

№	krok 2023
Topic	biological peculiarities of human activity
Task	In some hereditary diseases (e.g.Kearns-Sayre syndrome), mitochondrial destruction can be observed. What cellular processes can be disturbed as a result of it?
Correct answer	ATP synthesis
B	Lipid synthesis
C	Protein synthesis
D	Nuclear division
E	Crossing over
№	krok 2023
Topic	biological peculiarities of human activity
Task	Prolonged exposure of a human body to toxic substances has resulted in destruction of the organelles that perform protein synthesis in the hepatocytes. Name these organelles.
Correct answer	Ribosomes
B	Lysosomes
C	Peroxisomes
D	Mitochondria
E	-
№	krok 2023
Topic	biological peculiarities of human activity
Task	The sequence of DNA triplets determines the arrangement of amino acids in a protein molecule. This characteristic of genetic code is called:
Correct answer	Colinearity
B	Non-overlapping
C	Universality
D	Redundancy
E	Triplet code

№	krok 2023
Topic	biological peculiarities of human activity
Task	Reading of the hereditary information encoded within a gene begins with pre-mRNA synthesis on a fragment of DNA matrix chain. Where does this process occur in the eukaryotic cells?
Correct answer	Nucleus
B	Centrosomes
C	Cytoplasm
D	Golgi complex
E	Ribosomes
№	krok 2023
Topic	biological peculiarities of human activity
Task	Gene expression is regulated by various mechanisms and activates upon induction of certain DNA regions. Name these regions.
Correct answer	Enhancer
B	Silencer
C	Attenuator
D	Spacer
E	Terminator
№	krok 2023
Topic	biological peculiarities of human activity
Task	Two nucleotides have been lost in the sequence of DNA nucleotides due to the effect of radiation. What type
Correct answer	Deletion
B	Replication
C	Duplication
D	Translocation
E	Inversion
№	krok 2023

Topic	biological peculiarities of human activity
Task	What structure in the cell becomes the main target, when exposed to ionizing radiation?
Correct answer	DNA
B	Sarcoplasmic reticulum
C	Cytoplasmic membrane
D	Mitochondria
E	Ribosomes
№	krok 2023
Topic	biological peculiarities of human activity
Task	maternal uncle and the son of the child's maternal aunt have myopathy too. What is the type of inheritance of this disease?
Correct answer	X-linked recessive
B	Autosomal recessive
C	Y-linked
D	Autosomal dominant
E	X-linked dominant
№	krok 2023
Topic	biological peculiarities of human activity
Task	A 2-month-old child have been diagnosd with cri-du-chat syndrome. This disease is caused by deletion of the short arm of autosome 5. What is the total number of chromosomes in this case?
Correct answer	46
B	44
C	45
D	47
E	23
№	krok 2023
Topic	biological peculiarities of human activity

Task	Amniocentesis detected karyotype 45,X0 in fetal epithelial cells. The mother and father are healthy. What is the likely diagnosis in this case?
Correct answer	Turner syndrome
B	Cri-du-chat syndrome
C	Patau syndrome
D	Trisomy X
E	Edwards syndrome
№	krok 2023
Topic	population, species, biogeocoenotic and biosphere levels of living matter organization
Task	In the body of a female <i>Anopheles</i> mosquito, the malaria <i>Plasmodium</i> reproduces via copulation (a type of sexual process). What type of host is this insect for malaria <i>Plasmodium</i> ?
Correct answer	Definitive
B	Reservoir
C	Optional
D	Additional
E	Intermediate
№	krok 2023
Topic	population, species, biogeocoenotic and biosphere levels of living matter organization
Task	What parasite has a mollusk as an intermediate host?
Correct answer	<i>Fasciola hepatica</i>
B	<i>Diphyllobothrium latum</i>
C	Echinococcus
D	Trichinella
E	Giardia
№	№
Topic	Biological peculiarities of human activity

Task	Heterozygous parents with A (II) and B (III) blood groups according to ABO system gave birth to a child. What is the probability of the child having 0 (I) blood group?
Correct answer	25%
B	100%
C	75%
D	50%
E	0%
№	krok 2017
Topic	Population, Species, Biogeocenotic and Biosphere Levels of living matter organization
Task	During dehelminthization a patient expelled long fragments of a segmented helminth. In some segments their width exceeds their length; there is a rosette-like uterus in the segment center. Name the helminth:
Correct answer	<i>Diphylobotrium latum</i>
B	<i>Taenia solium</i>
C	<i>Taeniarhynchus saginatus</i>
D	<i>Echinococcus</i>
E	<i>Hymenolepis nana</i>
№	krok 2017, 2016, 2014
Topic	Population, Species, Biogeocenotic and Biosphere Levels of living matter organization
Task	Carious cavities of a 29-year-old patient contain parasitic protozoa. It is established that they belong to the <i>Sarcodina</i> class. Specify these protozoa:
Correct answer	<i>Entamoeba gingivalis</i>
B	<i>Entamoeba coli</i>
C	<i>Entamoeba histolytica</i>
D	<i>Amoeba proteus</i>
E	<i>Lambliia intestinalis</i>
№	krok 2017
Topic	Biological peculiarities of human activity

Task	According to the law of constancy of chromosome numbers, most animal species have definite and constant chromosome number. The mechanism that maintains this constancy during sexual reproduction of organisms
Correct answer	Meiosis
B	Schizogony
C	Amitosis
D	Regeneration
E	-
№	krok 2017
Topic	Biological peculiarities of human activity
Task	At a certain stage of human ontogenesis, physiological bond occurs between circulatory systems of the mother and the fetus. This function is being carried out by the following provisory organ:
Correct answer	Placenta
B	Yolk sac
C	Amnion
D	Serous tunic
E	Allantois
№	krok 2017
Topic	Population, Species, Biogeoceanotic and Biosphere Levels of living matter organization
Task	In the armpits of a patient there are small (1-1,5 mm), dorsoventrally flattened, wingless, bloodsucking insects. Their larvae have been developing in the armpits as well. What disease is caused by these insects?
Correct answer	Phthiriasis
B	Sleeping sickness
C	Chagas' disease
D	Plague
E	Relapsing fever
№	krok 2017, 2022
Topic	Population, Species, Biogeoceanotic and Biosphere Levels of living matter organization

Task	In Western Europe nearly half of all congenital malformations occur in the children conceived in the period when pesticides were used extensively in the region. These congenital conditions are the result of the
Correct answer	Teratogenic
B	Carcinogenic
C	Malignization
D	Mutagenic
E	Mechanical
№	krok 2017
Topic	Biological peculiarities of human activity
Task	Gastrulation is the period of embryogenesis, when germinal layers are formed, resulting in threelayered structure of an embryo. What gastrulation mechanism is characteristic of a human embryo?
Correct answer	Delamination and immigration
B	Invagination
C	Epiboly
D	Immigration and invagination
E	Delamination and epiboly
№	krok 2017
Topic	Biological peculiarities of human activity
Task	Electron diffraction pattern of a spermatozoon clearly presents a sheath-like structure localized in the spermiocalypthroeca (anterior part of the head) and participating in dissolution of ovular membranes. Name this structure:
Correct answer	Acrosome
B	Centriole
C	Microtubules
D	Axoneme
E	Segmented columns
№	krok 2017

Topic	Biological peculiarities of human activity
Task	Micromanipulator was used to extract one of the two centriole of centrosome (cell center from hepatocyte (liver cell). What process will STOP OCCURRING in this cell?
Correct answer	Division
B	Energy exchange
C	Glycogen synthesis
D	Protein biosynthesis
E	Lipid synthesis
№	krok 2017, 2013
Topic	Population, Species, Biogeocoenotic and Biosphere Levels of living matter organization
Task	A patient complains of frequent bowel movements and stool with blood admixtures ("raspberry jelly" stool). Microscopic examination revealed large mononuclear cells with absorbed red blood cells. What protozoon is this morphological structure typical of?
Correct answer	<i>Entamoeba histolytica</i>
B	<i>Giardia lamblia</i>
C	<i>Campylobacter jejuni</i>
D	<i>Toxoplasma gondii</i>
E	<i>Balantidium coli</i>
№	krok 2017
Topic	Biological peculiarities of human activity
Task	A newborn boy has been diagnosed with hydrocephalus. Doctors consider it to be caused by teratogenic factors. What germ layers are affected by the teratogen?
Correct answer	Ectoderm
B	All embryo germ layers
C	Endoderm and mesoderm
D	Endoderm
E	Mesoderm

№	krok 2017
Topic	Biological peculiarities of human activity
Task	Cytogenetic analysis allowed to determine the patient's karyotype - 47, XY, +21/46, XY. Name this
Correct answer	Mosaicism
B	Deletion
C	Translocation
D	Genocopy
E	Phenocopy
№	krok 2017
Topic	Population, Species, Biogeoceonotic and Biosphere Levels of living matter organization
Task	In the patient's feces there were eggs of <i>Fasciola hepatica</i> . The doctor, however, refrained from making diagnosis and insisted on a repeat of analysis, with beef liver excluded from the patient's diet. What led the doctor to make such decision?
Correct answer	Possible phenomenon of transient eggs
B	Absent symptoms of invasion
C	Uncertainty regarding the analysis precision
D	Insufficient qualification of a laboratory assistant
E	Lack of trust towards the investigation method
№	krok 2017
Topic	Population, Species, Biogeoceonotic and Biosphere Levels of living matter organization
Task	A patient consulted a therapist with complaints of pain in the chest, cough, fever. X-ray revealed eosinophilic infiltrates in the lungs, further investigation of which allowed to detect presence of larvae. What helminthiasis is it characteristic of?
Correct answer	Ascariasis
B	Echinococcosis
C	Fascioliasis
D	Cysticercosis

E	Trichiniasis
№	krok 2017
Topic	Biological peculiarities of human activity
Task	Cytochemical investigation revealed high content of hydrolytic enzymes in the cytoplasm. This phenomenon indicates the activity of the following organelles:
Correct answer	Lysosomes
B	Endoplasmic reticulum
C	Mitochondria
D	Polysomes
E	Cell center
№	krok 2017
Topic	Biological peculiarities of human activity
Task	Deaf parents with genotypes DD ^{ee} and dd ^{EE} gave birth to a girl with normal hearing. Specify the form of D and E genes interaction:
Correct answer	Complementary interaction
B	Complete dominance
C	Epistasis
D	Polymery
E	Overdominance
№	krok 2017
Topic	Biological peculiarities of human activity
Task	A girl is diagnosed with primary microcephaly that is a monogenic autosomal recessive disease. Her natural brother develops normally. What genotypes do the parents of these children have?
Correct answer	Aa x Aa
B	AA x AA
C	aa x aa
D	AA x aa

