humoral regulation of water- mineral balance

83) krok 2019
discipline:
topic:
A married couple came for a genetic counseling. The husband suffers from insulin- independent diabetes mellitus, while the wife is healthy. What is the probability of their child developing insulin-independent diabetes mellitus?
A. Higher than in the population
B. 100%
C. The same as in the population
D. Lower than in the population
E. 50%

84) krok 2019
discipline:
topic:
A 45-year-old woman has an attack of cardiac fibrillation. She suffers from stage II essential hypertension. What is the drug of choice for stopping this attack?
A. Sustac forte (Nitroglycerin)
B. Potassium chloride
C. Anaprilin (Propranolol)
D. Strophanthin
E. Lidocaine

85) krok 2019
discipline:
topic:
A 63-year-old man suffers from esophageal carcinoma, presents with metastases into the mediastinal lymph nodes and cancerous cachexia. What pathogenetic stage of neoplastic process is observed in the patient?
A. -
B. Promotion
C. Initiation
D. Transformation
E. Progression

86) krok 2019
discipline:
topic:
Autopsy of a man, who had been suffering 'from mitral stenosis, reveals dense brown lungs. What pathologic process had occurred in the lungs?
A. Hemochromatosis
B. Hemomelanosis
C. Hemosiderosis
D. Jaundice

E. Lipofuscinosis

87) krok 2019
discipline:
topic:
A patient with severe poisoning was brought into the intensive care unit. In the course of complex treatment the subclavian vein needs to be catheterized for medicine administration. This vein is located in the following topographic structure:
A. *Spatium antescalenum*
B. *Trigonum omotrapezoideum*
C. *Spatium interscalenum*
D. *Spatium interaponeuroticum suprasternale*
E. *Spatium retrosternocleidomastoideus*

88) krok 2019
discipline:
topic:
A patient with myocardial infarction in the acute phase has been hospitalized into the cardiology unit. To induce platelet lysis in the patient's coronary vessels during the early hours of infarction, the following enzyme should be used:
A. Hyaluronidase
B. Lysozyme
C. Streptokinase
D. Trypsin
E. Chymotrypsin

89) krok 2019
discipline:
topic:
Domestic accident has resulted in a significant blood loss in the patient, which was accompanied by a drop in blood pressure. What hormones ensure quick restoration of the blood pressure caused by a blood loss?
A. **Aldosterone**
B. **Reproductive hormones**
C. **Cortisol**
D. **Adrenaline, vasopressin**
E. **Oxytocin**

90) krok 2019
discipline:
topic:
A patient is diagnosed with severe *B 12- deficiency* anemia resulting in disturbed hematopoiesis and appearance of atypical erythrocytes in the blood. The patient has a history of total gastric resection. This diagnosis can be confirmed if the following cells are present in the peripheral blood:
A. Megalocytes
B. Elliptocytes
C. Anulocytes
D. Microcytes
E. Normocytes

91) krok 2019
discipline:
topic:
A 45-year-old woman presents with breast cancer. Metastases can spread in this case to the following regional lymph nodes:

A. Parasternal, bronchomediastinal
B. Cervical, parasternal
C. Aortic, bronchomediastinal
D. Abdominal, cervical
E. Axillary, parasternal

92) krok 2019
discipline:
topic:
A 36-year-old man provisionally diagnosed with renal tuberculosis has undergone urinary sediment analysis. Microscopy revealed acid-fast bacteria, but Pryce method detected no cord factor. Name the most reliable method of investigation that can confirm or refute this provisional diagnosis:
A. Inoculation of laboratory animals
B. Phage typing of the obtained culture
C. Toxigenicity testing
D. Allergy skin test
E. Serological identification of the causative agent

93) krok 2019
discipline:
topic:
Blood test of the patient revealed albumine content of 20 g/L and increased activity of lactate dehydrogenase isoenzyme 5 **(LDH5).** These results indicate disorder of the following organ:
A. Liver
B. Heart
C. Kidneys
D. Spleen
E. Lungs

94) krok 2019
discipline:
topic:
A patient with diabetes mellitus after an insulin injection lost his consciousness and developed convulsions. What will be the result of a biochemical test for blood glucose level in this case?
A. 10 mmol/L
B. 2.5 mmol/L
C. 5.5 mmol/L
D. 8.0 mmol/L
E. 3.3 mmol/L

95) krok 2019
discipline:
topic:
Histological analysis of a biopsy skin sample obtained from a 24-year-old patient detects caseous necrosis surrounded with cellular infiltrate consisting of lymphocytes, among which there are single giant cells; proliferation of connective tissue and endovasculites are observed. Characterize this pathologic process:
A. Ichorous inflammation
B. Proliferative granulomatous inflammation
C. Abscess
D. Proliferative interstitial inflammation
E. Catarrhal inflammation

96) krok 2019
discipline:
topic:

A 39-year-old man presents with hyperkeratosis, disturbed twilight vision, and high risk of infectious processes. What vitamin preparation should he be prescribed?

