

№	krok 2023
Тема	biological peculiarities of human activities
Текст задания	In the nucleus of a cell, a molecule of mature mRNA, which is smaller in size, was formed from a large molecule of immature mRNA. The stages of this transformation together are called
Правильный ответ	Processing
B	Replication
C	Translation
D	Recognition
E	Termination
№	krok 2023
Тема	biological peculiarities of human activities
Текст задания	A 36-year-old patient underwent tooth extraction at a dental clinic. After two weeks the stratified squamous epithelium regenerated at this site. What organelles were involved in the restoration of the mucous membrane?
Правильный ответ	Ribosomes
B	Smooth endoplasmic reticulum
C	Postlysosomes
D	Centrosome
E	Mitochondria
№	krok 2023
Тема	inheritance and variation in humans
Текст задания	A child has 3 copies of chromosome 18, which resulted in characteristic cranial elongation from front to back, maldevelopments of the musculoskeletal system, fused fingers and maldevelopments of skeletal muscles. What hereditary pathology is observed in this
Правильный ответ	Edwards syndrome
B	Down syndrome
C	Patau syndrome
D	Klinefelter syndrome
E	Turner syndrome
№	krok 2023
Тема	population, species, biogeocoenotic and biosphere levels of living matter organization
Текст задания	What period of the malaria plasmodium life cycle coincides with the manifestation of clinical symptoms of malaria in a patient?
Правильный ответ	When merozoites emerge from destroyed erythrocytes
B	When sporozoites enter the human bloodstream

C	During gemetocytes formation
D	When merozoites invade erythrocytes
E	In the period of tissue schizogony
№	krok 2023
Тема	biological peculiarities of human activities
Текст задания	There are several stages in the process of translation. At one of this stages, a complex forms that consists of a ribosome, mRNA and aminoacyl-tRNA-methionine. What is the name of this stage?
Правильный ответ	Initiation
B	Elongation
C	Termination
D	Transcription
E	Repair
№	krok 2023
Тема	inheritance and variation in humans
Текст задания	At a medical genetic consultancy, the karyotype of a child with physical development problems was examined. Trisomy 13 was
Правильный ответ	Patau syndrome
B	Down syndrome
C	Edward syndrome
D	Klinefelter syndrome
E	Turner syndrome
№	krok 2023
Тема	population, species, biogeocenotic and biosphere levels of living matter organization
Текст задания	A patient was hospitalized with provisional diagnosis diphyllbothriasis. What food products could have caused this disease?
Правильный ответ	Fisch
B	Milk and eggs
C	Beef
D	Pork
E	Vegetables and fruits
№	krok 2017
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	In the life cycle of a cell during mitosis a natural change in the amount of genetic material occurs. The DNA doubles at the following
Correct answer	Interphase

B	Prophase
C	Metaphase
D	Anaphase
E	Telophase
№	krok 2017, 2015
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	A patient has decreased concentration of magnesium ions that are required for ribosomes connection to granular endoplasmic reticulum. This condition is known to disturb the process of protein biosynthesis. Disturbance occurs at the following stage:
Correct answer	Translation
B	Transcription
C	Replication
D	Amino acids activation
E	Processing
№	krok 2017
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	A shepherd, who tended to the flock of sheep with his dogs, gradually developed pain in the chest and bloody expectorations. X-ray revealed spheric helminth larvae in the patient's lungs. Specify the helminth that could be the causative agent of this disease:
Correct answer	<i>Echinococcus</i>
B	<i>Hymenolepis nana</i>
C	<i>Diphylobotrium latum</i>
D	<i>Fasciola hepatica</i>
E	<i>Taenia solium</i>
№	krok 2017
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	Exposure to colchicine resulted in metaphase plate of a human containing 23 chromosomes more than it is normal. Name this
Correct answer	Polyploidy
B	Aneuploidy
C	Polyteny
D	Inversion
E	Translocation
№	krok 2017
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES

Task	T-lymphocytes are determined to be affected with HIV. In this case viral enzyme reverse transcriptase (RNA-dependent DNA-
Correct answer	DNA based on the viral RNA matrix
B	Viral RNA based on the DNA matrix
C	Viral protein based on the viral RNA matrix
D	Viral DNA based on the DNA matrix
E	Informational RNA based on the viral protein matrix
№	krok 2017, 2015
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A woman with the III (B), Rh (-) blood group gave birth to a child with the II (A) blood group. The child is diagnosed with hemolytic disease of newborn caused by rhesus incompatibility. What blood group and Rh are likely in the father?
Correct answer	II (A), Rh (+)
B	I (0), Rh (+)
C	III (B), Rh (+)
D	I (0), Rh (-)
E	II (A), Rh (-)
№	krok 2017
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	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?
Correct answer	Higher than in the population
B	The same as in the population
C	Lower than in the population
D	100%
E	50%
№	krok 2017
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A 45-year-old woman gave birth to a boy with cleft maxilla (cleft lip and palate). On additional examination there are significant disturbances of the boy's nervous, cardiovascular, and visual systems. Karyotype investigation allowed diagnosing the patient with
Correct answer	Patau
B	Down
C	Kleinfelter
D	Turner

E	DiGeorge
№	krok 2017
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	Clinical presentations of a woman allowed provisionally diagnosing her with X polysomy. Cytogenetic method is applied to clarify the diagnosis. The diagnosis will be confirmed if the patient's karyotype is:
Correct answer	47, XXX
B	48, XXXY
C	48, XXYY
D	47, XXY
E	46, XX
№	krok 2017
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	During dehelminthization there was a 3,5-meter-long tapeworm produced from the patient's intestine. There are 4 suckers and hooks on the tapeworm's scolex. Mature segments of the tapeworm are immobile and have up to 12 uterine branches. What disease is it?
Correct answer	Teniasis
B	Echinococcosis
C	Beef tapeworm infection
D	Diphyllobothriasis
E	Opisthorchiasis
№	krok 2017
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	Cystinuria manifests itself in a human as cystine stones in the kidneys (homozygous individuals) or increased cystine content in the urine (heterozygous individuals). Cystinuria is a monogenic disorder. Determine the type of interaction between the genes of
Correct answer	Semidominance (Incomplete dominance)
B	Epistasis
C	Complete dominance
D	Complementarity
E	Codominance
№	krok 2017, 2016, 2014
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	In one of Polessye regions there was an outbreak of helminthiasis manifested by cramps and facial edemas. The developed preventive measures in particular included ban for eating infested pork even after heat processing. What helminthiasis was the case?