E	AABB x AABB
№	krok 2017
Topic	Population, Species, Biogeocoenotic and Biosphere Levels of living matter organization
Task	A patient has been hospitalised with provisional diagnosis of diphyllbothriasis. What food products can be the cause of this condition?
Correct answer	Fish
B	Pork
C	Beef
D	Milk and eggs
E	Fruit and vegetables
№	krok 2017
Topic	Biological peculiarities of human activity
Task	Autosomal nondisjunction had occurred in a woman during meiosis. An ovum with the third copy of the 18th chromosome was formed. The ovum was impregnated by normal spermatozoon. The resulting child will
Correct answer	Edwards syndrome
B	Klinefelter syndrome
C	Patau syndrome
D	Turner syndrome
E	Down syndrome
№	krok 2017
Topic	Biological peculiarities of human activity
Task	Amino acids join to each other in ribosomes of granular endoplasmic reticulum. Knowing the sequence of amino acids and applying genetic code, it is possible to determine the sequence of nucleoids in:
Correct answer	mRNA
B	Introns
C	Proteins
D	Carbohydrates

E	rRNA
№	krok 2016
Topic	Population, Species, Biogeocenotic and Biosphere Levels of living matter organization
Task	A puncture sample taken from the lymph node of a patient with preliminary diagnosis of protozoan disease has been investigated. The preparation was processed with Giemsa stain and the following was detected: crescent-shaped bodies with pointed tips, blue cytoplasm and red nuclei. What protozoa have been detected?
Correct answer	Toxoplasma
B	Plasmodium malariae
C	Dermatotropic Leishmania
D	Viscerotropic Leishmania
E	Trypanosoma
№	krok 2016
Topic	Biological peculiarities of human activity
Task	In the preparation of a 10-day-old human embryo there are 2 contacting sacs visible (amniotic and vitelline). Name the structure situated at the place of the contact:
Correct answer	Embryonic shield
B	Fundus of the amniotic sac
C	Fornix of the vitelline sac
D	Amniotic pedicle
E	Extraembryonic mesoderm
№	krok 2016
Topic	Biological peculiarities of human activity
Task	Genetic information is stored in DNA but does not participate directly in protein synthesis within DNA cells. What process ensures transfer of genetic information into polypeptide chain?
Correct answer	Translation
B	Formation of rRNA
C	Formation of tRNA

D	Formation of iRNA
E	Replication
№	krok 2016
Topic	Biological peculiarities of human activity
Task	A woman who had been consuming alcohol excessively during her pregnancy had a child with cleft palate and upper lip. These presentations are indicative of some chromosomal anomalies. What process do they
Correct answer	Teratogenesis
B	Carcinogenesis
C	Mutagenesis
D	Phylogenesis
E	Ontogenesis
№	krok 2016
Topic	Biological peculiarities of human activity
Task	In the course of evolution there developed molecular mechanisms for correction of damaged DNA molecules. This process is called:
Correct answer	Reparation
B	Transcription
C	Translation
D	Replication
E	Processing
№	krok 2016
Topic	Biological peculiarities of human activity
Task	A woman had been taking synthetic hormones during her pregnancy. Her newborn girl presents with excessive hairiness which has formal resemblance to adrenogenital syndrome. This sign of variability is
Correct answer	Phenocopy
B	Mutation
C	Recombination

D	Heterosis
E	Replication
№	krok 2016
Topic	Population, Species, Biogeocenotic and Biosphere Levels of living matter organization
Task	A concerned mother addressed a pediatrician with complaints of her child suffering from frequent stomachaches, loss of appetite, nausea, constipation. Feces analysis detected rounded eggs with double capsules and oncospheres localized in their centers. The child was diagnosed with hymenolepiasis. Specify the type of infection transmission, considering that the invasion intensity was extremely high:
Correct answer	Autoinvasion
B	Alimentary
C	Sexual
D	Contamination
E	Immediate contagion
№	krok 2016
Topic	Biological peculiarities of human activity
Task	Under the influence of physical factors there can develop defects in a DNA molecule. Ultraviolet irradiation, for instance, can cause development of dimers. Dimers are two adjacent pyrimidine bases joined together. Name these bases:
Correct answer	Thymine and cytosine
B	Adenine and thymine
C	Guanine and cytosine
D	Adenine and guanine
E	Guanine and thymine
№	krok 2016, 2015, 2013
Topic	Biological peculiarities of human activity

Task	Phenylketonuria is a disease caused by a recessive gene that is localized in an autosome. Parents are heterozygous for this gene. They already have two sons with phenylketonuria and one healthy daughter. What is the probability that their fourth child will have the disease too?
Correct answer	25%
B	0%
C	50%
D	75%
E	100%
№	krok 2016
Topic	Biological peculiarities of human activity
Task	When examining a female patient a doctor observed the following: misshapen auricles, elevated palate, teeth growth disorder; mental retardation; no disruption of reproductive function. Provisional diagnosis is the "super woman" syndrome. Point out the karyotype of this disease:
Correct answer	(47, XXX)
B	(47, XXY)
C	(47, YYY)
D	(47, XYY)
E	(45, X0)
№	krok 2016
Topic	Biological peculiarities of human activity
Task	A 36-year-old patient underwent tooth extraction at a dental clinic. After two weeks the stratified squamous epithelium regenerated at the site of extraction. What organelles were involved in the restoration of the
Correct answer	Ribosomes
B	Centrosomes
C	Postlysosomes
D	Smooth EPR
E	Mitochondria

№	krok 2016
Topic	Biological peculiarities of human activity
Task	A woman is diagnosed with Turner syndrome (karyotype 45, X0). How many autosomal pairs would her somatic cells contain?
Correct answer	22
B	24
C	23
D	44
E	45
№	krok 2016
Topic	Population, Species, Biogeocoenotic and Biosphere Levels of living matter organization
Task	Indigenous population of Pamir has the following characteristic features: high rate of base metabolism, elongated tubular bones, wide rib cage, high blood oxygen capacity due to increased number of erythrocytes, high hemoglobin content. What type of ecological adaptation is it?
Correct answer	Mountain
B	Temperate
C	Arctic
D	Tropical
E	Subtropical
№	krok 2016
Topic	Biological peculiarities of human activity
Task	Chromosomal complement of a woman contains a chromosome with arms p and q of equal length. What morphological type does this chromosome belong to?
Correct answer	Metacentric
B	Acrocentric
C	Submetacentric
D	Telocentric

E	Subacrocentric
№	krok 2016
Topic	Biological peculiarities of human activity
Task	Patients suffering from xeroderma pigmentosum have extremely photosensitive skin due to disrupted excision repair. Specify the process that is affected in such patients:
Correct answer	Repair of DNA molecule
B	Synthesis of iRNA
C	Maturation of iRNA
D	Synthesis of protein primary structure
E	Intron extraction and exon connection
№	krok 2015
Topic	Biological peculiarities of human activity
Task	Nucleoli of nuclei have been damaged due to tissue culture nuclear irradiation. Regeneration of the following organelles becomes hampered in cytoplasm:
Correct answer	Ribosomes
B	Lysosomes
C	Endoplasmic reticulum
D	Microtubules
E	Golgi apparatus
№	krok 2015, 2012
Topic	Biological peculiarities of human activity
Task	As a result of a development anomaly a newborn has malformation of major salivary glands. This anomaly is caused by the damage of the following embryonal structure:
Correct answer	Ectoderm
B	Splanchnotom
C	Somites
D	Entoderm

E	Mesenchyme
№	krok 2015
Topic	Population, Species, Biogeocenotic and Biosphere Levels of living matter organization
Task	Microscopy of perianal folds scrape has revealed colourless eggs in the shape of asymmetrical ovals sized 50x23 micrometers. Name the kind of helminth.
Correct answer	Pin worm (Enterobius)
B	Ascarid (Ascaris lumbricoides)
C	Hookworm (Ancylostoma duodenale)
D	Whipworm (Trichuris)
E	Dwarf tapeworm (Hymenolepis nana)
№	krok 2015, 2014
Topic	Biological peculiarities of human activity
Task	Human X chromosome contains a dominant gene that is responsible for normal blood clotting. An autosomal dominant gene plays a similar role. Lack of any of these genes leads to the coagulation disorder. The form of interaction between these genes is called:
Correct answer	Complementarity
B	Epistasis
C	Polymerism
D	Codominance
E	Pleiotropy
№	krok 2015
Topic	Biological peculiarities of human activity
Task	As a result of treatment of viral RNA with nitrous acid, UAA triplet mutated to UGA triplet. What kind of mutation occurred?
Correct answer	Transition
B	Nucleotide deletion
C	Missense

D	Nucleotide insertion
E	Inversion
№	krok 2015
Topic	Population, Species, Biogeocenotic and Biosphere Levels of living matter organization
Task	A young man has the following symptoms: purulent acne on the face; wrinkled, hyperemic skin; eyebrows and eyelashes are falling out. A doctor has made a diagnosis of demodicosis (demodectic mange). What preventive measures can be recommended?
Correct answer	Maintaining personal hygiene
B	Protection from mite bites
C	Repellents
D	Processing premises with insecticides
E	Donor blood checkup
№	krok 2015, 2014
Topic	Population, Species, Biogeocenotic and Biosphere Levels of living matter organization
Task	After arriving in the polar region, researchers from Australia have complained of nervous disorders, loss of appetite, aggravation of chronic diseases for 6 months. What process has been disrupted in extreme
Correct answer	Adaptation
B	Tolerance
C	Tachyphylaxis
D	Stress
E	Reparation
№	krok 2015, 2012
Topic	Biological peculiarities of human activity
Task	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?
Correct answer	Rhesus incompatibility
B	Hereditary chromosomal pathology