A. Ergocalciferol
B. Pyridoxine hydrochloride
C. Retinol acetate
D. Riboflavin
E. Tocopherol acetate

97) krok 2019
discipline:
topic:
A histological specimen shows significant amount of mucous connective tissue (Wharton's jelly), vessels, as well as remnants of yolk sac stalk and allantois. Name this organ:

A. **Umbilical cord**
B. **Urethra**
C. **Vermiform appendix**
D. **Esophagus**
E. **Ureter**

98) krok 2019
discipline:
topic:
A 33-year-old woman, who for a long time has been treated for chronic polyarthritis, complains of elevated blood pressure, changes in adipose tissue distribution, and disturbed menstrual cycle. What drug does this patient take?

A. Indometacin
B. Butadion (Phenylbutazone)
C. Synaflan (Fluocinolone acetonide)
D. Prednisolone
E. Beclometasone

99) krok 2019
discipline:
topic:
Pathologic material (mucosal excretion from the nasal passages) obtained from a patient provisionally diagnosed with influenza was sent to the virological laboratory. What quick test allows detecting specific viral antigen in the investigated material?

A. Hemagglutination inhibition assay (HAI)
B. Reverse indirect hemagglutination (RIHA)
C. Radioimmunoassay (RIA)
D. Direct and indirect immunofluorescence (IF)
E. Direct and indirect enzyme-linked immunosorbent assay (ELISA)

100) krok 2019
discipline:
topic:
KCl concentration in a solution that surrounds an isolated cell was increased. How will resting membrane potential (RMP) and cell excitability change in this case?

A. RMP increases, excitability decreases
B. RMP and excitability remain unchanged
C. RMP increases, excitability increases
D. RMP decreases, excitability increases
E. RMP decreases, excitability remains unchanged

101) krok 2019

discipline:
topic:
A 7-year-old boy is diagnosed with anemia. Laboratory analysis detects pyruvate kinase deficiency in his erythrocytes. What process is disturbed in this boy, playing the main role in anemia development in this case?

A. Gluconeogenesis
B. Decarboxylation of amino acids
C. Anaerobic glycogenolysis
D. Anaerobic glycolysis
E. Deaminization of amino acids

102) krok 2019
discipline:
topic:
An isolated heart was used to study excitation conduction velocity in different areas of the heart. What area had the lowest velocity of excitation conduction?

A. **Atrial myocardium**
B. **Ventricular myocardium**
C. **His bundle**
D. **Atrioventricular node**
E. **Purkinje fibers**

103) krok 2019
discipline:
topic:
A 3-year-old child has been brought by ambulance to the intensive care unit of the infectious diseases hospital. On examination the child is in severe condition, skin and mucosa are dry, tissue turgor is reduced. The patient's history states that profuse diarrhea and recurrent vomiting were observed throughout the previous day after the child had eaten food products of poor quality. What type of salt and water imbalance is likely to have developed in the patient?

A. Isoosmolar hyperhydration
B. Hyperosmolar hyperhydration
C. Hypoosmolar dehydration
D. Isoosmolar dehydration
E. Hypoosmolar hyperhydration

104) krok 2019
discipline:
topic:
An inflammation can be characterized by hemocapillary dilation in the affected area, decreased blood circulation, and increased vessel wall permeability. What cells play the key role in this process?

A. **Tissue basophils**
B. **Fibroblasts**
C. **Eosinophils**
D. **Plasma cells**
E. **Macrophages**

105) krok 2019
discipline:
topic:
Autopsy of a 30-year-old man shows enlarged spleen (weight - 900.0 g), enlarged liver (weight - 4000.0 g), and enlarged lynph nodes. Bone marrow of the femoral shaft is bright red and moist. Microscopically in the liver there are thick infiltrates located mostly along the portal tract. The infiltrates consist of juvenile hemopoietic cells with round nuclei and thin layer of cytoplasm. What disease can be suspected?

A. Chronic lymphocytic leukemia

B. Acute myeloblastic leukemia
C. Acute lymphoblastic leukemia
D. Generalized lymphogranulomatosis
E. Chronic myeloid leukemia

106) krok 2019
discipline:
topic:
A 27-year-old woman has undergone a sector resection of mammary gland tissue. Macroscopy detects a dense white node, 4 cm in diameter, with clear margins in the excised tissue. Immediate histological analysis shows the tumor to consist of a large amount of fibrous stroma with stromal proliferation around the small canaliculi. Canalicular epithelium overlays the basement membrane and retains its polarity. Make the diagnosis:
A. Adenocarcinoma
B. Dyshormonal disorders
C. Cancer
D. Pericanalicular fibroadenoma
E. Sarcoma

107) krok 2019
discipline:
topic:
Autopsy of a 60-year-old woman, who for a long time had been suffering from essential hypertension, shows significantly diminished kidneys (weight of both kidneys is 80 g) with finely granular surface. Uniform renal cortical thinning can be observed on section. Name the described changes in the kidneys:
A. Amyloid contracted kidney
B. Primary contracted kidney
C. Pyelonephritic contracted kidney
D. Diabetic nephrosclerosis
E. Secondary contracted kidney

108) krok 2019
discipline:
topic:
A patient developed punctate hemorrhages after a tourniquet had been applied. It occurred due to functional disturbance of the following blood corpuscles:
A. Monocytes
B. Eosinophils
C. Lymphocytes
D. Platelets
E. Neutrophils

109) krok 2019
discipline:
topic:
What diagnostic method should be used in industry to test the raw leather for presence of *B. antracisl*
A. Ascoli’s thermo precipitation test
B. Bacteriological analysis
C. Serological test
D. Microscopy with Burry-Gins stain
E. Microscopy with Aujeszky stain

110) krok 2019
discipline:
topic:

A patient has a pancreatic tumor. During surgery it was accessed by making an opening through the *lig. gastrocolicum*, but in the process a vessel passing through this ligament was damaged. As a result the surgeon had to stop the bleeding from the following vessel:

A. *A. gastrica sinister*
B. *A. gastrica dexter*
C. *A. pancreatico-duodenalis superior*
D. *A. gastro-duodenalis*
E. *A. gastroomentalis dexter*

111) krok 2019
discipline:
topic:
During an invasive operation the surgeon needs to access the omental bursa of the peritoneal cavity via the omental foramen (foramen of Winslow). What anatomical structure makes up the anterior border of this foramen?