Correct answer	Trichinosis
B	Taeniarhynchosis
C	Teniasis
D	Echinococcosis
E	Alveococcosis
№	krok 2017
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	Ionizing radiation or vitamin E deficiency affect the cell by increasing lysosome membrane permeability. What are the possible
Correct answer	Partial or complete cell destruction
B	Intensive protein synthesis
C	Intensive energy production
D	Restoration of cytoplasmic membrane
E	Formation of maturation spindle
№	krok 2017
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	In the South and Central America there can be found a species of trypanosomes that is the causative agent of Chagas disease. What animal is the infection carrier specific to this disease?
Correct answer	Triatomine bug
B	Cockroach
C	Tsetse fly
D	Mosquito
E	Gnat
№	krok 2017
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	Deaf parents with genotypes DD <sup>ee</sup> and dd <sup>EE</sup> gave birth to a child with normal hearing. Specify the interaction of D and E genes:
Correct answer	Complementary interaction
B	Complete dominance
C	Epistasis
D	Polymery
E	Overdominance
№	krok 2017
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS

Task	A young family came for a genetic counseling to identify the father of their child. The husband insists that the child does not resemble him at all and cannot possibly be his. Polymerase chain reaction method for person identification is based on the following:
Correct answer	Gene amplification
B	Nucleotide deletion
C	Genetic recombination
D	Missense mutation
E	Transduction
№	krok 2016
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	An infant has been diagnosed with mi-crocephaly. Doctors suspect that this brain disorder developed due to the fact that the mother had been taking actinomycin D during her pregnancy. What germinal layers have been affected by this teratogen?
Correct answer	Ectoderm
B	Entoderm
C	Mesoderm
D	Entoderm and mesoderm
E	All germinal layers
№	krok 2016
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	Parents of a sick 5-year-old girl vi-sited a genetic consultation. Karyotype investigation revealed 46 chromosomes. One chromosome of the 15th pair was abnormally long, having a part of the chromosome belonging to the 21st pair attached to it. What
Correct answer	Translocation
B	Deletion
C	Inversion
D	Deficiency
E	Duplication
№	krok 2016, 2014
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	A 26-year-old woman consulted a doctor about having stool with white flat moving organisms resembling noodles. Laboratory analysis revealed proglottids with the following characteristics: long, narrow, with a longitudinal channel of the uterus with 17-35
Correct answer	<i>Taeniarhynchus saginatus</i>
B	<i>Taenia solium</i>
C	<i>Hymenolepis nana</i>

D	<i>Diphyllobothrium latum</i>
E	<i>Echinococcus granulosus</i>
№	krok 2016, 2015
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	Sex chromatin was detected during examination of a man's buccal epithelium. It is characteristic of the following chromosome
Correct answer	Klinefelter's syndrome
B	Down's disease
C	Turner's syndrome
D	Triple X syndrome
E	Hypophosphatemic rickets
№	krok 2016
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	Representatives of a certain human population can be characterized by elongated body, height variability, decreased volume of muscle mass, increased length of limbs, decreased size and volume of rib cage, increased perspiration, decreased indices of base
Correct answer	Tropical
B	Arctic
C	Moderate
D	Intermediate
E	Mountain
№	krok 2016
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	Cells of a healthy liver actively synthesize glycogen and proteins. What organelles are the most developed in them?
Correct answer	Granular and agranular endoplasmic reticulum
B	Cell center
C	Lysosomes
D	Mitochondria
E	Peroxisomes
№	krok 2016, 2012
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	According to phenotypic diagnosis a female patient has been provisionally diagnosed with X-chromosome polysomia. This diagnosis can be confirmed by cytogenetic method. What karyotype will confirm the diagnosis?
Correct answer	47(XXX)



B	48(XXXY)
C	48(XXYY)
D	47(XXY)
E	46(XX)
№	krok 2016
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A family of healthy students, who have arrived from Africa, gave birth to a child with signs of anemia. The child has died shortly after. Examination has revealed that the child's erythrocytes are abnormally crescent-shaped. The disease is characterized by autosomal recessive inheritance. Determine the genotype of the child's parents:
Correct answer	Aa x Aa
B	Aa x aa
C	AA x AA
D	aa x aa
E	Aa x AA
№	krok 2016
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	At a certain stage of cell cycle chromosomes reach cellular poles, undergo despiralization; nuclear membranes are being formed around them; nucleolus is restored. What stage of mitosis is it?
Correct answer	Telophase
B	Prophase
C	Prometaphase
D	Metaphase
E	Anaphase
№	krok 2016, 2015
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	A patient working at a pig farm complains of paroxysmal abdominal pain, liquid feces with mucus and blood, headache, weakness, fever. Examination of large intestine revealed ulcers from 1 mm up to several cm in diameter, feces contained oval unicellular
Correct answer	Balantidiasis
B	Amebiasis
C	Toxoplasmosis
D	Lambliasis
E	Trichomoniasis

№	krok 2016
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	Cells of a person working in the Chernobyl Exclusion Zone have undergone a mutation in DNA molecule. However, with time the damaged interval of DNA molecule has been restored to its initial structure with a specific enzyme. In this case the following
Correct answer	Repair
B	Replication
C	Transcription
D	Reverse transcription
E	Translation
№	krok 2016, 2015, 2014
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A 2-year-old boy is diagnosed with Down syndrome. What chromosomal changes can cause this disease?
Correct answer	Trisomy 21
B	Trisomy 13
C	Trisomy X
D	Trisomy 18
E	Monosomy X
№	krok 2016
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	A patient consulted a physician about chest pain, cough, fever. Roentgenography of lungs revealed eosinophilic infiltrates that were found to contain larvae. What ki-nd of helminthiasis are these presentations typical of?
Correct answer	Ascariasis
B	Echinococcosis
C	Fascioliasis
D	Cysticercosis
E	Trichinosis
№	krok 2016, 2015
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A person with the fourth blood group (genotype IAIB) has in erythrocytes both antigen A controlled by allele IA and antigen B controlled by allele IB. This phenomenon is an example of the following gene interation:
Correct answer	Codominance
B	Complementarity

C	Semidominance
D	Polymery
E	Epistasis
№	krok 2015
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	A group of Ukrainian tourists returning from Samarqand was bringing with them gerbils. During examination in customs office ulcers were detected on the skin of the animals. What protozoa is the most likely to cause the disease in the animals, if mosquitoes
Correct answer	<i>Leishmania tropica major</i>
B	<i>Balantidium coli</i>
C	<i>Plasmodium falciparum</i>
D	<i>Trypanosoma cruzi</i>
E	<i>Toxoplasma gondii</i>
№	krok 2015
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	A patient with probable liver abscess was delivered to a surgical department. The patient for a long time had been on an assignment in an African country and had recurrent cases of acute gastrointestinal disturbance. What protozoan disease can it be?
Correct answer	Amebiasis
B	Trypanosomiasis
C	Leishmaniasis
D	Malaria
E	Toxoplasmosis
№	krok 2015, 2012, 2010
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	It is known that the gene responsible for development of blood groups according to ABO system has three allele variants. Existence of the IV blood group can be explained by the following variability form:
Correct answer	Combinative
B	Mutational
C	Phenotypic
D	Genocopy
E	Phenocopy
№	krok 2015, 2012, 2011
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS

Task	Sex chromosomes of a woman didn't separate and move to the opposite poles of a cell during gametogenesis (meiosis). The ovum was impregnated with a normal spermatozoon. Which chromosomal disease can be found in her child?
Correct answer	Turner's syndrome
B	Down's syndrome
C	Patau's syndrome
D	Edwards' syndrome
E	Cat cry syndrome
№	krok 2015
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A doctor was addressed by a 30-year-old man. There is a probability of the patient being HIV-positive. To clarify the diagnosis the doctor proposed to perform polymerase chain reaction. The basic process in this kind of investigation is:
Correct answer	Gene amplification
B	Transcription
C	Genetic recombination
D	Genomic mutation
E	Chromosome mutation
№	krok 2015
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	During cell division DNA replication occurs after a signal is received from the cytoplasm, then a certain portion of the DNA helix unwinds and splits into two individual strains. What enzyme facilitates this process?
Correct answer	Helicase
B	RNA polymerase
C	Ligase
D	Restrictase
E	DNA polymerase
№	krok 2015, 2014
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	As an example of specific human parasites one can name Plasmodium falciparum, human pinworm and some others. The source of parasite invasion in these cases is always a human. Such specific human parasites cause the diseases that are called:
Correct answer	Anthroponoses
B	Zoonoses
C	Anthropozoonoses