C	AB0-incompatibility
D	Intrauterine intoxication
E	Intrauterine infection
№	krok 2015
Topic	Biological peculiarities of human activity
Task	X-chromatin test of somatic cells is used for quick diagnostics of hereditary diseases caused by variations of sex chromosomes number. What is the karyotype of a male, whose cells mostly contain one X-chromatin
Correct answer	47, XXY
B	45, X0
C	46, XY
D	48, XXXY
E	49, XXXXY
№	krok 2015, 2013
Topic	Population, Species, Biogeocenotic and Biosphere Levels of living matter organization
Task	A patient has been preliminarily diagnosed with paragonimiasis. This disease is caused by lung flukes. The causative agent entered into the patient's body through:
Correct answer	Eating half-cooked lobsters and crabs
B	Eating unwashed vegetables
C	Contact with an infected cat
D	Eating half-cooked or dried fish
E	Drinking raw water from open reservoirs
№	krok 2015, 2012, 2011
Topic	Population, Species, Biogeocenotic and Biosphere Levels of living matter organization
Task	A shepherd who has tended sheep together with dogs consulted a doctor about pain in his right subcostal area, nausea, vomiting. Roentgenoscopy revealed a tumour-like formation. What kind of helminthiasis might
Correct answer	Echinococcosis
B	Ascariidiasis

C	Enterobiasis
D	Taeniarhynchosis
E	Taeniasis
№	krok 2015
Topic	Biological peculiarities of human activity
Task	A young couple has a child with encephalopathy. A doctor determined this disease to be caused by mitochondrial DNA disorder. In what way are mitochondrial pathologies inherited?
Correct answer	From mother to all her children
B	From mother to son
C	From father to daughter
D	From father to son
E	From both parents to all their children
№	krok 2015, 2013
Topic	Population, Species, Biogeocoenotic and Biosphere Levels of living matter organization
Task	Microscopy of dental plaque revealed unicellular organisms. Their cytoplasm had two distinct layers, barely visible core, wide pseudopodia. The patient is most likely to have:
Correct answer	<i>Entamoeba gingivalis</i>
B	<i>Lambliia</i>
C	<i>Trichomonas tenax</i>
D	<i>Entamoeba histolytica</i>
E	<i>Entamoeba coli</i>
№	krok 2015
Topic	Biological peculiarities of human activity
Task	Ability to divide is characteristic of procariotic and eukaryotic cells. Procariotic cell division is different from that of eukaryotic, but there is one molecular process that is the basis of both types of division. Name
Correct answer	DNA replication
B	Transcription

C	Reparation
D	Translation
E	Gene amplification
№	krok 2014
Topic	Biological peculiarities of human activity
Task	In some areas of South Africa many people have sickle cell disease characterized by red blood cells that assume an abnormal sickle shape due to the substitution of glutamic acid for valine in the hemoglobin molecule. What is the cause of this disease?
Correct answer	Gene mutation
B	Disturbances of the mechanisms of genetic information transmission
C	Crossing-over
D	Genomic mutation
E	Transduction
№	krok 2014
Topic	Biological peculiarities of human activity
Task	Examination of an 18-year-old girl revealed the following features: ovarian hypoplasia, broad shoulders, narrow hips, shortening of the lower extremities, webbed neck. Mental development is normal. The patient has been diagnosed with Turner syndrome. What chromosomal abnormality does this patient have?
Correct answer	Monosomy X
B	Trisomy X
C	Trisomy 13
D	Trisomy 18
E	Nullisomy X
№	krok 2014
Topic	Biological peculiarities of human activity
Task	Mother and father are healthy. Mother underwent amniocentesis for fetal karyotyping. The fetal karyotype turned out to be 45, XO. What syndrome can be expected in a newborn baby?

Correct answer	Turner
B	Edwards
C	Patau
D	Cri du chat
E	"Superwoman"
№	krok 2014
Topic	Biological peculiarities of human activity
Task	A physician collects the patient's history of the postembryonic period of ontogenesis from birth to puberty. In this case we are talking about:
Correct answer	Juvenile period
B	The first period of adulthood
C	Senium
D	The second period of adulthood
E	Advanced age
№	krok 2014
Topic	Biological peculiarities of human activity
Task	Genealogical study of a family with hereditary enamel hypoplasia has revealed that the disease occurs in every generation. In women, the anomaly occurs more frequently than in men. Male patients only pass this trait to their daughters. What type of inheritance takes place in this case?
Correct answer	X-linked dominant
B	Autosomal dominant
C	Autosomal recessive
D	Y-linked
E	X-linked recessive
№	krok 2014
Topic	Biological peculiarities of human activity

Task	A female with Rh-negative blood of A (II) type has a child with AB (IV) type who has been diagnosed with hemolytic disease resulting from Rh-conflict. What blood type may the baby's father have?
Correct answer	III (B), Rh-positive
B	I (0), Rh-positive
C	II (A), Rh-positive
D	IV (AB), Rh-negative
E	III (B), Rh-negative
№	krok 2014
Topic	Population, Species, Biogeocoenotic and Biosphere Levels of living matter organization
Task	A 40-year-old patient presents with abdominal pain, frequent loose stools with mucus and blood. Stool analysis revealed vegetative forms of some protozoa sized 30-40 microns, with short pseudopodia, containing large amounts of phagocytosed erythrocytes. What protozoan disease does the patient have?
Correct answer	Amebiasis
B	Leishmaniasis
C	Trichomoniasis
D	Giardiasis
E	Toxoplasmosis
№	krok 2014
Topic	Biological peculiarities of human activity
Task	During reproduction of some RNA-containing viruses that cause tumors in animals, genetic information can be transmitted in the opposite direction from the RNA to the DNA via a specific enzyme. The enzyme of reverse transcription is called:
Correct answer	Reverse transcriptase
B	DNA polymerase
C	Ligase
D	Primase
E	Topoisomerase

№	krok 2014
Topic	Biological peculiarities of human activity
Task	If a trait is determined mostly by genetic factors, the percentage of concordance between the twins is much higher in monozygotic twins than in dizygotic ones. What is the percentage of blood group concordance in
Correct answer	100%
B	75%
C	50%
D	25%
E	0%
№	krok 2014
Topic	Population, Species, Biogeocoenotic and Biosphere Levels of living matter organization
Task	In case of some helminthiases, an affected person can detect helminth himself because mature segments of the causative agent are able to crawl out of the anus. This is typical for the following disease:
Correct answer	Beef tapeworm infection
B	Pork tapeworm infection
C	Hymenolepiasis
D	Bothriocephaliasis
E	Echinococcosis
№	krok 2014
Topic	Biological peculiarities of human activity
Task	Examination of a 28-year-old patient with hepatocerebral degeneration revealed an impairment of ceruloplasmin synthesis. This defect is associated with the following organelles:
Correct answer	Granular endoplasmic reticulum
B	Smooth endoplasmic reticulum
C	Mitochondria
D	Lysosomes
E	Golgi complex

№	krok 2014
Topic	Biological peculiarities of human activity
Task	In the uterine cavity an embryo was found that was not attached to the endometrium. What stage of embryonal development is it?
Correct answer	Blastocyst
B	Zygote
C	Mulberry body
D	Neurula
E	Gastrula
№	krok 2014
Topic	Population, Species, Biogeocoenotic and Biosphere Levels of living matter organization
Task	A man visited Lebanon. Soon after return he felt pain and heaviness in the perineum and suprapubic region. On examination he was diagnosed with urogenital schistosomiasis. In what way could he become infected?
Correct answer	By swimming in contaminated waters
B	By eating unwashed fruit and vegetables
C	By eating insufficiently salted fish
D	By eating undercooked meat of cattle
E	By eating undercooked meat of crayfish and crabs
№	krok 2013
Topic	Biological peculiarities of human activity
Task	Enamel hypoplasia is caused by a dominant gene localized in the X chromosome. Mother has a normal enamel, and father has enamel hypoplasia. Which of children will have this anomaly?
Correct answer	Only the daughters
B	All the children
C	Only the sons
D	Half of the daughters
E	Half of the sons

№	krok 2013
Topic	Population, Species, Biogeoceonotic and Biosphere Levels of living matter organization
Task	In the perianal folds of a 5-year-old girl mother found white worms causing itch and anxiety, and took them to the laboratory. The study revealed white filament-like helminths 0,5-1 cm long, with pointed, sometimes twisted, ends. What diagnosis can be made?
Correct answer	Enterobiasis
B	Diphyllobothriasis
C	Teniasis
D	Ascariasis
E	Opisthorchiasis
№	krok 2013
Topic	Population, Species, Biogeoceonotic and Biosphere Levels of living matter organization
Task	A hospital in Donetsk region admitted the patients - members of the same family - with eyelid and face edemata, fever, eosinophilia, headache, muscle pain. The disease developed on the 7-10 day after eating pork sausage sent by the patients' relatives from Khmel'nitsky region. What is your provisional diagnosis?
Correct answer	Trichinosis
B	Echinococcosis
C	Teniasis
D	Cysticercosis
E	Taeniarhynchosis
№	krok 2013
Topic	Biological peculiarities of human activity
Task	It is known that the gene responsible for the development of the MN blood groups has two allelic states. If the gene M is considered as the initial gene, the allelic gene N appeared due to:
Correct answer	Mutations
B	Gene combinations
C	DNA repair

D	DNA replication
E	Crossing over
№	krok 2013
Topic	Biological peculiarities of human activity
Task	At a certain stage of development of a human embryo one can observe formation of a cavity in its structure, small light blastomeres on the periphery and large dark blastomeres at one of the poles. The embryo at this stage of development is called:
Correct answer	Blastocyst
B	Morula
C	Zygote
D	Gastrula
E	Blastodisk
№	krok 2013
Topic	Biological peculiarities of human activity
Task	A woman got infected with rubella during pregnancy. The child was born with malformations, namely cleft lip and palate. The child's genotype is normal. These malformations are a manifestation of:
Correct answer	Modification variability
B	Polyploidies
C	Combinatory variability
D	Chromosomal mutations
E	Aneuploidies
№	krok 2013
Topic	Biological peculiarities of human activity
Task	DNA replication occurs during the cell division when a signal is received from the cytoplasm, and a certain portion of the DNA helix is unwound and divided into two chains. The helix is unwound by the following
Correct answer	Helicase
B	RNA polymerase