A. Visceral surface of liver
B. Greater omentum
C. Superior part of duodenum
D. Hepatoduodenal ligament
E. Hepatorenal ligament

112) krok 2019
discipline:
topic:
Autopsy of a man, who served on a nuclear submarine, revealed the following pathologies: bone marrow atrophy (panmyelophthisis), anemia, leukopenia, thrombocytopenia, lymphocytic disintegration in the lymph nodes, spleen, gastrointestinal lymphatic system, and hemorrhages into the adrenal glands. What disease had developed in this case?

A. *N. medianus*
B. *N. ulnaris*
C. *N. musculocutaneus*
D. *N. cutaneus brachii medialis*
E. *N. radialis*

113) krok 2019
discipline:
topic:
A patient has gradually developed a skin plaque on his face. In the center of this plaque there are necrotic patch and an ulcer. Histopathological analysis of the biopsy material reveals proliferation of atypical epithelial cells with large number of pathologic mitoses. What is the most likely diagnosis?

A. Trophic ulcer
B. Fibroma
C. Skin cancer
D. Sarcoma
E. Papilloma

114) krok 2019
discipline:
topic:
Before a surgery the patient was prescribed a synthetic antiprotozoal drug for prevention of wound infection. The prescribed drug is highly effective against *Helicobacter pylori.* Name this drug:

A. Aciclovir
B. Doxycycline hydrochloride
C. Metronidazole
D. Isoniazid

E. Chingamin (Chloroquine)

115) krok 2019
discipline:
topic:
Parenchyma of an organ is composed of pseudounipolar neurons localized under the capsule of connective tissue. Central place belongs to nerve fibers. Name this organ:
A. **Sympathetic ganglion**
B. **Nerve trunk**
C. **Intramural ganglion**
D. **Spinal ganglion**
E. **Spinal cord**

116) krok 2019
discipline:
topic:
2.5-year-old child is provisionally diagnosed with pharyngeal diphtheria. Smear from the child's mucosa was obtained and inoculated into a coagulated equine serum. What is the purpose of this stage of microbiological diagnostics?
A. Determination of toxin serotype
B. Determination of biochemical properties
C. Pure culture isolation
D. Detection of toxigenicity
E. Analysis of antigenic properties

117) krok 2019
discipline:
topic:
A patient was hospitalized in a comatose state. The patient has a 5-year-long history of diabetes mellitus type 2. Objectively respiration is noisy, deep, with acetone breath odor. Blood glucose is 15.2 mmol/L, ketone bodies - 100 micromol/L. These signs are characteristic of the following diabetes complication:
A. Ketoacidotic coma
B. Hypoglycemic coma
C. Hepatic coma
D. Hyperglycemic coma
E. Hyperosmolar coma

118) krok 2019
discipline:
topic:
Cells of a person working in the Chornobyl Exclusion Zone have undergone a mutation in DNA molecule. However, with time the damaged interval of DNA molecule restored ist initial structure with a specific enzyme. In this case the following occurred:
A. Repair
B. Translation
C. Transcription
D. Replication
E. Reverse transcription

119) krok 2019
discipline:
topic:
The bacteriological laboratory has received for analysis a sample of dried fish from a focus of food poisoning outbreak. The bacteriologist inoculated the sample into a Kitt-Tarozzi medium, where growth of tennis racquet-shaped microorganisms could be observed. These microorganisms are likely to be the

causative agents of:

A. Botulism
B. Typhoid fever
C. Salmonellosis
D. Staphylococcal toxicoinfection
E. Dysentery

120) krok 2019
discipline:
topic:
A 12-year-old boy with clinical presentation of influenza has developed respiratory mycoplasmosis. What type of infection has developed under these conditions?

A. Mixed infection
B. Superinfection
C. Relapse
D. Iatrogenic infection
E. Autoinfection

121) krok 2019
discipline:
topic:
A patient has been taking bisacodyl for a long time to treat chronic constipation. However, several weeks later the aperient effect of the drug diminished. What is the possible cause of this?

A. Functional cumulation
B. Acquired tolerance
C. Material cumulation
D. Drug dependence
E. Sensitization

122) krok 2019
discipline:
topic:
The dorsal root of the spinal nerve of a test animal was severed. What changes will occur in the innervation area?

A. *N. medianus*
B. *N. ulnaris*
C. *N. musculocutaneus*
D. *N. cutaneus brachii medialis*
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E. Dysentery

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E. Autoinfection

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discipline:
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A. Functional cumulation
B. Acquired tolerance
C. Material cumulation
D. Drug dependence
E. Sensitization

132) krok 2019
discipline:
topic:
The dorsal root of the spinal nerve of a test animal was severed. What changes will occur in the innervation area?