D	Infections
E	Multifactorial diseases
№	krok 2015, 2014
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	The organisms to be identified have a nucleus surrounded by a nuclear membrane. Genetic material is concentrated predominantly in the chromosomes that consist of DNA strands and protein molecules. These cells divide mitotically. Identify these organisms:
Correct answer	Eukaryotes
B	Bacteriophages
C	Prokaryotes
D	Viruses
E	Bacteria
№	krok 2015
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	An 18-year-old woman has body disproportion, wing-like folds on the skin of her neck, underdeveloped ovaries, nuclei of her buccal epithelium cells have no Barr bodies. Dermatoglyphics method revealed that her adt angle is $66^{\circ}$ . What provisional diagnosis can be
Correct answer	Turner's syndrome
B	Cri du chat (cat cry) syndrome
C	Klinefelter's syndrome
D	Patau's syndrome
E	Edwards' syndrome
№	krok 2014
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A boy referred to a genetics clinic was found to have 1 drumstick in blood neutrophils. The boy is likely to have the following
Correct answer	Klinefelter's
B	Down's
C	Turner's
D	Edwards'
E	Trisomy X
№	krok 2014, 2013
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	Amniocentesis revealed two sex chromatin bodies (Barr bodies) in each cell of the sample. What disease is this character typical for?

Correct answer	Trisomy X
B	Klinefelter syndrome
C	Turner's syndrome
D	Down's syndrome
E	Patau syndrome
№	krok 2014, 2013
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	An 18-year-old male has been diagnosed with Marfan syndrome. Examination revealed a developmental disorder of connective tissue and eye lens structure, abnormalities of the cardiovascular system, arachnodactyilia. What genetic phenomenon has caused the
Correct answer	Pleiotropy
B	Complementarity
C	Codominance
D	Multiple allelism
E	Incomplete dominance
№	krok 2014
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A female patient sought medical-genetic consultation. Physical examination revealed pterygium colli deformity (webbed neck), broad chest, underdeveloped breasts. Study of buccal epithelium cells revealed no X-chromatin in the nuclei. This indicates that the patient
Correct answer	Turner's
B	Klinefelter's
C	Patau's
D	Down's
E	Edwards'
№	krok 2014
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	An 8-week-pregnant woman with acute respiratory disease and temperature rise up to 39, 0° C has called in a doctor. The doctor insisted on her avoiding taking paracetamol, because in this period of pregnancy there is a risk of its:
Correct answer	Teratogenicity
B	Embryotoxicity
C	Fetotoxicity
D	Hepatotoxicity

E	Allergenicity
№	krok 2014
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A female suffered rubella during pregnancy. The child was born with developmental abnormalities, namely cleft lip and palate. The child's genotype is normal. These malformations are a manifestation of:
Correct answer	Modification variability
B	Polyploidy
C	Combinative variability
D	Chromosomal mutation
E	Aneuploidy
№	krok 2014
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	Nucleolar organizers of the 13-15, 21, 22 human chromosomes contain about 200 cluster genes that synthesize RNA. These regions of chromosomes bear the information on the following type of RNA:
Correct answer	rRNA
B	tRNA
C	mRNA
D	snRNA
E	tRNA + rRNA
№	krok 2014
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	An underage patient has signs of achondroplasia (dwarfism). It is known that this is a monogenic disease and the gene that is responsible for the development of such abnormalities is a dominant one. The development of that child's brother is normal. Specify
Correct answer	aa
B	AA
C	Aa
D	AaBb
E	AABB
№	krok 2014, 2013
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	Examination of the duodenal contents revealed some pear-shaped protozoa with two nuclei and four pairs of flagella. The organisms had also two axostyles between the nuclei and a ventral adhesive disc. What protozoan representative was found in the patient?

Correct answer	Lamblia
B	Toxoplasma
C	Leishmania
D	Intestinal trichomonad
E	Trypanosome
№	krok 2014
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A child with a normal karyotype is diagnosed with cleft lip and hard palate, defects of the cardiovascular system, microcephaly. The child's mother suffered rubella during pregnancy. This pathology in the child may be an example of:
Correct answer	Phenocopy
B	Trisomy
C	Genocopy
D	Monosomy
E	–
№	krok 2014
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	A 30-year-old patient has undergone keratoplasty in the transplantation center, cornea has been taken from a donor, who died in a road accident. What kind of transplantation was performed?
Correct answer	Allotransplantation
B	Autotransplantation
C	Xenotransplantation
D	Explantation
E	Heterotransplantation
№	krok 2013
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	Examination of an 18-year-old girl revealed the following features: hypoplasia of the ovaries, broad shoulders, narrow pelvis, shortening of the lower extremities, "sphinx neck". Mental development is normal. The girl was diagnosed with Turner's syndrome.
Correct answer	Monosomy X
B	Trisomy X
C	Trisomy 13
D	Trisomy 18
E	Nullisomy X



№	krok 2013
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	Hypertrichosis is the Y-linked character. The father has hypertrichosis, and the mother is healthy. In this family, the probability of
Correct answer	0,5
B	0,25
C	0,125
D	0,625
E	1
№	krok 2013
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A 35-year-old male patient has been referred by an andrologist for the genetic counselling for the deviations of physical and mental development. Objectively: the patient is tall, has asthenic constitution, gynecomastia, mental retardation. Microscopy of the oral mucosa cells revealed sex chromatin (single Barr body) in 30% of cells. What is the most likely diagnosis?
Correct answer	Klinefelter syndrome
B	DiGeorge syndrome
C	Down syndrome
D	Recklinghausen's disease
E	Cushing pituitary basophilism
№	krok 2013
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	Healthy parents with unremarkable family history have the child with multiple developmental defects. Cytogenetic analysis revealed the trisomy 13 in the somatic cells (Patau syndrome). What phenomenon has caused the defects?
Correct answer	Abnormal gametogenesis
B	Somatic mutation
C	Recessive mutation
D	Dominant mutation
E	Chromosomal mutation
№	krok 2013
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A 25-year-old patient consulted a doctor about dysmenorrhea and infertility. Examination revealed that the patient was 145 cm high and had underdeveloped secondary sex characteristics, alar folds on the neck. Cytological study didn't reveal any Barr bodies in the
Correct answer	Turner's syndrome