C	Ligase
D	Restrictase
E	DNA polymerase
№	krok 2013
Topic	Population, Species, Biogeoceonotic and Biosphere Levels of living matter organization
Task	Examples of human-specific parasites are malaria plasmodium, enterobius vermicularis and some other. The source of invasion of such parasites is always a human. Such human-specific parasites cause diseases that
Correct answer	Anthroponotic
B	Zoonotic
C	Anthropozoonotic
D	Infectious
E	Multifactorial
№	krok 2013
Topic	Biological peculiarities of human activity
Task	Detection of X-chromatin in somatic cells is used for the quick diagnosis of hereditary diseases associated with a change in the sex chromosome number. Vast majority of a man's cells have three X-chromatin bodies. What is the man's karyotype?
Correct answer	49, XXXXY
B	45, X
C	46, XY
D	47, XXY
E	48, XXXY
№	krok 2013
Topic	Biological peculiarities of human activity
Task	Nucleolus organizers of human chromosomes 13-15, 21, 22 include about gene clusters that synthesize RNA. These chromosomal regions contain the information on the following type of RNA:
Correct answer	rRNA

B	tRNA
C	mRNA
D	snRNA
E	tRNA + rRNA
№	krok 2013
Topic	Biological peculiarities of human activity
Task	Cytogenetic analysis established that the patient had the 47, XYY karyotype. The extra chromosome in the karyotype has a centromere located very close to one of the chromosome ends so that one chromosomal arm is much shorter than the other one. Such a chromosome is called:
Correct answer	Acrocentric
B	Metacentric
C	Submetacentric
D	Telocentric
E	Submetacentric with a satellite
№	krok 2013
Topic	Population, Species, Biogeocoenotic and Biosphere Levels of living matter organization
Task	After a thorough examination the patient who had returned from Central Asia to Ukraine was diagnosed with spring-summer encephalitis. Its pathogen might have entered the body through the bite of the following
Correct answer	Dog tick
B	Taiga tick
C	Argasid tick (ornithodoros papillipes)
D	Itch mite
E	Mosquito
№	krok 2013
Topic	Biological peculiarities of human activity

Task	Treatment of a patient with hereditary form of immunodeficiency involved gene therapy: the enzyme gene was introduced into the cells of the patient by means of a retrovirus. What property of the genetic code allows to use retroviruses as vectors of functional genes?
Correct answer	Universality
B	Specificity
C	Collinearity
D	Continuity
E	Redundancy
№	krok 2012, 2011
Topic	Biological peculiarities of human activity
Task	Studying the mitotic cycle phases of an onion root the researchers revealed a cell with chromosomes lying in equatorial plane in form of a star. What phase of mitosis is it?
Correct answer	Metaphase
B	Prophase
C	Anaphase
D	Telophase
E	Interphase
№	krok 2012, 2007
Topic	Biological peculiarities of human activity
Task	Microspecimen of a child's finger skin reveals subnormal development of epidermis. What embryonic leaf was damaged in course of development?
Correct answer	Ectoderm
B	Mesoderm
C	Entoderm
D	Mesenchyma
E	Ectomesenchyma
№	krok 2012, 2011, 2010

Topic	Population, Species, Biogeocoenotic and Biosphere Levels of living matter organization
Task	While examining a blood smear taken from a patient and stained by Romanovsky's method a doctor revealed some protozoa and diagnosed the patient with Chagas disease. What protozoan is the causative agent of this
Correct answer	<i>Trypanosoma cruzi</i>
B	<i>Toxoplasma gondii</i>
C	<i>Leishmania donovani</i>
D	<i>Leishmania tropica</i>
E	<i>Trypanosoma brucei</i>
№	krok 2012, 2008
Topic	Biological peculiarities of human activity
Task	An 18-year-old boy applied to a geneticist. The boy has asthenic constitution: narrow shoulders, broad pelvis, nearly hairless face. Evident mental deficiency. The provisional diagnosis was Klinefelter syndrome. What method of clinical genetics will enable the doctor to confirm this diagnosis?
Correct answer	Cytogenetic
B	Genealogical
C	Twin study
D	Dermatoglyphics
E	Population-and-statistical
№	krok 2012, 2011
Topic	Biological peculiarities of human activity
Task	According to the phenotypic diagnosis a female patient has been provisionally diagnosed with X-chromosome polysomia. This diagnosis can be confirmed by a cytogenetic method. What karyotype will allow to confirm the diagnosis?
Correct answer	47(XXX)
B	48(XXXY)
C	48(XXYY)
D	47(XXY)

E	46(XX)
№	krok 2012, 2008
Topic	Biological peculiarities of human activity
Task	An embryo has signs of disturbed process of dorsal mesoderm segmentation and somite generation. What part of skin is most likely to have developmental abnormalities?
Correct answer	Derma
B	Hair
C	Sebaceous glands
D	Epidermis
E	Sudoriferous glands
№	krok 2012
Topic	Biological peculiarities of human activity
Task	A child presents with body shortness, mental deficiency, mongoloid palpebral fissures, epicanthal fold, enlarged grooved tongue protruding from the mouth, high palate, malocclusion, diastema, cross striation of lips. What hereditary disease are these presentations typical for?
Correct answer	Down syndrome
B	Patau syndrome
C	Edwards syndrome
D	Turner syndrome
E	Klinefelter syndrome
№	krok 2012, 2010
Topic	Population, Species, Biogeocenotic and Biosphere Levels of living matter organization
Task	A patient has roundish ulcers on his face, inflammation and enlargement of lymph nodes. These symptoms turned up as a result of mosquito bites. Laboratory examination of discharge from the ulcers revealed unicellular aflagellar organisms. What is the most probable diagnosis?
Correct answer	Dermatotropic leishmaniasis
B	Toxoplasmosis

C	Scabies
D	Trypanosomiasis
E	Myasis
№	krok 2012, 2010
Topic	Biological peculiarities of human activity
Task	Cytogenetic examination of a patient with dysfunction of the reproductive system revealed normal karyotype 46,XY in some cells, but most cells have Klinefelter syndrome karyotype - 47,XXY. Such phenomenon of cell inhomogeneity is called:
Correct answer	Mosaicism
B	Inversion
C	Transposition
D	Duplication
E	Heterogeneity
№	krok 2012
Topic	Biological peculiarities of human activity
Task	A woman had taken synthetic hormones during her pregnancy. Her newborn girl presents with excessive hairiness which has formal resemblance to adrenogenital syndrome. This sign of variability is called:
Correct answer	Phenocopy
B	Mutation
C	Recombination
D	Heterosis
E	Replication
№	krok 2012
Topic	Biological peculiarities of human activity
Task	Skin of patients with pigment xeroderma is very sensitive to the sun radiation, there is a risk of skin cancer development. The reason for this is hereditary deficiency of UF-endonuclease. As a result of this defect the following process is disturbed:

Correct answer	DNA reparation
B	Transcription
C	DNA replication
D	Translation
E	Initiation
№	krok 2012
Topic	Population, Species, Biogeocoonotic and Biosphere Levels of living matter organization
Task	Examination of duodenal contents revealed some pyriform protozoa with twin nuclei and four pairs of flagella. There were two supporting filaments between the nuclei and a suckorial disc on the ventral side. What representative of protozoa was revealed in this patient?
Correct answer	Lamblia
B	Toxoplasma
C	Leishmania
D	Intestinal trichomonad
E	Trypanosome
№	krok 2012
Topic	Biological peculiarities of human activity
Task	A cell of granular endoplasmatic reticulum is at the stage of translation, when mRNA advances to the ribosomes. Amino acids get bound by peptide bonds in a certain sequence thus causing polypeptide biosynthesis. The sequence of amino acids in a polypeptide corresponds with the sequence of:
Correct answer	mRNA codons
B	tRNA nucleotides
C	tRNA anticodons
D	rRNA nucleotides
E	rRNA anticodons
№	krok 2011
Topic	Biological peculiarities of human activity

Task	Premolar teeth absence is inherited as an autosomal dominant factor. Parents with normal dental system gave birth to a child with lacking premolar teeth. What is the probability of giving birth to children without this pathology (%) in this family?
Correct answer	75%
B	50%
C	25%
D	12,50%
E	0%
№	krok 2011
Topic	Population, Species, Biogeocenotic and Biosphere Levels of living matter organization
Task	A mother consulted a pediatrician about small white filiform worms about 1 cm long with pointed ends that she found on her child's underwear. According to the mother, the child sleeps badly, grits his teeth, scratches the area of anus. Specify the helminth type:
Correct answer	Pinworm
B	Ascarid
C	Trichuris
D	Armed tapeworm
E	Hookworm
№	krok 2011
Topic	Biological peculiarities of human activity
Task	A couple has a son with haemophilia. The parents are healthy but the maternal grandfather also has haemophilia. Specify the type of inheritance:
Correct answer	Recessive sex-linked
B	Recessive autosomal
C	Dominant sex-linked
D	Semidominance
E	Autosomal dominant

№	krok 2011
Topic	Biological peculiarities of human activity
Task	An embryo has a disturbed development of cardiovascular system caused by a teratogenic factor. This disturbance occurred in the following germ layer:
Correct answer	Mesoderm
B	Entoderm
C	Exoderm
D	Ento- and mesoderm
E	Ento- and ectoderm
№	krok 2011, 2010
Topic	Biological peculiarities of human activity
Task	Inside a human cell the informational RNA containing both exons and introns was delivered to the granular endoplasmic reticulum to the ribosomes. What process does NOT take place?
Correct answer	Processing
B	Replication
C	Transcription
D	Translation
E	Prolongation
№	krok 2011
Topic	Population, Species, Biogeoceanotic and Biosphere Levels of living matter organization
Task	Two weeks after haemotransfusion a patient has developed fever. What protozoal disease can be suspected?
Correct answer	Malaria
B	Toxoplasmosis
C	Leishmaniasis
D	Amebiasis
E	Trypanosomiasis
№	krok 2011