A. Loss of motor function
B. Decreased muscle tone
C. Increased muscle tone
D. Loss of sensitivity
E. Loss of sensitivity and motor function

133) krok 2019
discipline:
topic:
An uconscious young man in the state of morphine intoxication has been brought into an admission room. The patient’s respiration is slow and shallow due to suppression of the respiratory center. What kind of respiratory failure occurred in this case?

A. Diffusion
B. Ventilatory obstruction
C. Ventilatory disregulation

D. Ventilatory restriction
E. Perfusion

134) krok 2019
discipline:
topic:
A 27-year-old patient presents with pathologic changes in the liver and brain. Blood plasma exhibits acute decrease in copper levels, while urine copper levels are elevated. The patient is diagnosed with Wilson disease. To confirm this diagnosis it is necessary to measure activity of the following enzyme in the patient's blood serum:
A. Ceruloplasmin
B. Carbonic anhydrase
C. Xanthine oxidase
D. Alcohol dehydrogenase
E. Leucine aminopeptidase

135) krok 2019
discipline:
topic:
A 40-year-old man with pulmonary tuberculosis was prescribed isoniazid. Prolonged taking of this drug can result in development of the following vitamin deficiency:
A. Thiamine
B. Cobalamin
C. Biotin
D. Folic acid
E. Pyridoxine

136) krok 2019
discipline:
topic:
A patient with diabetes mellitus and allergic dermatitis was prescribed a certain fiuorinated hormone drug in the ointment dosage form. When the patient asked, how this drug was better than the hydrocortisone ointment, the doctor explained that the prescribed medicine:
A. Had short-term action
B. Increased insulin synthesis
C. Was cheaper
D. Had practically no resorptive effect
E. Was less potent

137) krok 2019
discipline:
topic:
Autopsy of a 49-year-old woman who died of chronic kidney failure shows small dense striated kidneys with areas of hemorrhages. Microscopically nuclei of epithelial channels contain hematoxylin bodies; glomerular capillaries resemble wire loops, have thickened basement membranes,
and in places contain hyaline thrombi and foci of fibrinoid necrosis. What is the most likely diagnosis?
A. Amyloidosis
B. Rheumatism
C. Atherosclerotic nephrosclerosis
D. Arteriolosclerotic nephrosclerosis
E. Systemic lupus erythematosus

138) krok 2019
discipline:
topic:

A patient with arrhythmia was hospitalized into the cardiology unit. What antiarrhythmic drug should be prescribed?

A. Acetylsalicylic acid
B. Diclofenac sodium
C. Furacilin (Nitrofural)
D. Amiodarone
E. Drotaverine hydrochloride

139) krok 2019
discipline:
topic:
A woman with polyarticular rheumatoid arthritis was prescribed a non-steroidal antiinflammatory drug - diclofenac sodium. After the patient has been taking it for some time, her concomitant disease exacerbated, which forced the doctor to cancel the prescription of this drug. What concomitant disease could necessitate cancellation of this drug prescription?

A. Diabetes mellitus
B. Bronchial asthma
C. Ischemic heart disease
D. Ulcer disease
E. Essential hypertension

140) krok 2019
discipline:
topic:
A patient presents with an inner ear inflammation. On examination the doctor states that the 1st neurons of the auditory analyzer are affected. Where are these neurons located?

A. *G. trigeminale*
B. *G. geniculi*
C. *G. spirale*
D. *G. ciliare*
E. *G. vestibulare*

141) krok 2019
discipline:
topic:
A patient with streptococcal infection of the gingiva was prescribed a drug with /3-lactam ring in its structure. What drug of those listed below belongs to this pharmacological group?

A. Levomycetin (Chloramphenicol)
B. Benzylpenicillin
C. Streptomycin sulfate
D. Rifampicin
E. Erythromycin

142) krok 2019
discipline:
topic:
Dwellers of a village located in the taiga make a living by harvesting berries. Lately the occurrence of alveococcosis in the village population has increased. What is the source of invasion in this case?

A. Sick people
B. Foxes
C. Birds
D. Fish
E. Rodents

143) krok 2019

discipline:
topic:
To determine toxigenicity of diphtheria causative agents obtained from patients, the cultures were inoculated in a Petri dish with nutrient agar, bilaterally to a strip of filter paper spotted with antidiphtheric antitoxic serum and situated in the center of the Petri dish. After incubation of the inoculated cultures in the agar, strip-like areas of medium turbidity formed between some of the cultures and the filter paper. What immunological test was conducted?

A. Opsonization test
B. Ring precipitin test
C. Coombs test
D. Agglutination test
E. Agar gel precipitation test

144) krok 2019
discipline:
topic:
Systemic blood pressure of a person equals 120/65 mm Hg. Blood ejection into aorta occurs when left ventricular pressure exceeds:

A. 120 mm Hg
B. 65 mm Hg
C. 90 mm Hg
D. 10 mm Hg
E. 100 mm Hg

145) krok 2019
discipline:
topic:
A 6-year-old girl presents with acute onset of a disease. She developed sore throat and high temperature that were later accompanied by a punctate skin rash. Oral examination reveals acute pharyngeal hyperemia, raspberry tongue, and enlarged bright red tonsils with dull gray and yellow foci that spread to the peritonsillar tissues. The submandibular lymph nodes are enlarged. What disease are these changes characteristic of?