B	Klinefelter syndrome
C	Morris syndrome
D	Trisomy X syndrome
E	-
№	krok 2013
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	Mother of a boy who had recently returned from a summer camp found some small whitish insects up to 3 mm long on the child's
Correct answer	Pediculus humanus humanus
B	Phtirus pubis
C	Pulex irritans
D	Cimex lectularius
E	Blattella germanica
№	krok 2013
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A mother had taken synthetic hormones during pregnancy. Her daughter was born with hirsutism formally resembling of adrenal syndrome. Such manifestation of variability is called:
Correct answer	Phenocopy
B	Mutation
C	Recombination
D	Heterosis
E	Replication
№	krok 2013
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	A miner consulted a physician about the appearance of body rash followed by a loss of appetite, bloating, duodenal pain, frequent bowel movements, dizziness. Ovosopic probes of feces and duodenal contents revealed some eggs covered with a transparent membrane through which 4-8 germinal cells could be seen. What disease is likely to have occurred in the patient?
Correct answer	Ancylostomiasis
B	Strongyloidiasis
C	Trichocephaliasis
D	Hymenolepiasis
E	Enterobiasis
№	krok 2013

Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	Students study the stages of gametogenesis. They analyze a cell having a haploid number of chromosomes, and each chromosome consists of two chromatids. The chromosomes are located in the equatorial plane of the cell. Such situation is typical for the
Correct answer	Metaphase of the second division
B	Metaphase of the first division
C	Anaphase of the first division
D	Anaphase of the second division
E	Prophase of the first division
№	krok 2013
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	A specimen of an onion rootlet includes a cell in which the fully condensed chromosomes are located in the equatorial plane making the monaster. What phase of the mitotic cycle is the cell in?
Correct answer	Metaphase
B	Early telophase
C	Prophase
D	Interphase
E	Late telophase
№	krok 2013
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	At the stage of translation in the rough endoplasmic reticulum, the ribosome moves along the mRNA. Amino acids are joined together by peptide bonds in a specific sequence, and thus polypeptide synthesis takes place. The sequence of amino acids in a
Correct answer	mRNA codons
B	tRNA nucleotides
C	tRNA anticodons
D	rRNA nucleotides
E	rRNA anticodons
№	krok 2013
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	Analysis of the family history of children with Van der Woude syndrome revealed that in their families one of the parents had the typical for this syndrome defects (cleft lip and palate, lip pits regardless of gender). What is the type of inheritance of this syndrome?
Correct answer	Autosomal dominant
B	X-linked recessive

C	X-linked dominant
D	Autosomal recessive
E	Multifactorial
№	krok 2012, 2009
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A man suffering from a hereditary disease married a healthy woman. They got 5 children, three girls and two boys. All the girls inherited their father's disease. What is the type of the disease inheritance?
Correct answer	Dominant, X -linked
B	Autosomal recessive
C	Autosomal dominant
D	Y -linked
E	Recessive, X -linked
№	krok 2012
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A couple has a son with haemophilia. The parents are healthy but the maternal grandfather also has haemophilia. Specify the type of
Correct answer	Recessive sex-linked
B	Recessive autosomal
C	Dominant sex-linked
D	Semidominance
E	Autosomal dominant
№	krok 2012
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
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	$Aa \times Aa$
B	$AA \times aa$
C	$aa \times aa$
D	$Aa \times aa$
E	$Aa \times AA$
№	krok 2012
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER

Task	Patients with similar complaints applied to the doctor: weakness, pain in the intestines, disorder of GIT. Examination of the faeces revealed that one patient with four nucleus cysts should be hospitalized immediately. For what protozoa are such cysts typical?
Correct answer	Dysenteric amoeba
B	Intestinal amoeba
C	Balantidium
D	Trichomonas
E	Lambliia
№	krok 2012, 2009
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	A female patient consulted a physician about digestive disorder, extended abdominal pain. Examination revealed drastic decrease in hemoglobin concentration. It is known from the anamnesis that while living in the Far East the patient used to eat fresh salted caviar. Some relatives living with her had the similar condition. What is the most likely diagnosis?
Correct answer	Diphyllobothriasis
B	Echinococcosis
C	Teniasis
D	Trichiniasis
E	Ascariasis
№	krok 2012
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	46 chromosomes were revealed on karyotype examination of the 5 year old girl. One of the 15th pair of chromosomes is longer than usual due to connected chromosome from the 21 pair. What type of mutation does this girl have?
Correct answer	Translocation
B	Deletion
C	Inversion
D	Insufficiency
E	Duplication
№	krok 2012, 2009
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	During a prophylactic medical examination a 7-year-old boy was diagnosed with daltonism. His parents are healthy and have normal colour vision, but his grandfather on his mother's side has the same abnormality. What is the type of the abnormality inheritance?
Correct answer	Recessive, sex-linked
B	Dominant, sex-linked

C	Semidominance
D	Autosomal recessive
E	Autosomal dominant
№	krok 2012
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
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 arthropod:
Correct answer	Scabies
B	Demodicosis
C	Myiasis
D	Pediculosis
E	Dermatotropic leishmaniasis
№	krok 2012
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	Life cycle of a cell includes a process of DNA autoreduplication. As a result of this process monochromatid chromosomes become bichromatid. This phenomenon is observed within the following period of the cell cycle:
Correct answer	S
B	$G_0$
C	$G_1$
D	$G_2$
E	M
№	krok 2012, 2010
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A cell at the stage of mitosis anaphase was stimulated by colchicine that inhibits chromosome separation to the poles. What type of
Correct answer	Polyploidy
B	Inversion
C	Deletion
D	Duplication
E	Translocation
№	krok 2012

Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
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 be suspected?
Correct answer	Echinococcosis
B	Ascariidiasis
C	Enterobiasis
D	Taeniarhynchosis
E	Taeniasis
№	krok 2011
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	Medical examination at the military registration and enlistment office revealed that a 15-year-old boy was high, with eunuchoid body proportions, gynecomastia, female pattern of pubic hair distribution. The boy had also fat deposits on the thighs, no facial hair, high voice, subnormal intelligence quotient. Which karyotype corresponds with this disease?
Correct answer	47, XXY
B	45, XO
C	46, XX
D	46, XY
E	47, XXX
№	krok 2011
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	One of the parents is suspected of having phenylketonuria recessive gene. What is the risk of giving birth to a child with inborn
Correct answer	0%
B	25%
C	50%
D	75%
E	100%
№	krok 2011, 2008
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	While studying maximally spiralized chromosomes of human karyotype the process of cell division was stopped in the following
Correct answer	Metaphase
B	Prophase
C	Interphase

D	Anaphase
E	Telophase
№	krok 2011, 2009
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	A patient consulted an urologist about pain during urination. Analysis of his urine taken in the daytime revealed eggs with a characteristic sharp point. It is known from the anamnesis that the patient has recently returned from Australia. What is the most
Correct answer	Urogenital schistosomiasis
B	Intestinal schistosomiasis
C	Japanese schistosomiasis
D	Opisthorchiasis
E	Dicroceliasis
№	krok 2011, 2008
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	It was found out that some compounds, for instance fungi toxins and some antibiotics can inhibit activity of <i>RNA</i> -polymerase. What process will be disturbed in a cell in case of inhibition of this enzyme?
Correct answer	Transcription
B	Processing
C	Replication
D	Translation
E	Reparation
№	krok 2011
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	Examination of a 12-year-old boy with developmental lag revealed achondroplasia: disproportional constitution with evident shortening of upper and lower limbs as a result of growth disorder of epiphyseal cartilages of long tubal bones. This disease is:
Correct answer	Inherited, dominant
B	Inherited, recessive
C	Inherited, sex-linked
D	Congenital
E	Acquired
№	krok 2011
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS



Task	A 28-year-old female patient consulted a gynecologist about sterility. Examination revealed underdeveloped ovaries and uterus, irregular menstrual cycle. Analysis of the sex chromatin revealed 2 Barr's bodies in most somatic cells. What chromosome disease is
Correct answer	Triple X syndrome
B	Edwards' syndrome
C	Patau's syndrome
D	Klinefelter's syndrome
E	Turner's syndrome
№	krok 2011
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	A male patient has fever and enanthesis. As a result of the examination involving serological tests he has been diagnosed with fasciola hepatica. It was found out that the patient had been infected through raw river water. Which stage of fasciola life cycle is
Correct answer	Adolescaria
B	Metacercaria
C	Ovum
D	Miracidium
E	Cysticercus
№	krok 2011
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	A patient presents with acne and inflammatory alterations of facial skin. Microscopical investigation of lesion foci has revealed live arthropods sized 0,2-0,5 mm. They have prolate vermiform form and four pairs of thin short limbs located in the middle part of the
Correct answer	Demodicosis
B	Scabies
C	Pediculosis
D	Phthiriasis
E	Dermamyiasis
№	krok 2009
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A married couple consulted a specialist at the genetic consultation about probability of having children with hemophilia. Both spouses are healthy, but the wife's father has hemophilia. In this family hemophilia may be passed to:
Correct answer	Half of sons
B	Both sons and daughters
C	Daughters only

D	Half of daughters
E	All the children
№	krok 2009
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	In the perianal folds of a 5-year-old girl her mother has found some white "worms" that caused itch and anxiety in the child. The "worms" were sent to the laboratory. During examination the physician saw white Filiform helminths 0,5-1 cm long, with pointed
Correct answer	Enterobiasis
B	Diphyllobothriasis
C	Teniasis
D	Ascariasis
E	Opisthorchiasis
№	krok 2009
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	A woman delivered a dead child with multiple developmental defects. What protozoan disease might have caused the intrauterine
Correct answer	Toxoplasmosis
B	Leishmaniasis
C	Malaria
D	Amebiasis
E	Lambliasis
№	krok 2009
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	You are studying functioning of a bacteria operon. The operator gene has been released from the repressor gene. Immediately after this the following process will start in the cell:
Correct answer	Transcription
B	Translation
C	Replication
D	Processing
E	Repression
№	krok 2009
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	While on holiday in the countryside a boy found a spider with the following morphological peculiarities: body length 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.

Correct answer	Karakurt spider
B	Scorpion
C	Solifugae
D	Mite
E	Tarantula
№	krok 2009
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	A man has worked in an African country for 3 years. A month after his return to Ukraine he consulted an ophthalmologist and complained about eye ache, eyelid edema, lacrimation and temporary visual impairment. Underneath the eye conjunctiva the doctor revealed helminths 30-50 mm long with elongated filiform body. What diagnosis might be suspected?
Correct answer	Filariasis
B	Diphyllobothriasis
C	Ascariidiasis
D	Enterobiasis
E	Trichocephaliasis
№	krok 2009
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A 28-year-old female patient consulted a gynecologist about sterility. Examination revealed underdeveloped ovaries and uterus, irregular menstrual cycle. Analysis of the sex chromatin revealed 2 Barr's bodies in most somatic cells. What chromosome disease is
Correct answer	Triple X syndrome
B	Edwards' syndrome
C	Patau's syndrome
D	Klinefelter's syndrome
E	Turner's syndrome
№	krok 2008
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	It was proved that a molecule of immature mRNA (precursor mRNA) contained more triplets than amino acids found in the synthesized protein. The reason for that is that translation is normally preceded by:
Correct answer	Processing
B	Initiation
C	Reparation
D	Mutation

E	Replication
№	krok 2008, 2010
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	Labelled amino acids alanine and tryptophane were injected to a mouse in order to study localization of protein synthesis in its cells. The labelled amino acids will be accumulated near the following organelles:
Correct answer	Ribosomes
B	Smooth endoplasmic reticulum
C	Cell centre
D	Lysosomes
E	Golgi apparatus
№	krok 2008
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	Continuous taking of some drugs foregoing the pregnancy increase the risk of giving birth to a child with genetic defects. What is
Correct answer	Mutagenic effect
B	Embryotoxic effect
C	Teratogenic effect
D	Fetotoxic effect
E	Blastomogenic effect
№	krok 2008, 2010
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	A patient has acne on his face. Microscopic examination of scrapings from the affected areas revealed living vermiform arthropoda 0,2-0,5 mm large with four pairs of short extremities in the front part of their bodies. What is the laboratory diagnosis?
Correct answer	Demodicosis
B	Scabies
C	Myiasis
D	Pediculosis
E	Phthiriasis
№	krok 2008
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	Golgi complex exports substances from a cell due to the fusion of the membrane saccule with the cell membrane. The saccule
Correct answer	Exocytosis
B	Endocytosis

C	Active transport
D	Facilitated diffusion
E	All answers are false
№	krok 2008
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	A gynaecologist was examining a patient and revealed symptoms of genital tract inflammation. A smear from vagina contains pyriform protozoa with a spine, flagella at their front; there is also an undulating membrane. What disease can be suspected?
Correct answer	Urogenital trichomoniasis
B	Lambliasis
C	Intestinal trichomoniasis
D	Toxoplasmosis
E	Balantidiasis
№	krok 2008
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A boy has I ( $I^0 I^0$ ) blood group and his sister has IV ( $I^A I^B$ ) blood group. What blood groups do their parents have?
Correct answer	II ( $I^A I^0$ ) and III ( $I^B I^0$ )
B	II ( $I^A I^A$ ) and III ( $I^B I^0$ )
C	I ( $I^0 I^0$ ) and IV ( $I^A I^B$ )
D	III ( $I^B I^0$ ) and IV ( $I^A I^B$ )
E	I ( $I^0 I^0$ ) and III ( $I^B I^0$ )
№	krok 2008
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	For the purpose of myocardium infarction treatment a patient was injected with embryonal stem cells derived from this patient by means of therapeutic cloning. What transplantation type is it?
Correct answer	Autotransplantation
B	Allotransplantation
C	Xenotransplantation
D	Isotransplantation
E	Heterotransplantation
№	krok 2008
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS

Task	Hartnup disease is caused by point mutation of only one gene which results in disturbance of tryptophane absorption in the bowels and its resorption in the renal tubules. It is the reason for disorder of both digestive and urination systems. What genetic
Correct answer	Pleiotropy
B	Complementary interaction
C	Polymery
D	Codominance
E	Semidominance (Incomplete dominance)
№	krok 2008
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	As a result of prophylactic medical examination a 7 year old boy was diagnosed with Lesch-Nyhan syndrome (only boys fall ill with it). The boy's parents are healthy but his grandfather by his mother's side suffers from the same disease. What type of disease
Correct answer	Recessive, sex-linked
B	Dominant, sex-linked
C	Autosomal recessive
D	Autosomal dominant
E	Semidominance (Incomplete dominance)
№	krok 2007
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	According to the data of WHO, for about 250 mln of Earth population fall ill with malaria. This disease is mostly spread in tropical and subtropical regions. Range of its spread falls into the areal of the following mosquitoes:
Correct answer	Anopheles
B	Culex
C	Aedes
D	Mansonia
E	Culiseta
№	krok 2007
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	In some regions of South Africa there is a spread sickle-shaped cell anemia, in which erythrocytes have shape of a sickle as a result of substitution of glutamin by valine in the hemoglobin molecule. What is the cause of this disease?
Correct answer	Gene mutation
B	Disturbance of mechanisms of genetic information realization
C	Crossingover