Topic	Biological peculiarities of human activity
Task	One of the protein synthesis stages is recognition. The first iRNA triplet starts with UAU triplet. What complementary triplet is found in tRNA?
Correct answer	AUA
B	AAA
C	GUG
D	UGU
E	CUC
№	krok 2011
Topic	Biological peculiarities of human activity
Task	Examination of newborns in one of the Ukrainian cities revealed a baby with phenylketonuria. The baby's parents don't suffer from this disease and have two other healthy children. Specify the most likely parents' genotype with phenylketonuria gene:
Correct answer	<i>Aa x Aa</i>
B	<i>AA x aa</i>
C	<i>aa x aa</i>
D	<i>Aa x aa</i>
E	<i>Aa x AA</i>
№	krok 2011
Topic	Biological peculiarities of human activity
Task	A cell with vitamin E deficit had been affected by ionizing radiation. This induced an intensified release of hydrolytic enzymes into the cytoplasm and thus a complete destruction of intracellular structures - autolysis. What organellas caused this phenomenon?
Correct answer	Lysosomes
B	Endoplasmic reticulum
C	Golgi complex
D	Microbodies

E	Mitochondrions
№	krok 2011, 2010
Topic	Population, Species, Biogeocenotic and Biosphere Levels of living matter organization
Task	Dehelmintization of a patient revealed some long fragments of a helminth with segmented structure. Mature segments were rectangular, 30x12 mm large, closed type matrix was in form of a stem with 17-35 lateral branches. Specify this helminth:
Correct answer	Unarmed tapeworm
B	Alveococcus
C	Echinococcus
D	Dwarf tapeworm
E	Armed tapeworm
№	krok 2011
Topic	Population, Species, Biogeocenotic and Biosphere Levels of living matter organization
Task	A patient complains of skin itch, especially between fingers, in the inguinal creases, on the lower abdomen. Examination of these regions revealed there some small vesicles. Laboratory diagnostics allowed to establish that this condition had been caused by a representative of Arthropoda. Specify the disease caused by this
Correct answer	Scabies
B	Demodicosis
C	Myiasis
D	Pediculosis
E	Dermatotropic leishmaniasis
№	krok 2011, 2010
Topic	Biological peculiarities of human activity
Task	Cystinuria in humans shows itself in form of cystine stones in kidneys (homozygotes) or else an increased rate of cystine in urine (heterozygotes). Cystinuria is a monogenic disease. Specify the type of interaction between cystinuria genes and normal rate of cystine in urine:
Correct answer	Semidominance

B	Epistasis
C	Complete dominance
D	Complementarity
E	Codomination
№	krok 2010
Topic	Biological peculiarities of human activity
Task	Heterozygous parents with A(II) and B(III) blood group according to the AB0 system have got a child. What is the probability that the child has 0(I) blood group?
Correct answer	25%
B	100%
C	75%
D	50%
E	0%
№	krok 2010
Topic	Biological peculiarities of human activity
Task	As a result of iodine deficiency in foodstuffs Transcarpathian people often have endemic goiter. This disease is caused by the following type of variability:
Correct answer	Modification
B	Mutational
C	Combinatorial
D	Ontogenetic
E	Correlative
№	krok 2010
Topic	Biological peculiarities of human activity
Task	A girl who was provisionally diagnosed with Turner's syndrome came to a genetic consultation. The diagnosis can be specified by means of the following genetic method:
Correct answer	Sex chromatin test

B	Genealogical
C	Hybridological
D	Biochemical
E	Dermatoglyphics
№	krok 2010
Topic	Population, Species, Biogeocenotic and Biosphere Levels of living matter organization
Task	A scientific expedition in India was guided by a native who had never parted with his dog. What invasion diseases can be transmitted to the participants of the expedition as a result of contacts with this dog if it is known to be the source of invasion?
Correct answer	Echinococcosis
B	Teniasis
C	Paragonimiasis
D	Dicroceliasis
E	Fascioliasis
№	krok 2010
Topic	Biological peculiarities of human activity
Task	Blood of a child and putative father was referred to forensic medical examination for affiliation. What chemical components should be identified in the blood under study?
Correct answer	DNA
B	Transfer RNA
C	Ribosomal RNA
D	Messenger RNA
E	SnRNA
№	krok 2010
Topic	Biological peculiarities of human activity
Task	In the mountains some clinically healthy people present with anaemia symptoms. Blood test can reveal sickle cells. What is the genotype of such people?

Correct answer	Aa
B	aaAA
C	XcXc
D	XCXc
E	
№	krok 2010, 2009
Topic	Population, Species, Biogeocenotic and Biosphere Levels of living matter organization
Task	Coprological examination of a patient's feces revealed small operculate eggs. It is known from the anamnesis that the patient often consumes fish. What fluke parasitizes in the patient's organism?
Correct answer	Cat liver fluke
B	Blood fluke
C	Lung fluke
D	Liver fluke
E	Lancet fluke
№	krok 2010
Topic	Population, Species, Biogeocenotic and Biosphere Levels of living matter organization
Task	While on holiday in the countryside a boy found a spider with the following morphological peculiarities: body length at the rate of 2 cm, round black abdomen with two rows of red dots on its dorsal surface, four pairs of segmented extremities covered with tiny black hairs. Identify this arthropod:
Correct answer	Steppe spider (<i>Latrodectus tredecimguttatus</i>)
B	Scorpion
C	Solifugae
D	Mite
E	Tarantula
№	krok 2010, 2008
Topic	Biological peculiarities of human activity

Task	Epithelium regeneration of mucous membrane of oral cavity (cell reproduction) was accompanied by semiconservative DNA replication (selfreproduction). Nucleotides of a new DNA chain are complementary
Correct answer	Maternal chain
B	Sense codons
C	DNA-polymerase enzyme
D	Introns
E	RNA-polymerase enzyme
№	krok 2010, 2008
Topic	Biological peculiarities of human activity
Task	After prophylactic medical examination a 7-year-old boy was diagnosed with Lesch-Nyhan syndrome (only boys fall ill). His parents are healthy, but his grandfather by his mother's side has the same disease. What type of inheritance is it?
Correct answer	Recessive, sex-linked
B	Dominant, sex-linked
C	Autosomal and recessive
D	Autosomal and dominant
E	Semidominance
№	krok 2009
Topic	Population, Species, Biogeocoonotic and Biosphere Levels of living matter organization
Task	Examination of a man revealed a protozoan disease that affected brain and caused vision loss. Blood analysis revealed unicellular half-moon-shaped organisms with pointed end. The causative agent of this
Correct answer	Toxoplasma
B	Leishmania
C	Lambliia
D	Amoeba
E	Trichmonad
№	krok 2009

Topic	Population, Species, Biogeocoenotic and Biosphere Levels of living matter organization
Task	A married couple applied to the genetic consultation in order to consult about their child with multiple abnormalities (microcephaly, idiocy etc). The woman has had an illnesses during her pregnancy but she didn't take any teratogens or mutagens. The parents' and the child's karyotype is normal. Anamnesis study revealed that the family kept a cat. What gravidic disease caused the child's abnormalities?
Correct answer	Toxoplasmosis
B	Leishmaniasis
C	Dysentery
D	Balantidiasis
E	Trichomoniasis
№	krok 2009
Topic	Biological peculiarities of human activity
Task	A patient has mental retardation, small height, brachydactyly, mongoloid slant. Analysys of his karyotype revealed trisomy 21. What chromosomal anomaly is it?
Correct answer	Down disease
B	Klinefelter syndrome
C	Turner syndrome
D	Trisomy X
E	Specific fetopathy
№	krok 2009
Topic	Population, Species, Biogeocoenotic and Biosphere Levels of living matter organization
Task	A female patient has symptoms of inflammation of urogenital tracts. A smear from the vaginal mucous membrane contained big unicellular pyriform organisms with a sharp spike on the back end of their bodies; big nucleus and undulating membrane. What protozoa were revealed in the smear?
Correct answer	<i>Trichomonas vaginalis</i>
B	<i>Trichomonas hominis</i>
C	<i>Trichomonas buccalis</i>

D	<i>Trypanosoma gambiense</i>
E	<i>Lambliia intestinalis</i>
№	krok 2009
Topic	Biological peculiarities of human activity
Task	Analysis of an electron diffraction pattern of a cell revealed mitochondrion destruction. This might result in abnormal course of the following cell process:
Correct answer	Oxidation of organic substances
B	Nuclear division
C	Crossingover
D	Cleavage
E	-
№	krok 2009
Topic	Biological peculiarities of human activity
Task	Formation of ribosome subunits in a cell was disturbed in course of an experiment (by means of activated mutagenic factors). This will have an effect on the following metabolic process:
Correct answer	Protein biosynthesis
B	Carbohydrate biosynthesis
C	ATP synthesis
D	Photosynthesis
E	Biological oxidation
№	krok 2009
Topic	Population, Species, Biogeoceonotic and Biosphere Levels of living matter organization
Task	Among public catering workers examined by doctors of sanitary-and-epidemiologic station often occur asymptomatic parasite carriers. This means that a healthy person carries cysts that infect other people. Such parasitizing is impossible for the following causative agent:
Correct answer	Dysenteric amoeba
B	Malarial plasmodium

C	Intestinal trichomonad
D	Dermatotropic leishmania
E	Viscerotropic leishmania
№	krok 2009
Topic	Biological peculiarities of human activity
Task	It is known that information about sequence of amino acids in a protein molecule is encoded as a sequence of four types of nucleotides in a DNA molecule, and different amino acids are encoded by different number of triplets - from one to six. Such peculiarity of the genetic code is called:
Correct answer	Degeneracy
B	Universality
C	Nonoverlapping
D	Tripletty
E	Specificity
№	krok 2009, 2008
Topic	Biological peculiarities of human activity
Task	A patient was prescribed a drug with apparent lipophilic properties. What is the main mechanism of its
Correct answer	Passive diffusion
B	Filtration
C	Active transport
D	Pinocytosis
E	Binding with transport proteins
№	krok 2009
Topic	Biological peculiarities of human activity
Task	Abnormal chromosome disjunction during meiosis resulted in formation of: an ovum with 22 autosomes and polar body with 24 chromosomes. If such an ovum would be fertilized with a normal spermatozoon (22 + X) the child might have the following syndrome:
Correct answer	Turner syndrome