A. Pharyngeal diphtheria
B. Measles
C. Meningococcal nasopharyngitis
D. Scarlet fever
E. Laryngeal diphtheria

146) krok 2019
discipline:
topic:
A 45-year-old woman presents with insufficient secretion of enterokinase enzyme. Enterokinase deficiency can cause disturbance of the following digestive function:

A. Protein hydrolysis
B. Lipid hydrolysis
C. Carbohydrate hydrolysis
D. Lipid absorption
E. Vitamin absorption

147) krok 2019
discipline:
topic:
A 40-year-old person developed elevated blood pressure after an emotional excitement. What is the likely cause of this effect?

A. Increased sympathetic nervous system tone

B. Increased parasympathetic nervous system tone
C. Arteriolar dilation
D. Decreased cardiac contraction frequency
E. Hyperpolarization of cardiomyocytes

148) krok 2019
discipline:
topic:
An ovarian tumor was detected in a woman. She is prescribed a surgery. What ligament should be severed by the surgeon to separate the patient's ovary from the uterus?
A. Suspensory ligament of the ovary
B. Lateral umbilical ligament
C. Proper ovarian ligament
D. Broad ligament of the uterus
E. Round ligament of the uterus

149) krok 2019
discipline:
topic:
Antileukocytic antibodies are detected in the blood of a patient with leukopenia. What type of Coombs-Gell hypersensitivity reaction developed in this case?
A. Stimulating
B. Cytotoxic
C. Delayed-type hypersensitivity
D. Immune complex-mediated
E. Anaphylactic

150) krok 2019
discipline:
topic:
First-year schoolchildren have received tuberculin skin test (Mantoux test) at the school nurse's office. The purpose of this test was:
A. To determine the children that need to receive BCG vaccination
B. To measure allergization rate against rickettsia
C. To detect parotitis in the schoolchildren
D. To measure immunity stress due to diphtheria
E. To preventively vaccinate against tuberculosis

151) krok 2019
discipline:
topic:
A 40-year-old woman dies of intracerebral hemorrhage after the hypertensive emergency. During an autopsy, the pathologist reveals severe obesity, excess of body hair and wide purplish stria on the abdomen. Microscopic examination of pituitary gland reveals hyperplastic acini populated by a homogenous cluster of deeply basophilic cells. Which of the following was the most likely underlying disease?
A. -
B. Cushing disease
C. Hyperthyroidism
D. Sheehan's syndrome
E. Arterial hypertension

152) krok 2019
discipline:
topic:
An 18-year-old girl comes to her physician with concern about her health because she has not achieved

menarche. She denies any significant weight loss, changes in mood, or changes in her appetite. She mentions that her mother told her about mild birth defects, but she cannot recall the specifics. Past medical history and family history are benign. On physical examination, the patient is short in stature, has a short and webbed neck and wide chest. Staining of buccal smear reveals absence of Barr bodies in the nucleus of epithelial cells. A urine pregnancy test is negative. Which of the following genetic disorders is the most likely cause of this patient's condition?

A. Klinefelter syndrome
B. Turner syndrome
C. Cri du chat ("cat-cry") syndrome
D. Patau syndrome
E. Edwards syndrome

153) krok 2019
discipline:
topic:

A 56-year-old man presents for a checkup. The patient says he has to urinate quite frequently, but denies any dysuria or pain on urination. Past medical history is significant for diabetes mellitus type 2 and hypertension, both managed medically. Current medications are metformin, aspirin, rosuvastatin, captopril and furosemide. Laboratory findings are significant for the following: Glycated Hemoglobin (Hb Ale) - 8.0%, Fasting Blood Glucose - 12 mmol/L. His doctor decides to add glibenclamide to the therapy. Which of the following is the most likely mechanism of this drug's action?

A. -
B. Facilitation of glucose absorption in the intestine
C. Stimulation of insulin release
D. Stimulation of glucose reuptake by the cell
E. Inhibition of insulin release

154) krok 2019
discipline:
topic:

A 68-year-old man comes to his physician with complaints of severe fatigue and altered sensations in his extremities. Past medical history is remarkable for chronic gastritis. He drinks alcohol almost every day. His blood pressure is 130/80 mm Hg, heart rate is 95/min., respiratory rate - 14/min. and temperature of 37.1°C. His heart has a regular rate and rhythm, his lungs are clear to auscultation bilaterally. Neurologic examination reveals loss of touch and vibration sense in both upper and lower limbs. Laboratory investigation results include a hemoglobin of 80 g/L, Mean Corpuscular Volume (MCV) of 115 fL (the reference range is 80-100 fL) and White Blood Cells (WBC) of 3.0 ■ 10^9/L. Which of the following is the most likely diagnosis?

A. Vitamin *A*deficiency
B. Vitamin *C*deficiency
C. Vitamin *B\2* deficiency
D.
D. Iron deficiency

155) krok 2019
discipline:
topic:

On your physiology class, the professor asks you to report about the effects of various body hormones and neurotransmitters on the metabolism of glucose. You begin your report with the statement that the use of glucose by the cell is preceded by absorption through the plasma membrane from the extracellular matrix into the cell. Which of the following hormones is most likely responsible for the glucose uptake by the cell?