D	Genomic mutations
E	Transduction
№	krok 2007
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	RNA that contains AIDS virus penetrated into a leukocyte and by means of reverse transcriptase forced a cell to synthesize a viral
Correct answer	Reverse transcription
B	Operon repression
C	Reverse translation
D	Operon depression
E	Convariant replication
№	krok 2007
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	Autopsy of a newborn boy revealed polydactyly, microcephalia, cheiloschisis and uranoschisis as well as hypertrophy of parenchymatous organs. These defects correspond with the description of Patau's syndrome. What is the most probable cause of this
Correct answer	Trisomy of the 13th chromosome
B	Trisomy of the 18th chromosome
C	Trisomy of the 21st chromosome
D	Nondisjunction of sex chromosomes
E	Partial monosomy
№	krok 2007
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	A patient has symptoms of inflammation of urogenital tracts. Examination of a vaginal smear revealed big monocellular, pearshaped organisms with the pointed spike at the posterior end of body, big nucleus and undulating membrane. What protozoa were found in
Correct answer	<i>T richomonas vaginalis</i>
B	<i>T richomonas hominis</i>
C	<i>T richomonas buccalis</i>
D	<i>T rypanosoma gambiense</i>
E	<i>Lambliia intestinalis</i>
№	krok 2007
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	A patient complains of pain in the area of his liver. Duodenal intubation revealed yellowish, oval, narrowed at the poles eggs with an operculum at the end. Size of these eggs is the smallest among all helminth eggs. What is the most probable diagnosis?

Correct answer	Opisthorchosis
B	Teniasis
C	Beef tapeworm infection
D	Echinococcosis
E	Diphyllobothriasis
№	krok 2007
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	A child complains of general weakness, loss of appetite, a troubled sleep, itching in the perianal area. The provisional diagnosis is enterobiasis. In order to specify this diagnosis it is necessary to perform:
Correct answer	Scraping from perianal folds
B	Roentgenoscopy
C	Biopsy of muscle tissue
D	Immune diagnostics
E	Duodenal contents analysis
№	krok 2007
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	In course of practical training students studied a stained blood smear of a mouse with bacteria phagocyted by leukocytes. What cell organelle completes digestion of these bacteria?
Correct answer	Lysosomes
B	Mytochondria
C	Granular endoplasmic reticulum
D	Golgi apparatus
E	Ribosomes
№	krok 2007
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	Two days after consumption of smoked pork a patient got face and eyelid edemata, gastrointestinal disturbances, abrupt temperature rise, muscle pain. Blood analysis showed full-blown eosinophilia. What helminth could the patient be infected with?
Correct answer	Trichina
B	Pinworm
C	Ascarid
D	Whipworm
E	Hookworm



№	krok 2007
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	A lymph node punctate of a patient with suspected protozoal disease was examined. Examination of the stained specimen (Romanovsky's stain) revealed some crescent bodies with pointed end, blue cytoplasm and red nucleus. What protozoan were
Correct answer	Toxoplasms
B	Malarial plasmodiums
C	Dermotropic leishmania
D	Viscerotropic leishmania
E	Trypanosomes
№	krok 2010
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	According to the model of double DNA helix that was suggested by Watson and Creek, it was established that one of chains would not be lost during replication and the second chain would be synthesized complementary to the first one. What way of replication is
Correct answer	Semiconservative
B	Analogous
C	Identical
D	Dispersed
E	Conservative
№	krok 2010
Topic	SECTION 3. POPULATION, SPECIES, BIOGEOCEONOTIC AND BIOSPHERE LEVELS OF LIVING MATTER
Task	During regular examination of schoolchildren it was revealed that a 10 year old girl had asymmetric oval eggs with a larva in the scrape from her perianal folds. What diagnosis should be made?
Correct answer	Enterobiasis
B	Ascariasis
C	Amebiasis
D	Trichocephalosis
E	Ankylostomiasis
№	krok 2010
Topic	SECTION 2. INHERITANCE AND VARIATION IN HUMANS
Task	A family of students who came from Africa got a child with anemia signs. The child died soon. Examination revealed that the child's erythrocytes have abnormal semilunar shape. Specify genotypes of the child's parents:
Correct answer	Aa x Aa

B	Aa x aa
C	AA x AA
D	aa x aa
E	Aa x AA
№	krok 2010
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	Normal, actively dividing cells of human red bone marrow are analyzed. What number of cells' chromosomes is typical for G1
Correct answer	46
B	48
C	47
D	45
E	23
№	krok 2010
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	A couple had a child with Down's disease. Mother is 42 years old. This disease is most probably caused by the following impairment
Correct answer	Gametopathy
B	Blastopathy
C	Embryopathy
D	Non-specific fetopathy
E	Specific fetopathy
№	krok 2010
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES
Task	A patient in a transplantation centre underwent heart transplantation. The organ was taken from a donor who died in a road accident. Foreign heart can be rejected as a result of development of transplantation immunity. It is usually prevented by means of:
Correct answer	Immunosuppressors
B	Chemotherapy
C	Ultrasound
D	Enzymes
E	X-ray therapy
№	krok 2010
Topic	SECTION 1. BIOLOGICAL PECULIARITIES OF HUMAN ACTIVITIES

Task	An alcoholic woman has born a girl with mental and physical developmental lag. Doctors diagnosed the girl with fetal alcohol syndrome. What effect is the cause of the girl's state?
Correct answer	Teratogenic
B	Mutagenic
C	Malignization
D	Carcinogenic
E	Mechanic
№	№
Topic	. biological peculiarities of human activities
Task	An 18-year-old student presents with enlarged thyroid gland accompanied by accelerated metabolism and increased heart rate. These signs can be observed during hypersecretion of thyroxin. What organelles of thyroid cells are primarily responsible for hormone
Correct answer	Golgi apparatus
B	Mitochondria
C	Ribosomes
D	Centrosomes
E	Lysosomes
№	krok 2018
Topic	population, species, biogeocoenotic and biosphere levels of living matter organization
Task	A patient presents with indigestion, stomachaches, and excessive salivation. Similar symptoms had already been observed in this patient previously. Laboratory analysis detected oval eggs covered with lumpy capsules in the patient's feces. What is the most
Correct answer	Ascariasis
B	Trichocephaliasis
C	Diphyllobothriasis
D	Enterobiasis
E	Fascioliasis
№	krok 2018
Topic	. inheritance and variation in humans
Task	A 40-year-old pregnant woman underwent amniocentesis. Examination determined the fetal karyotype to be 47, XY+21. What fetal
Correct answer	Down syndrome
B	Klinefelter syndrome
C	Turner syndrome
D	Phenylketonuria