B	Klinefelter syndrome
C	Trisomy X
D	Down syndrome
E	Edwards syndrome
№	krok 2009
Topic	Biological peculiarities of human activity
Task	Active physical work induces rise of concentration of carbonic acid in blood. This causes deepening and acceleration of respiration thus reducing concentration of carbonic acid and hydrogen ions in blood. This maintains the following process:
Correct answer	Homeostasis
B	Immunity
C	Ontogenesis
D	Orthobiosis
E	Anabiosis
№	krok 2009
Topic	Biological peculiarities of human activity
Task	A 28 year old woman consulted a doctor about sterility. Examination revealed underdeveloped ovaries and uterus, irregular menstrual cycle. Study of sex chromatin revealed 2 Barr bodies in most somatic cells. What chromosome disease is the most probable in this case?
Correct answer	Triplo-X syndrome
B	Edwards syndrome
C	Patau syndrome
D	Klinefelter syndrome
E	Turner syndrome
№	krok 2009
Topic	Biological peculiarities of human activity

Task	During embryogenesis the epithelial band also known as vestibular plate gives rise to development of vestibule of mouth. What biological mechanism of the programmed death of cells provides growth of buccolabial sulcus from epithelial plate?
Correct answer	Apoptosis
B	Necrosis
C	Meiosis
D	Paranecrosis
E	Amitosis
№	krok 2009
Topic	Biological peculiarities of human activity
Task	Hurtup disease is caused by point mutation of only one gene. This results in abnormal absorption of tryptophane in the intestine as well as its abnormal reabsorption in renal tubules. This causes synchronous disorders in digestive and urinary excretion systems. What genetic phenomenon is observed in this case?
Correct answer	Pleiotropy
B	Complementary interaction
C	Polymery
D	Codominance
E	Semidominance
№	krok 2009
Topic	Population, Species, Biogeocoenotic and Biosphere Levels of living matter organization
Task	A 15 year old girl was delivered to the hospital with inflammation of vermiform appendix. Blood analysis revealed signs of anaemia. Her feces contained lemon-shaped helminthic eggs (50x30 micrometer) with "plugs" on the poles. What type of helminth is it?
Correct answer	Trichuris
B	Pinworm
C	Hookworm
D	Echinococcus

E	Hymenolepis nana
№	krok 2008
Topic	Population, Species, Biogeoceonotic and Biosphere Levels of living matter organization
Task	As a result of dehelmintization a 2 m helminth came out with feces. It had segmented body, small head with four suckers and hooks. Name the type of helminth:
Correct answer	Armed tapeworm
B	Unarmed tapeworm
C	Dwarf tapeworm
D	Echinococcus
E	Broad tapeworm
№	krok 2008
Topic	Population, Species, Biogeoceonotic and Biosphere Levels of living matter organization
Task	Among students of the same group there are representatives of different races. One of the students has straight black hair and a fold of skin extending over the superior eyelid - epicanthus. What race does this student most probably represent?
Correct answer	Mongoloid
B	Negroid
C	Caucasian
D	Australoid
E	Ethiopian
№	krok 2008
Topic	Biological peculiarities of human activity
Task	Tetracycline taking in the first half of pregnancy causes abnormalities of fetus organs and systems, including tooth hypoplasia and alteration of their colour. What type of variability is the child's disease related to?
Correct answer	Modification
B	Combinative
C	Mutational

D	Hereditary
E	Recombinant
№	krok 2008
Topic	Biological peculiarities of human activity
Task	A 16 year-old-girl consulted a dentist about dark colour of tooth enamel. Analysis of her pedigree revealed that this pathology was inherited by all girls from father and by 50% of boys from mother. What mode of inheritance are these peculiarities typical for?
Correct answer	Dominant, X-linked
B	Recessive, X-linked
C	Recessive, Y-linked
D	Autosomal and dominant
E	Autosomal and recessive
№	krok 2008
Topic	Population, Species, Biogeocoenotic and Biosphere Levels of living matter organization
Task	Microscopical examination of discharges from the gums of a patient ill with paradontosis revealed some protozoan pearshaped organisms 6-13 micrometer long. The parasite has one nucleus and undulating membrane, there are four flagella at the front of its body. What protozoan were found?
Correct answer	Trichomonas
B	Leishmania
C	Amoebae
D	Balantidia
E	Lambliia
№	krok 2008
Topic	Biological peculiarities of human activity
Task	A patient has a skin defect as a result of an extensive burn. In order to mask this defect the surgeons transplanted a skin flap from other body part of this patient. What type of transplantation is it?
Correct answer	Autotransplantation

B	Explantation
C	Allotransplantation
D	Xenotransplantation
E	Homotransplantation
№	krok 2008
Topic	Population, Species, Biogeocenotic and Biosphere Levels of living matter organization
Task	Helminthological examination of patient's feces revealed oval brown eggs with tuberos external membrane. Name the type of helminth:
Correct answer	Ascarid
B	Pinworm
C	Whipworm
D	Dwarf tapeworm
E	Broad tapeworm
№	krok 2008
Topic	Biological peculiarities of human activity
Task	An electronic microphotography represents a cell without nucleoli and nuclear membrane. Chromosomes are loosely scattered, centrioles migrate to the poles. What phase of cell cycle is it?
Correct answer	Prophase
B	Anaphase
C	Metaphase
D	Telophase
E	Interphase
№	krok 2008
Topic	Biological peculiarities of human activity
Task	Electron microscopic study of a cell revealed roundish bubbles confined by a membrane and containing a that these organellas provide intracellular digestion and protective functions. These elements are:
Correct answer	Lysosomes

B	Centrosomes
C	Endoplasmic reticulum
D	Ribosomes
E	Mitochondria
№	krok 2008
Topic	Biological peculiarities of human activity
Task	A couple applied to a genetic consultation with a question about probability of giving birth to children with X-linked rickets (dominant character). Father is healthy, mother is heterozygous and suffers from this disease. Vitamin-resistant rachitis can be inherited by:
Correct answer	A half of all daughters and sons
B	Daughters only
C	Sons only
D	All children
E	All children will be healthy
№	krok 2008
Topic	Biological peculiarities of human activity
Task	A group of researchers set an experiment and obtained mutant cells without nucleolus . In the first place they will have disturbed synthesis of the following compounds:
Correct answer	Ribosomal RNA
B	Transfer RNA
C	Lipids
D	Monosaccharides
E	Polysaccharides
№	krok 2008
Topic	Biological peculiarities of human activity
Task	As a result of expression of some genome components the embryo cells acquire typical morphological, biochemical and functional properties. Name this process:

Correct answer	Differentiation
B	Capacitation
C	Reception
D	Determination
E	Induction
№	krok 2007
Topic	Biological peculiarities of human activity
Task	Microscopic analysis of human heart cells revealed some oval organelles, their tunic being formed by two membranes: the external one is smooth, and the internal one forms cristae. Biochemical analysis determined the presence of ATP-synthetase enzyme. What organelles were analysed?
Correct answer	Mitochondrions
B	Lysosomes
C	Ribosomes
D	Endoplasmic reticulum
E	Centrosomes
№	krok 2007
Topic	Population, Species, Biogeocenotic and Biosphere Levels of living matter organization
Task	In the vermiform appendix there was found a white helminth, 40 mm long with thin filiform forward end. Excrements contained oval eggs with plugs at the poles. Determine the kind of helminth:
Correct answer	Whipworm
B	Seatworm
C	Ascarid
D	Hookworm
E	Threadworm
№	krok 2007
Topic	Population, Species, Biogeocenotic and Biosphere Levels of living matter organization

Task	Medical examination of some youths revealed in their axillary regions grey insects 1,0-1,5 mm large, with short broad body covered with hair. What insects were revealed?
Correct answer	Pubic louse
B	Flea
C	Head louse
D	Bed bug
E	Itch mite
№	krok 2007
Topic	Biological peculiarities of human activity
Task	There are trisome, translocational and mosaic forms of Down Syndrome. What method of human genetics can be applied to differentiate the said forms of Down syndrome?
Correct answer	Cytogenetic
B	Twins method
C	Genealogical
D	Biochemical
E	Populationstatistical
№	krok 2007
Topic	Biological peculiarities of human activity
Task	Very big teeth is an Y-linked sign. Mother's teeth are of normal size, and her son's teeth are very big. Probability of father's having very large teeth is:
Correct answer	100%
B	75%
C	50%
D	25%
E	12,50%
№	krok 2007
Topic	Biological peculiarities of human activity

Task	An 8 month old child has nonclosed palate, a number of eye defects, microcephaly, disorder of cardiovascular system. Cytogenetic analysis revealed 47 chromosomes with an additional 13th chromosome. What diagnosis can be made on the basis of clinical observations and cytogenetic examinations?
Correct answer	Patau syndrome
B	Cat cry syndrome
C	Edwards syndrome
D	Down syndrome
E	Klinefelter syndrome
№	krok 2007
Topic	Population, Species, Biogeocoenotic and Biosphere Levels of living matter organization
Task	A patient with suspected liver abscess was admitted to the surgical department. The patient had been staying for a long time on business in one of african countries and fell repeatedly ill with acute gastrointestinal disorders. What protozoal disease may the patient be now ill with?
Correct answer	Amebiasis
B	Trypanosomosis
C	Leishmaniasis
D	Malaria
E	Toxoplasmosis
№	krok 2007
Topic	Biological peculiarities of human activity
Task	Examination of a 7 year old child revealed the following symptoms: small height, broad roundish face, closely placed eyes with narrow palpebral fissures, half-open mouth. Valvular defect has been also diagnosed. These clinical presentations are most likely typical for Down syndrome. Name the cause of such
Correct answer	Trisomy of the 21 chromosome
B	Trisomy of the 13 chromosome
C	X-chromosome trisonomy
D	Partial monosomy

E	Nondisjunction of sexual chromosomes
№	krok 2007
Topic	Biological peculiarities of human activity
Task	Examination of a pregnant woman who has been taking alcohol revealed disturbed anlage of ectoderma during the fetal life. What derivatives of this leaf have defects?
Correct answer	Neural tube
B	Kidneys
C	Bowels epithelium
D	Liver
E	Sexual glands
№	krok 2007
Topic	Biological peculiarities of human activity
Task	In a genetical laboratory in course of work with DNA molecules of white rats of Wistar's line a nucleotide was substituted for another one. At that only one amino acid was substituted in the peptide. This result is caused by the following mutation:
Correct answer	Transversion
B	Deletion
C	Duplication
D	Displacement of reading frame
E	Translocation
№	krok 2007
Topic	Population, Species, Biogeoceonotic and Biosphere Levels of living matter organization
Task	Father bought some pork at the market. What disease may catch members of his family provided that this meat didn't pass the veterinary control?
Correct answer	Pork tapeworm infection
B	Beef tapeworm infection
C	Hymenolepiasis