A. Insulin
B. Thyroxine
C. Epinephrine
D. Aldosterone

E. Glucagon

156) krok 2019
discipline:
topic:
After dehelmintization, a 35-year-old man passed a 3.5 m tapeworm during a bowel movement. A stool examination reveals scolex with four suckers and hooks. Mature proglottids are static with up to 12 primary uterine branches. Which of the following is the most likely diagnosis?
A. Opisthorchiasis
B.
B. Diphyllobothriasis
C. Echinococcosis
D. Taeniasis

157) krok 2019
discipline:
topic:
A 16-year-old girl concerned about her sexual development comes to the physician. She mentions that she has still not had a menstrual period. However, she is otherwise a healthy girl with no significant medical problems since birth. On physical examination, her vital signs are stable. She does not have pubic hair and her breast is slightly elevated with areola remaining in contour with surrounding breast. Which of the following is the most likely cause of this abnormal physical development?
A. Hyperthyroidism
B. Pancreatic islet insufficiency
C. Hypothyroidism
D. Ovarian insufficiency
E. Adrenal medulla hyperfunction

158) krok 2019
discipline:
topic:
A 23-year-old woman presents to the emergency department complaining of bloody diarrhea, fatigue and confusion. A few days earlier, she went to a fast food restaurant for a birthday party. Her friends are experiencing similar symptoms. Laboratory studies show anemia. Which of the following would you most likely obtain for microbiologic testing?
A. Bile
B. Blood
C. Cerebrospinal fluid
D. Urine
E. Stool

159) krok 2019
discipline:
topic:
After delivery of a child by pregnant woman, the midwife notices a defect in external genitalia of a newborn. The woman only had one prenatal ultrasound that reported a male fetus. On physical exam, the neonatologists notices a short, broad penis with an orifice in its dorsal aspect, both testicles are present in the scrotum. Which of the following is the most likely congenital abnormality?
A. Ovotesticular disorder of sex development
B. Phimosis
C. Epispadias
D. Paraphimosis
E. Hypospadias

160) krok 2019

discipline:
topic:
A mother of a 4-month-old male infant brought him to pediatrician with complaints of food rejection and weight loss. He started having trouble latching onto his bottle. He has also become extremely lethargic. Examination reveals diminished muscle tone in all four limbs, and hepatosplenomegaly. An ophthalmoscopic exam reveals macular cherry red spots. During the next few weeks, hepatosplenomegaly progresses, the boy fails to thrive, and he continues to reject food. Chest X-ray shows a reticulonodular pattern and calcified nodules. Biopsy of the liver shows foamy histiocytes. A Niemann-Pick disease is suspected. Which of the following is the most likely deficient enzyme in this patient?

A. Phenylalanine-hydroxylase
B. Glucocerebrosidase
C. Glucose-6-phosphatase
D. Galactocerebrosidase
E. Sphingomyelinase

161) krok 2019
discipline:
topic:
A 6-year-old boy is brought to the pediatrician by his mother, who complains of low-grade fever, chronic cough and night sweats in her child. She describes the cough as productive, producing white sputum that is sometimes streaked with blood. She also says that her son has lost some weight in the last month. His vital signs include blood pressure of 115/75 mm Hg, heart rate of 110/min., respiratory rate of 18/min. and temperature of 36.6°*C.*On physical examination, the patient is ill looking. Pulmonary auscultation reveals some fine crackles in the right upper lobe. The pediatrician suspects an active infection and performs Mantoux test. Intradermal injection of which of the following substances has been most likely used by pediatrician for screening test in this clinical case?

A. Tetanus and diphtheria toxoids vaccine (Td)
B. Diphtheria-tetanus toxoids-acellular pertussis vaccine (DTaP)
C. Tuberculin
D. Bacillus Calmette-Guerin (BCG) vaccine

162) krok 2019
discipline:
topic:
A 65-year-old woman presents to the emergency department because of shortness of breath and chest pain that started a few hours ago. She did not have a fever, expectoration, or any accompanying symptoms. She has a history of right leg deep vein thrombosis that occurred 5 years ago. Some time later, she dies of severe respiratory distress. A pulmonary autopsy specimen reveals red loose mass that is lodged in the bifurcation of the pulmonary trunk with extensions into both the left and right main pulmonary arteries. Which of the following is the most likely diagnosis?

A. Pneumothorax
B. Pneumonia
C. Myocardial infarction
D.
D. Thromboembolism

163) krok 2019
discipline:
topic:
A 14-year old girl presents to the emergency department for evaluation of an ’’infected leg’.’ She states there is no history of trauma but mentions she had a history of sickle cell disease. On physical examination, her upper part of right shin is very painful, red, swollen and hot. Her temperature is 39.2°*C.*An X-ray shows focal bony lysis and loss of trabecular architecture in the metaphysis of right tibia. Increased activity of which of the following cells is the most likely cause of bone reabsorption in this patient?