E	Patau syndrome
№	krok 2018
Topic	inheritance and variation in humans
Task	A 20-year-old young man with tall stature, asthenic body type, signs of hypogonadism and gynecomastia, and low sperm count (azoospermia) has karyotype 47, XXY. What hereditary syndrome can be characterized by this chromosomal anomaly?
Correct answer	Klinefelter syndrome
B	Wiskott-Aldrich syndrome
C	Turner syndrome
D	Louis-Bar syndrome (ataxia-telangiectasia)
E	Down syndrome
№	krok 2018
Topic	biological peculiarities of human activities
Task	General structure of eukaryotic genes is as follows: exon-intron-exon. Such functional structure of a gene leads to certain specifics of the transcription process. What sequence will correspond with precursor mRNA (immature)?
Correct answer	Exon-intron-exon
B	Exon-exon-intron
C	Exon-exon
D	Intron-exon
E	Exon-intron
№	krok 2018
Topic	inheritance and variation in humans
Task	A mutation has occurred in a cell in the first exon of the structural gene. The number of nucleotide pairs changed from 290 to 250.
Correct answer	Deletion
B	Inversion
C	Duplication
D	Translocation
E	Nullisomy
№	krok 2018
Topic	inheritance and variation in humans
Task	A 25-year-old woman at her third pregnancy with impending miscarriage was brought to the hospital. What combination of Rh-factor of the mother and the fetus can be the cause of this condition?
Correct answer	Mother Rh (-), fetus Rh (+)

B	Mother Rh (-), fetus Rh (-)
C	Mother Rh (+), fetus Rh (-)
D	Mother Rh (+), fetus Rh (+)
E	-
№	krok 2018
Topic	. biological peculiarities of human activities
Task	A specimen of a 10-day-old human embryo shows two interconnected sacs (amniotic and yolk sacs). Name the structure located in the place where these two sacs connect:
Correct answer	Embryonic shield
B	Floor of the amniotic sac
C	Roof of the amniotic sac
D	Amniotic stalk
E	Extraembryonic mesoderm
№	krok 2018
Topic	biological peculiarities of human activities
Task	A microslide of the skin sample taken from the finger of a child shows that epidermis is insufficiently developed. What germ layer was damaged in the process of embryo development?
Correct answer	Ectoderm
B	Mesoderm
C	Endoderm
D	Mesenchyme
E	Ectomesenchyme
№	krok 2018
Topic	inheritance and variation in humans
Task	Genealogical analysis of a child with myotonic dystrophy determined that this disease is present in every generation, equally presented by the relatives of both genders, the risk of inheriting this disease is equal no matter which parent is affected. If one of the parents is heterozygous for this disease and the other parent is healthy, the risk of them giving birth to a sick child is 50%. What
Correct answer	Autosomal dominant
B	Autosomal recessive
C	X-linked dominant
D	X-linked recessive
E	Y-linked

№	krok 2018, 2019
Topic	population, species, biogeocoenotic and biosphere levels of living matter organization
Task	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 mi-cron in size, with a terminal spike. What diagnosis can be
Correct answer	Schistosomiasis
B	Opisthorchiasis
C	Dicrocoeliasis
D	Paragonimiasis
E	Fascioliasis
№	krok 2018, 2019
Topic	biological peculiarities of human activities
Task	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:
Correct answer	Reverse transcription
B	Replication
C	Transcription
D	Repair
E	Translation
№	krok 2018
Topic	population, species, biogeocoenotic and biosphere levels of living matter organization
Task	Sanitary assessment of a pond, where the children from a recreation summer camp take their swims, detected there oval cysts 50-60 micron in diameter, with 2 nuclei visible in their cytoplasm (macronucleus and micronucleus). What protozoa do these cysts belong
Correct answer	Balantidium
B	Lambliia
C	Toxoplasma
D	Amoeba
E	Euglena
№	krok 2018
Topic	biological peculiarities of human activities
Task	Genetic recombination is achieved via several mechanisms. One such mechanism is crossing over. It occurs at the following stage of prophase in the first meiotic division:
Correct answer	Pachynema

B	Leptonema
C	Zygonema
D	Diplonema
E	Diakinesis
№	krok 2019
Topic	biological peculiarities of human activities
Task	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:
Correct answer	Detoxication of harmful substances
B	Protein synthesis
C	Nucleic acid synthesis
D	Intracellular digestion
E	Formation of maturation spindle
№	krok 2019
Topic	inheritance and variation in humans
Task	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?
Correct answer	Autosomal recessive
B	Autosomal dominant
C	X-linked recessive
D	Y-linked
E	X-linked dominant
№	krok 2019
Topic	inheritance and variation in humans
Task	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?
Correct answer	Genetic recombination
B	DNA replication
C	DNA repair
D	Formation of Okazaki fragments
E	Gene amplification
№	krok 2019

Topic	population, species, biogeocenotic and biosphere levels of living matter organization
Task	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?
Correct answer	Exhaustfumes
B	Herbicides
C	Sewage
D	Chemicalfertilizers
E	Acid rains
№	krok 2019
Topic	inheritance and variation in humans
Task	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?
Correct answer	Down syndrome
B	Edward syndrome
C	Patau syndrome
D	Klinefelter syndrome
E	Morrison syndrome (androgen insensitivity)
№	krok 2019
Topic	population, species, biogeocenotic and biosphere levels of living matter organization
Task	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?
Correct answer	Foxes
B	Sick people
C	Birds
D	Fish
E	Rodents
№	krok 2019
Topic	inheritance and variation in humans



Task	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
Correct answer	Turnersyndrome
B	Klinefeltersyndrome
C	Cri du chat ("cat-cry") syndrome
D	Patau syndrome
E	Edwardssyndrome
№	krok 2019
Topic	population, species, biogeocentric and biosphere levels of living matter organization
Task	After dehelminthization, 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.
Correct answer	Taeniasis
B	Opisthorchiasis
C	-
D	Diphyllobothriasis
E	Echinococcosis
№	krok 2019
Topic	biological peculiarities of human activities
Task	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
Correct answer	Telophase
B	Anaphase
C	Prophase
D	Metaphase
E	-
№	krok 2019
Topic	inheritance and variation in humans
Task	A young man has come to the genetic consultation. He complains of abnormalities in his physical and reproductive development. Microscopy of his oral mucosa cells shows one Barr body. What karyotype is the most likely in this young man?