D	Echinococcosis
E	Liver fluke infection
№	krok 2007
Topic	Biological peculiarities of human activity
Task	During the postsynthetic period of mitotic cycle the synthesis of tubulin proteins was disturbed. These proteins take part in construction of division spindle. It can lead to the disturbance of:
Correct answer	Chromosomes' disjunction
B	Spiralization of chromosomes
C	Cytokinesis
D	Despiralization of chromosomes
E	Mitosis duration
№	krok 2007
Topic	Biological peculiarities of human activity
Task	A newborn child has microcephalia. Doctors consider that this is the result of mother's taking actinomycin D during the pregnancy. What embryonal leaf was influenced by this teratogen?
Correct answer	Ectoderm
B	All leaves
C	Entoderma
D	Mesoderma
E	Entoderma and mesoderma
№	krok 2018
Topic	Population, species, biogeocoonotic and biosphere levels of living matter organization
Task	Several patients with similar complaints came to the doctor. They all present with weakness, pain in the intestines, indigestion. Feces analysis revealed the need for urgent hospitalization of the patient, who had microbial cysts with four nuclei detected in his samples. Such cysts are characteristic of the following
Correct answer	Entamoeba histolytica
B	Balantidium

C	Entamoeba coli
D	Trichomonad
E	Lambliia
№	krok 2018
Topic	i biological peculiarities of human activity
Task	A patient was diagnosed with a monogenic hereditary disease. Name this disease:
Correct answer	Hemophilia
B	Hypertension
C	Peptic ulcer disease of the stomach
D	Poliomyelitis
E	Hymenolepiasis
№	krok 2018
Topic	biological peculiarities of human activity
Task	According to the law of constancy of chromosome numbers, most animal species have definite and constant chromosome number. The mechanism that maintains this constancy during sexual reproduction of organisms
Correct answer	Meiosis
B	Schizogony
C	Amitosis
D	Regeneration
E	–
№	krok 2018, 2019
Topic	Population, species, biogeocenotic and biosphere levels of living matter organization
Task	According to the data collected by WHO researchers, every year there are approximately 250 million malaria cases occur in the world. This disease can be encountered predominantly in tropical and subtropical areas. The spread of this disease matches the natural habitat of the following genus of mosquitoes:
Correct answer	Anopheles
B	Culex

C	Aedes
D	Mansonia
E	Culiseta
№	krok 2018
Topic	Population, species, biogeocenotic and biosphere levels of living matter organization
Task	A hunter was drinking raw water from a pond. He risks infection with the following type of trematodiasis:
Correct answer	Fascioliasis
B	Opisthorchiasis
C	Paragonimiasis
D	Clonorchiasis
E	Dicroceliasis
№	krok 2018
Topic	Population, species, biogeocenotic and biosphere levels of living matter organization
Task	A man with signs of intestinal obstruction was delivered to a hospital. In the process of treatment, roundworms 25 – 40 cm in size were extracted from the patient's intestine. Determine the species of this
Correct answer	<i>Ascaris lumbricoides</i>
B	<i>Enterobius vermicularis</i>
C	<i>Ancylostoma duodenalis</i>
D	<i>Trichinella spiralis</i>
E	<i>Trichuris trichiura</i>
№	krok 2018, 2022
Topic	i biological peculiarities of human activity
Task	Among organic substances of cell there is a polymer, composed of dozens, hundreds and thousands of monomers. This molecule is capable of self-reproduction and can be an information carrier. X-ray structure analysis shows this molecule to consist of two complementary spiral threads. Name this compound:
Correct answer	DNA
B	Hormone

C	Cellulose
D	RNA
E	Carbohydrate
№	krok 2018
Topic	Population, species, biogeocoenotic and biosphere levels of living matter organization
Task	A 40-year-old patient presents with abdominal pain, frequent loose stools with mucus and blood. Stool analysis revealed vegetative forms of some protozoa sized 30-40 microns, with short pseudopodia, containing large amounts of phagocytosed erythrocytes. What protozoan disease does the patient have?
Correct answer	Amebiasis
B	Trichomoniasis
C	Leishmaniasis
D	Giardiasis
E	Toxoplasmosis
№	krok 2018
Topic	biological peculiarities of human activity
Task	A patient was diagnosed with Klinefelter syndrome. The patient with this disease has karyotype 47, XXY. How many sex chromosomes are in this set?
Correct answer	Three
B	Zero
C	Forty-four
D	One
E	Two
№	krok 2018
Topic	biological peculiarities of human activity
Task	During cell analysis, their cytoplasm was determined to have high content of aminoacyl tRNAsynthetase. This enzyme ensures the following process:
Correct answer	Amino acid activation

B	Repair
C	Elongation
D	Transcription
E	Replication
№	krok 2018
Topic	biological peculiarities of human activity
Task	A woman is diagnosed with Turner syndrome (karyotype 45, X0). How many autosomal pairs would her somatic cells contain?
Correct answer	22
B	44
C	23
D	24
E	45
№	krok 2018
Topic	biological peculiarities of human activity
Task	A lancelet embryo is at the developmental stage during which its cells multiply, while its general volume remains practically unchanged. What developmental stage is it?
Correct answer	Cleavage
B	Gastrulation
C	Organogenesis
D	Histogenesis
E	Neurulation
№	krok 2018
Topic	biological peculiarities of human activity
Task	Histological specimen of endometrium demonstrates isolated epithelial cells with chromosomes that form a “plate” located in the equatorial plane of the cell. What stage of the cell cycle is it?
Correct answer	Metaphase

B	Anaphase
C	Telophase
D	Interphase
E	Prophase
№	krok 2019
Topic	Population, species, biogeocenotic and biosphere levels of living matter organization
Task	People of various nationalities, who live in the Arctic climate, develop a number of features to adapt to their environment. Representatives of the Arctic adaptive type compared to the natives of the Central Africa have the following characteristic feature:
Correct answer	Increased layer of subcutaneous fat
B	Lower need for fat intake
C	Elongated legs and shorter arms
D	Hyperhydrosis
E	Lean stature
№	krok 2019
Topic	Population, species, biogeocenotic and biosphere levels of living matter organization
Task	Mother with a 12-year-old child came to the gastroenterologist. She complains of loss of appetite and meteorism in her child. Endoscopically the child was diagnosed with biliary dyskinesia, in the duodenal contents there were pear-shaped protozoa with two nuclei and multiple flagella. What disease is the most
Correct answer	Lambliasis
B	Amebiasis
C	Balantidiasis
D	Toxoplasmosis
E	Trichomoniasis
№	krok 2019
Topic	biological peculiarities of human activity

Task	A certain embryonic organ is being studied. In this organ the first blood corpuscles that make up blood as a tissue are being formed. Name this organ
Correct answer	Yolk sac
B	Spleen
C	Red bone marrow
D	Liver
E	Thymus
№	krok 2019
Topic	biological peculiarities of human activity
Task	A patient with chronic hepatitis undergoes blood test for serum protein fractions. Total protein levels are low, which indicates that in the hepatic cells the following organelles are functionally disturbed:
Correct answer	Granularendoplasmicreticulum
B	Lysosomes
C	Mitochondria
D	Golgi apparatus
E	Cytoskeleton
№	krok 2019
Topic	biological peculiarities of human activity
Task	Formation of large amount of immunoglobulins with various antigen specificity from a small number of genes occur due to
Correct answer	Recombination
B	Deletion
C	Transcription
D	Replication
E	Translocation
№	krok 2019
Topic	biological peculiarities of human activity

Task	The height of a person is controlled by several non-allelic genes. If the number of these genes is increased, the height of a person increases as well. What type of interaction occurs between these genes?
Correct answer	Polymery
B	Pleiotropy
C	Complementarity
D	Codominance
E	Epistasis
№	krok 2019
Topic	biological peculiarities of human activity
Task	Biochemical analysis of amino acid contents of freshly synthesized polypeptides shows that in the process of their translation the first amino acid in each of these proteins will be the same. Nam this amino acid:
Correct answer	Methionine
B	Histidine
C	Phenylalanine
D	Serine
E	Isoleucine
№	krok 2019
Topic	Population, species, biogeocoonotic and biosphere levels of living matter organization
Task	Microscopy of a sputum sample obtained from a patient who has been suffered from pneumonia for a week detected helminth larvae. Eosinophilia is observed in the patient's blood. What diagnosis can be suspected in
Correct answer	Ascariasis
B	Echinococcosis
C	Fascioliasis
D	Paragonimiasis
E	Taeniasis
№	krok 2019
Topic	biological peculiarities of human activity

Task	Mother of a 2-year-old child with delayed physical and mental development has made an appointment with the genetic consultation. What method allows the doctor to rule out chromosomal abnormalities?
Correct answer	Cytogenetic
B	Biochemical
C	Genealogical
D	Cytological
E	Populationstatistics
№	krok 2019
Topic	biological peculiarities of human activity
Task	A patient with pulmonary tuberculosis is prescribed rifampicin that inhibits RNA-polymerase enzyme at the stage of initiation of following process
Correct answer	Transcription
B	Termination
C	Replication
D	Translation
E	Elongation
№	krok 2019
Topic	Population, species, biogeocoonotic and biosphere levels of living matter organization
Task	During their expedition to the Middle East, the students found a 7-centimeter-long arthropod. Its body consists of cephalothorax with 4-pairs of ambulatory legs and segmented abdomen with two venom glands in its last segment. The gland openings are located on the tip of the hook-shaped sting. The animal was identified as nocturnal predator, its venom is dangerous for humans. It belongs to the following order:
Correct answer	<i>Scorpiones</i>
B	<i>Aphaniptera</i>
C	<i>Acarina</i>
D	<i>Solpugae</i>
E	<i>Aranei</i>