A. **Chondroblasts**
B. **Osteocytes**
C. **Osteoblasts**
D. **Osteoclasts**
E. **Chondrocytes**

164) krok 2019
discipline:
topic:
A 46-year-old man presents with fatigue and joint pain in his fingers and wrists for the last 2 months. The pain is present in both hands and the wrists are swollen. Furthermore, he describes morning stiffness in his joints lasting about 2 hours, which improves with use. His past medical history reveals he has been successfully treated for *H. pylori* related ulcers last year. He denies smoking and stopped drinking when his gastric symptoms started. Which of the following drugs is the best choice for his joints' pain management?
A. Paracetamol
B. Celecoxib
C. Aspirin
D. Prednisone
E. Morphine

165) krok 2019
discipline:
topic:
A 45-year-old woman comes to her physician with complaints of excessive fatigue and weakness. She says that these symptoms have been present for the past month. On further questioning, she admits having lost 3 kilograms in the last 2 weeks. On physical examination, she is a tired-appearing thin woman. Hyperpigmentation is present over many areas of her body, most prominently over the face, neck and back of hands (areas exposed to light). Increased production of which of the following hormones is the most likely cause of hyperpigmentation in this patient?
A. Growth hormone (GH)
B. ,3-Lipotropin
C. Gonadotropins
D. Thyroid-stimulating hormone (TSH)
E. Melanocyte-stimulating hormone (MSH)

166) krok 2019
discipline:
topic:
A 38-year-old woman, who was diagnosed with systemic lupus erythematosus (SLE) 3 years ago, comes to her physician with a complaint of facial swelling and decreased urination that she first noticed 2 weeks ago. She currently takes azathioprine and corticosteroid. Her vital signs show blood pressure 150/90 mm Hg, pulse - 91/min., temperature - 36.8°C and respiratory rate - 15/min. On physical examination, the doctor notices erythematous rash on her face exhibiting a butterfly pattern. The laboratory studies reveal hypercholesterolemia, hypertriglyceridemia and proteinuria. Which of the following is the most likely mechanism of SLE's complication in this patient?
A. -
B. Immune complex-mediated glomerular disease
C. Increased plasma oncotic pressure
D. Decrease in renal blood flow (ischemic nephropathy)
E. Acute infection of the kidney

167) krok 2019
discipline:
topic:
A 64-year-old man presents with a tremor in his legs and arms. He says he has had the tremor for ''many

years'' but it has worsened in the last year. The tremor is more prominent at rest and nearly disappears on movement. His daughter mentions that his movements have become slower. The patient is afebrile and vital signs are within normal limits. On physical examination, the patient is hunched over and his face is expressionless throughout examination. There is a ''pill- rolling" resting tremor that is accentuated when the patient is asked to clench the contralateral hand and alleviated by finger- nose testing. When asked to walk across the room, the patient has difficulty taking the first step, has a stooped posture and takes short rapid shuffling steps. A doctor initiates pharmacotherapy and the drug of first line, levodopa. is prescribed. Which of the following is the most likely mechanism of action of this drug?

A. Cholinesterase inhibition
B. Stimulation of dopamine production
C.
C. Activation of M2-cholinergic receptors
D. Inhibition of M2-cholinergic receptors

168) krok 2019
discipline:
topic:
A 24-year-old man undergoes surgery and during the operation, an organ is excised and sent for histological evaluation. A light microscopic examination reveals the organ encased by thin connective tissue capsule that enters the substance of the lobes to further subdivide the organ into irregular lobular units. Each lobule contains a cluster of follicles filled with colloid. Follicular epithelium consists of low columnar, cuboidal or squamous cells depending on the level of activity of the follicle. Which of the following organs does this tissue most likely belong to?

A. **Parathyroid gland**
B. **Parotid gland**
C. **Thymus**
D. **Thyroid gland**
E. **Pancreas**

169) krok 2019
discipline:
topic:
A 37-year old female presents to the clinic complaining of severe pain in her left wrist and tingling sensation in her left thumb, index finger, and middle finger, and some part of her ring finger. The pain started as an occasional throb and she could ignore it or take ibuprofen but now the pain is much worse and wakes her up at night. She works as a typist and her pain mostly increases after typing all day. Her right wrist and fingers are fine. Nerve conduction studies reveal nerve compression. Which of the following nerves is most likely compressed in this patient?

A. Ulnar nerve
B. Radial nerve
C. Musculocutaneous nerve
D. Median nerve
E. Axillary nerve

170) krok 2019
discipline:
topic:
A 37-year-old man is admitted to hospital with mental confusion and disorientation. His wife reports he became more irritable and forgetful in the past year. In addition, she notes that he became a vegan a year ago, and currently, his diet consists of starchy foods like potatoes, corn, and leafy vegetables. GI symptoms include anorexia, diarrhea and vomiting. He has glossitis and skin lesions that appear as vesicles over the extremities. Eczema-like lesions around the mouth, as well as desquamation and roughened skin over the hands are also present. Neurologic examination reveals symmetrical hypesthesia for all types of sensation in both upper and lower extremities in a ''gloves and socks" distribution. Deficiency in diet of which of the following amino acids is the most likely cause of this condition?