Correct answer	47,XXY
B	47,XY, +18
C	47,XY, +21
D	45,X
E	47,XYY
№	krok 2020
Topic	population, species, biogeocenotic and biosphere levels of living matter organization
Task	Biological studies proved that the intensity of testosterone secretion and spermatogenesis varies in men throughout each 24 hours. These biorhythms are called:
Correct answer	Circadian
B	Lunar
C	Annual
D	Seasonal
E	Tidal
№	krok 2020
Topic	biological peculiarities of human activities
Task	A diet must contain fats. What plasticity function do they fulfill in the body?
Correct answer	They are a part of cellular membranes
B	They are a part of cellular receptors
C	They are a part of cellular ion channels
D	They are a part of cellular ion pumps
E	They are a part of glycocalyx
№	krok 2020
Topic	biological peculiarities of human activities
Task	Histology of the liver detected there a vesicle with chitin and protein membrane, filled with a colorless transparent fluid. What
Correct answer	Echinococcosis
B	Cysticercosis
C	Schistosomiasis
D	Opisthorchiasis
E	Balantidiasis
№	krok 2020

Topic	biological peculiarities of human activities
Task	It has been found experimentally that activation of amino acids and their binding to the tRNA is an important stage of preparation for protein synthesis in the cells. What substance takes part in this process?
Correct answer	ATP
B	FAD
C	Coenzyme A
D	Phosphoric acid
E	NAD+
№	krok 2020
Topic	biological peculiarities of human activities
Task	Protein synthesis occurs in several stages. During one of them, messenger RNA is being synthesized on one of the strands of a DNA
Correct answer	Transcription
B	Termination
C	Elongation
D	Translation
E	Replication
№	krok 2020
Topic	population, species, biogeocoenotic and biosphere levels of living matter organization
Task	A patient diagnosed with liver abscess was hospitalized into the surgery department. He has a history of frequent gastrointestinal disturbances. Laboratory analysis of the patient's feces detected round cells with 4 nuclei. What species of protozoa is this patient infected with?
Correct answer	<i>Entamoeba histolytica</i>
B	<i>Balantidium coli</i>
C	<i>Entamoeba gingivalis</i>
D	<i>Trichomonas hominis</i>
E	<i>Trichomonas vaginalis</i>
№	krok 2020
Topic	inheritance and variation in humans
Task	A woman gave birth to twins. One of them was provisionally diagnosed with Cri-du-chat syndrome that manifests as underdeveloped laryngeal muscles and "meowing" voice timbre. This syndrome occurs because of chromosome mutation. What
Correct answer	Cytogenetic

B	Population statistics
C	Biochemical
D	Twin study
E	Amniocentesis
№	krok 2020
Topic	biological peculiarities of human activities
Task	One of the cell organelles is the place, where protein molecules are being built and packaged with carbohydrates and fats, before they are transported from the cell via exocytosis. What organelle is it?
Correct answer	Golgi apparatus
B	Lysosomes
C	Peroxisomes
D	Ribosomes
E	Mitochondria
№	krok 2020
Topic	biological peculiarities of human activities
Task	A patient with inherited immunodeficiency underwent gene therapy: the gene of an enzyme was introduced into the patient's cells using a retrovirus. What characteristic of the genetic code allows using retroviruses as vectors of functional genes?
Correct answer	Universality
B	Commaless
C	Colinearity
D	Non-ambiguity
E	Degeneracy
№	krok 2021
Topic	population, species, biogeocenotic and biosphere levels of living matter organization
Task	A man, who recently returned from an African country, came to the urologist complaining of painful urination. A urine sample, obtained for analysis during the daytime, contains eggs with a characteristic spike. Make the diagnosis:
Correct answer	Urogenital schistosomiasis
B	Japanese schistosomiasis
C	Opisthorchiasis
D	Intestinal schistosomiasis
E	Dicrocoeliasis
№	krok 2021

Topic	population, species, biogeocoenotic and biosphere levels of living matter organization
Task	Patients from the same family were admitted to a hospital with edema of the eyelids and face, fever, eosinophilia, headache, and muscle pain. The disease onset occurred 7-10 days after eating pork sausage. Make the diagnosis:
Correct answer	Trichinellosis
B	Taeniarhynchosis
C	Echinococcosis
D	Cysticercosis
E	Taeniasis
№	krok 2021
Topic	population, species, biogeocoenotic and biosphere levels of living matter organization
Task	A 16-year-old young man complains of itching between the fingers, and on his abdomen that intensifies at night. Examination detects thin gray streaks and fine rash on his skin. What is the most likely causative agent of this disease:
Correct answer	Sarcoptes scabiei
B	Ixodes persulcatus
C	Ornithodoros papillipes
D	Ixodes ricinus
E	Dermacentor pictus
№	krok 2021
Topic	inheritance and variation in humans
Task	A couple gave birth to a son with hemophilia. The parents themselves are healthy, but the maternal grandfather has hemophilia. Determine the type of inheritance of this trait:
Correct answer	Sex-linked recessive
B	Autosomal recessive
C	Autosomal dominant
D	Y-linked
E	Sex-linked dominant
№	krok 2021
Topic	biological peculiarities of human activities
Task	The process of tissue respiration is accompanied by oxidation of organic compounds and synthesis of macroergic molecules. In what organelles does this process occur?
Correct answer	Mitochondria
B	Golgi apparatus

C	Ribosomes
D	Peroxisomes
E	Lysosomes
№	krok 2021
Topic	biological peculiarities of human activities
Task	The initiation of transcription process becomes possible when an enzyme DNA- dependent RNA polymerase attaches to a certain segment of DNA molecule. Name this DNA segment:
Correct answer	Promoter
B	Terminator
C	Supressor
D	Regulator
E	Repressor
№	krok 2021
Topic	biological peculiarities of human activities
Task	A mutation has occurred :n a cell in the first exon of the structural cene. The number of nucleotide pair's changed from 290 to 250.
Correct answer	Deletion
B	Nullisomy
C	Inversion
D	Translocation
E	Duplication
№	krok 2021
Topic	biological peculiarities of human activities
Task	Histone protein synthesis is artificially blocked in a cell. What cell structure will be damaged as a result?
Correct answer	Nuclear chromatin
B	Nucleolus
C	Golgi apparatys
D	Nuclear membrane
E	Cell membrane
№	krok 2021
Topic	population, species, biogeocoonotic and biosphere levels of living matter organization

Task	After examination, a man, who lived in the Ural region was diagnosed with taiga encephalitis. The causative agent of this disease could have been transmitted to the patient via a bite of:
Correct answer	Ixodes ricinus
B	Phlebotomus papu
C	Stomoxys calcitrans
D	Ornithodoros papillipes
E	Ixodes persulcatu
№	krok 2021
Topic	population, species, biogeocoenotic and biosphere levels of living matter organization
Task	After a thorough examination, a man, who has returned to Ukraine from the Central Asia, was provisionally diagnosed with spring-summer encephalitis. In such cases, the causative agent is transmitted via the bites of a certain arthropod. Name this arthropod:
Correct answer	Ixodes ricinus
B	Ixodes persulcatus
C	Ornithodoros papillipes
D	Sarcoptes scabiei
E	Phlebotominae
№	krok 2021
Topic	biological peculiarities of human activities
Task	A man is a carrier of AIDS virus that is an RNA virus. The cells of this patient synthesize viral DNA. This process is based on:
Correct answer	Reverse transcription
B	Translation
C	Transcription
D	Repair
E	Replication
№	krok 2021
Topic	inheritance and variation in humans
Task	What type of disease inheritance results in men being affected by hemophilia, while women are the carriers of this disease?
Correct answer	X-linked recessive
B	X-linked dominant
C	Y-linked
D	Autosomal recessive
E	Autosomal dominant

№	krok 2021
Topic	biological peculiarities of human activities
Task	Watson and Crick determined that the DNA double helix structure is stabilized with the bonds between complementary nitrogenous
Correct answer	Hydrogen
B	Phosphodiester
C	N-glycosidic
D	Ester
E	Peptide