№	krok 2019
Topic	Population, species, biogeocenotic and biosphere levels of living matter organization
Task	A 36-year-old man traveled to the mountains for a vacation (altitude of 2000 meters above the sea level). He developed increased respiration rate, tachycardia, and slight dizziness. Two days later these signs disappeared. This process is called:
Correct answer	Adaptation
B	Regeneration
C	Compensation
D	Inhibition
E	Proliferation
№	krok 2019
Topic	biological peculiarities of human activity
Task	In human population some people throughout their life develop not to but three dentitions. It is the manifestation of the following law:
Correct answer	Biogenetic law (recapitulation theory)
B	Embryonic induction
C	Independent assortment
D	Hardy-Weinberg principle
E	Homologous series of genetic variation
№	krok 2019
Topic	biological peculiarities of human activity
Task	Fetal malformations can be caused by such maternal diseases as rubella, syphilis, toxoplasmosis, cytomegaly, herpes, and chlamydiosis. These malformations belong to the following type of variability:
Correct answer	Modification
B	Mutational
C	Combinative
D	Genomic imprinting

E	Epimutational
№	krok 2019
Topic	biological peculiarities of human activity
Task	A molecular-level-process of spontaneous passive transport of water-soluble molecules across a cell membrane is modeled. The molecules move across cell membranes from an area of higher concentration toward an area of lower concentration via specific transmembrane integral proteins. This transport does not directly require chemical energy from ATP hydrolysis. Which of the following transport mechanisms is most
Correct answer	Facilitated diffusion
B	Active transport
C	Pinocytosis
D	Osmosis
E	-
№	krok 2019
Topic	biological peculiarities of human activity
Task	A patient with Leber's hereditary optic neuropathy comes for genetic counseling. After the family history taking, the genetic counselor constructs pedigree, which displays a distinct mode of inheritance: his disease is transmitted only from affected females to their offspring. Both males and females are affected. None of the offspring of an affected male is affected. Which of the following modes of inheritance is identified by the
Correct answer	Mitochondrial
B	Autosome-recessive
C	X-linked dominant
D	Autosome-dominant
E	X-linked recessive
№	krok 2019
Topic	biological peculiarities of human activity

Task	In order to accurately identify etiology of peptic ulcer disease, polymerase chain reaction (PCR) analysis was performed on gastric biopsy specimen taken from 47-year-old patient. Eventually, the test result was positive for <i>H.pylori</i> . Which of the following was most likely detected in PCR analysis?
Correct answer	Bacterial DNA
B	<i>H.pylori</i> bacterium itself
C	Bacterial antigens
D	Bacterial enzymes – urease and catalase
E	Bacterial toxin
№	krok 2021
Topic	population, species, biogeocoenotic and biosphere levels of living matter organization
Task	A shepherd tended to the sheep with the help of his dogs. Gradually he developed pain in his chest and started coughing blood. X-ray shows a spherical structure in his lungs. Immunology testing confirmed the provisional diagnosis. What helminth is the likely cause of this condition?
Correct answer	<i>Echinococcus</i>
B	<i>Diphyllobothrium latum</i>
C	<i>Taenia solium</i>
D	<i>Hymenolepis nana</i>
E	<i>Liver fluke</i>
№	krok 2021
Topic	biological peculiarities of human activity
Task	During a class in molecular biology, the mutations resulting in production of abnormal hemoglobin are being studied. What amino acid substitution occurs when S-hemoglobin is being produced, resulting in the development of sickle-cell anemia?
Correct answer	Glutamic acid is substituted with valine
B	Histidine is substituted with arginine
C	Threonine is substituted with lysine

D	Lysine is substituted with glutamine
E	Glycine is substituted with asparagine
№	krok 2021
Topic	biological peculiarities of human activity
Task	An electronic microphotograph of a cell shows two different protein-destroying organelles. Name them:
Correct answer	Lysosomes and proteasomes
B	Ribosomes
C	Peroxisomes and ribosomes
D	Golgi complex and microtubules
E	Endoplasmic reticulum and microfilament
№	krok 2021
Topic	population, species, biogeocenotic and biosphere levels of living matter organization
Task	Several patients with similar complaints came to the doctor. They all present with weakness, pain in the intestines, indigestion. Feces analysis revealed the need for urgent hospitalization of the patient, who had microbial cysts with four nuclei detected in his samples. Such cysts are characteristic of the following
Correct answer	<i>Entamoeba histolytica</i>
B	<i>Entamoeba coli</i>
C	<i>Trichomonad</i>
D	<i>Lambliia</i>
E	<i>Balantidium</i>
№	krok 2021
Topic	biological peculiarities of human activity
Task	During DNA sequencing and biochemical analysis of a polypeptide, it was determined that the linear sequence of nucleotide triplets corresponds with the amino acid sequence in the polypeptide chain. What characteristic of the genetic code was determined?
Correct answer	Collinearity
B	Nonoverlapping

C	Universality
D	Degeneracy
E	Triplet nature
№	krok 2021
Topic	biological peculiarities of human activity
Task	Most epithelial cells sampled from the oral mucosa of a man contained one X chromatin body. It is
Correct answer	Klinefelter syndrome
B	Down syndrome
C	Triple X syndrome
D	Triple Y syndrome
E	Turner syndrome
№	krok 2021
Topic	biological peculiarities of human activity
Task	Phenylketonuria belongs to the following group of molecular metabolic diseases:
Correct answer	Amino acid metabolism disorders
B	Hereditary disorders of lipid metabolism
C	Carbohydrate metabolism disorders
D	Hereditary disorders of connective tissue metabolism
E	Mineral metabolism disorders
№	krok 2021
Topic	biological peculiarities of human activity
Task	Phenylketonuria has autosomal recessive pattern of inheritance. What parental genotypes result in the risk of phenylketonuria in their children?
Correct answer	$Aa \times Aa$
B	$AA \times aa$
C	$aa \times aa$
D	$AA \times Aa$

E	$AA \times AA$
№	krok 2021
Topic	biological peculiarities of human activity
Task	A sick child has signs of achondroplasia (dwarfism). It is known that this disease is monogenic and the gene that causes the development of this anomaly is dominant. The natural brother of this child has normal development. Genotypically, the healthy child is:
Correct answer	aa
B	$AABB$
C	Aa
D	$AaBb$
E	AA
№	krok 2022
Topic	biological peculiarities of human activity
Task	Light microscopy was used to study the morphology of human Y chromosome. Centromere is located close to one of the ends of the chromosome. Name the type of the chromosome:
Correct answer	Acrocentric
B	Telocentric
C	Polytene
D	Metacentric
E	Submetacentric
№	krok 2022
Topic	biological peculiarities of human activity
Task	A cell is an elementary living system that ensures proper structure, development, functioning, adaptation, procreation, and regeneration of the organism. Name the three main structural components of a cell:
Correct answer	Cell membrane (plasmalemma), cytoplasm, nucleus
B	Cytoplasm, organelles, nucleus
C	Glycocalyx, nucleus, organelles

D	Hyaloplasm, plasmalemma, nucleus
E	Cell membrane (plasmalemma), inclusions, organelles
№	krok 2022
Topic	biological peculiarities of human activity
Task	What type of hemophilia inheritance results in men being affected by hemophilia and in women being carriers of this disease?
Correct answer	X-linked recessive
B	Autosomal recessive
C	X-linked dominant
D	Holandric
E	Autosomal dominant
№	krok 2022
Topic	biological peculiarities of human activity
Task	In an experiment, the myotome was destroyed in a rabbit fetus. This manipulation will result in malformation of the following structure:
Correct answer	Skeletal muscles
B	Smooth muscles
C	Serous membranes
D	Axial skeleton
E	Dermal connective tissue
№	krok 2022
Topic	biological peculiarities of human activity
Task	A certain hereditary syndrome affects teeth, hair, and bones. Each generation has affected individuals. The syndrome occurs equally frequent in men and women. What type of inheritance is it?
Correct answer	Autosomal dominant
B	Autosomal recessive
C	Y-linked

D	X-linked recessive
E	X-linked dominant
№	krok 2022
Topic	biological peculiarities of human activity
Task	A diet must include fats. Fats perform plastic function in an organism due to their inclusion in:
Correct answer	Cell membranes
B	Cell ion pumps
C	Cell end-organs
D	Cell ion channels
E	Glycocalyx
№	krok 2022
Topic	biological peculiarities of human activity
Task	replacement in the protein, because after a time this damage was corrected with specific enzymes. Name this DNA ability:
Correct answer	Repair
B	Replication
C	Mutation
D	Reverse transcription
E	Transcription
№	krok 2022
Topic	biological peculiarities of human activity
Task	Erythrocytes of a person with fourth blood group (genotype IAIB) contain both antigen A controlled by allele IA and antigen B that is the product of allele IB expression. What type of gene interaction is demonstrated by this phenomenon?
Correct answer	Codominance
B	Epistasis
C	Semidominance

D	Polymery
E	Complementarity
№	krok 2022
Topic	population, species, biogeocenotic and biosphere levels of living matter organization
Task	A 32-year-old woman with asymptomatic progression of the disease for the second time gave birth to a stillborn baby with marked microcephaly. What disease can be suspected in this case?
Correct answer	Toxoplasmosis
B	Histoplasmosis
C	Brucellosis
D	Syphilis
E	Listeriosis
№	krok 2022
Topic	population, species, biogeocenotic and biosphere levels of living matter organization
Task	A 40-year-old man has returned home after his voyages along the coast of West Africa that lasted for many months. 15 days later he developed weakness, headache, elevated temperature, and fever. He was diagnosed with malaria. What laboratory methods of analysis can confirm this diagnosis?
Correct answer	Microscopy, serology
B	Bacteriology, allergy testing
C	Bacterioscopy, biologic method
D	Microscopy, microbial culture
E	Serology, biologic method
№	krok 2022
Topic	population, species, biogeocenotic and biosphere levels of living matter organization
Task	A woman complains of headache, muscle pain during swallowing, chewing, and eyeball movement, elevated temperature, swollen face and eyelids. The signs developed 1.5-2 months after she had eaten pork without sanitary certificate. What helminth can cause these signs in a human?
Correct answer	Trichinella

B	<i>Ascaris lumbricoides</i>
C	<i>Ancylostoma</i>
D	<i>Necator</i>
E	<i>Enterobius</i>