A. Histidine
B. Lysine
C. Arginine
D. Tryptophan
E. Threonine

171) krok 2019
discipline:
topic:
A 54-year-old woman has a total thyroidectomy for papillary thyroid carcinoma. 11 hours after operation she complains of tingling around her mouth. On physical examination, the Trousseau's sign and Chvostek's sign are present. Her condition rapidly deteriorates with laryngospasm and focal seizures. The surgeon suggests surgical destruction of parathyroid glands. Which of the following is the most likely cause of this patient's neurologic abnormality?
A. Hyperkalemia
B. Hyperchloremia
C. Hypocalcemia
D. Hypophosphatemia
E. Hyponatremia

172) krok 2019
discipline:
topic:
An 11-year-old girl is brought to the doctor's office by her mother who states her daughter has been weak with swollen face for 3 days. The mother states her daughter had always been healthy and active until the initiation of symptoms. Upon inquiry, the girl describes a foamy appearance of her urine but denies blood in urine, urinary frequency at night, or pain during urination. Physical examination reveals generalized swelling of the face and pitting edema on the lower limbs. Laboratory study shows proteinuria and microscopic hematuria. Which of the following is the most likely cause of findings in the laboratory study of urine?
A. Increased hydrostatic pressure in Bowman's capsule
B. Increased plasma oncotic pressure
C. -
D. Increased permeability across the glomerular capillary wall
E. Increased glomerular hydrostatic pressure

173) krok 2019
discipline:
topic:
A 60-year old man with a history of hypertension, diabetes and hyperlipidemia had a sudden onset of right-sided weakness. By the time the ambulance arrived, he had difficulty speaking. Unfortunately, the patient died within the next 2 hours and an autopsy was performed immediately. The gross examination of the cerebral left hemisphere showed brain swelling, widened gyri and poorly demarcated gray-white junction. Which of the following is the most likely cause of this patient's death?
A. Ischemic stroke
B. Intracerebral hemorrhage
C. Tumor
D. Abscess
E. Cyst

174) krok 2019
discipline:
topic:
A 43-year-old man seeks evaluation at an emergency department with complaints of fever with chills, malaise, diffuse abdominal pain for over a week, diarrhea and loss of appetite. He says that his symptoms

are progressively getting worse. He recalls that the fever began slowly and climbed its way up stepwise to the current 39.8°C. His blood pressure is 110/70 mm Hg. A physical exam reveals a coated tongue, enlarged spleen and rose spots on the abdomen. Serologic study shows the agglutinin O titre of 1:200 by the Widal test. Which of the following is the most likely causative organism for this patient's condition?

A. *Mycobacterium tuberculosis*
B. *Vibrio cholerae*
C. *Salmonella typhi*
D. *Leptospira interrogans*
E. Enterohemorrhagic *E. coli*

175) krok 2019
discipline:
topic:
A team of medical students is performing research on phases of cell cycle. During one of the mitotic phases the cell is nearly done dividing, the chromosomes decondense and two nuclei begin to form around them. Which of the following phases most likely takes place in the cell?

A. **Anaphase**
B. **Prophase**
C. **Metaphase**
D. **Telophase**
E.

176) krok 2019
discipline:
topic:
A male neonate born to a 24-year- old primigravida had jaundice at 8 hours of life. The neonate's red blood cell type was A+, while the mothers RBC type was 0+. Laboratory studies revealed elevated titer of mother's anti-A antibody, normal erythrocyte glucose-6-phosphate and negative sickle cell test. The infant's hemoglobin was 106 g/L. Which of the following is the most likely cause of infant's jaundice?

A. Rh incompatibility
B. Decrease in hemoglobin level
C. Sickle cell disease
D. Glucose-6-phosphate dehydrogenase (G6PD) deficiency
E. Hyperbilirubinemia

177) krok 2019
discipline:
topic:
An unidentified surgical specimen is received for histopathologic analysis. A portion of the specimen is cut and stained with hematoxylin and eosin. Under the microscope, you see an organ encapsulated by dense connective tissue that extends to the deeper areas by way of the trabecular extensions. The organ can be subdivided into two regions: a cortex with lymphoid nodules and medulla with medullary cords populated by plasma cells, B-cells and T-cells. Which of the following structures is most likely the origin of this surgical specimen?

A. **Tonsils**
B. **Spleen**
C. **Thymus**
D. **Lymph node**
E. **Bone marrow**

178) krok 2019
discipline:
topic:
A 34-year-old man visits his dentist complaining of toothache. After a dental procedure that involved extraction of several teeth, he develops severe bleeding lasting more than 15 minutes. He has a history of

chronic hepatitis C. Which of the following is
the most likely cause of prolonged bleeding in this patient?

A. Hypofibrinogenemia
B. Hypoalbuminemia
C. Thrombocytopenia
D.
E. Hypocalcemia

179) krok 2019
discipline:
topic:
A group of researchers aimed to study cardiac physiology found that overstretching of atria in the heart leads to decreased sodium reabsorption in the distal convoluted tubule and increase in glomerular filtration rate. Which of the following is the most likely cause of physiologic effects discovered by researchers?

A. **Renin**
B. **Angiotensin**
C. **Antidiuretic hormone**
D. **Natriuretic peptide**
E. **Aldosterone**

180) krok 2019
discipline:
topic:
A 20-year-old female comes to the clinic after missing her last 2 periods. Her cycles are usually regular, occurring at 28-30 day interval with moderate bleeding and some abdominal discomfort. She also complains of progressively diminishing peripheral vision. Her doctor reveals loss of vision in the lateral halves of both eyes. Involvement of which of the following structures would you most likely expect to be the reason of bitemporal hemianopsia?

A. Optic chiasm
B. Right optic tract
C. Left optic tract
D. Right optic nerve
E. Left optic nerve