№1	2023
Тема	cytology
Текст завдання	A patient had her tooth extracted in a dental clinic. Stratilied squamous epithelium regenerated two weeks later. What organelles took part in the restoration of the mucosa?
Правильна відповідь	Ribosomes
B	Smooth endoplasmic reticulum
C	Postlysosomes
D	Centrosomes
E	Mitochondria
№2	2023
Тема	blood
Текст завдання	The study of a blood smear obtained from a patient with an inflammatory process detects a large number of round cells with a segmented nucleus (three or more segments) and fine pink-violet granulation in the cytoplasm. What blood cells were detected?
Правильна відповідь	Neutrophilic granulocytes
B	Eosinophilic granulocytes
C	Erythrocytes
D	Lymphocytes
E	Basophilic granulocytes
№3	2023
Тема	stomach
Текст завдання	A patient has been diagnosed with chronic gastritis. Intragastric pH-metry detects decreased acidity of the gastric juice. What cells have a reduced function in this case?
Правильна відповідь	Gastric parietal cells
B	Gastric chief cells

C	Mucocytes
D	-
E	Enteroendocrine cells
№4	2023
Тема	urinary system
Текст завдання	Laboratory testing detects glucose in the urine of an 18-year-old patient, while glucose levels in the patient's blood plasma are normal. What is the likely cause of this disorder?
Правильна відповідь	Tubular rcabsorption
B	Insulin secretion
C	Secretion of glucocorticoids
D	Ihbular secretion
E	Glomerular filtration
№5	2023
Тема	female reproductive system
Текст завдання	The corpus luteum forms during the luteal phase of the menstrual cycle. This temporary endocrine gland stimulates the synthesis of a certain hormone. What hormone is it?
Правильна відповідь	Progesterone
B	Corticosterone
C	Parathyroid hormone
D	Aldosterone
E	Testosterone
№6	2023
Тема	cytology
Текст завдання	In a scientific experiment, a structure in one of the cell components has been destroyed, impairing the cell's ability to divide. What structure has been destroyed?
Правильна відповідь	Centrosomc

B	Microfibrils
C	Glycocalyx
D	Ribosomes
E	Mitochondria
№7	2023
Тема	respiratory system
Текст завдання	Alveoli of the lungs have special cells, through which gas exchange occurs. These cells are a part of the blood-air barrier. Name these cells.
Правильна відповідь	Alveolar type I cells
B	Alveolar type II cells
C	Microvillous epithelial cells
D	Clara cells
E	Alveolar macrophages
№8	2023
Тема	organ of vision
Текст завдання	Vitamin *A* deficiency causes impaired twilight vision. What cells have this receptor function?
Правильна відповідь	Neurosensory rod cells
B	Bipolar neurons
C	Neurosensory cone cells
D	Retinal horizontal cells
E	Ganglionic neurons
№	1
Topic	Krok 2007-2017
Task	1. 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 organellas:
Correct answer	Ribosomes
B	Smooth endoplasmic reticulum

C	Cell centre
D	Lysosomes
E	Golgi apparatus
№	2
Topic	Krok 2007-2017
Task	10. A histological specimen of spleen shows a vessel with a wall consisting of endothelium and subendothelial layer, median membrane is absent, exterior membrane inosculates with the layers of spleen connective tissue. What vessel is it?
Correct answer	Vein of non-muscular type
B	Vein of muscular type
C	Artery of muscular type
D	Arteriole
E	Capillary
№	3
Topic	Krok 2007-2017
Task	100. A patient with clinical signs of a primary immunodeficiency has functionally disturbed mechanism of antigen-presentation to the immunocompetent cells. What cells are likely to have structural defects?
Correct answer	Macrophages, monocytes
B	T-lymphocyte
C	B-lymphocyte
D	Fibroblasts
E	O-lymphocytes
№	4
Topic	Krok 2007-2017
Task	101. 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
№	5

Topic	Krok 2007-2017
Task	101. Hospital has received a 24-year-old man, who had received a penetrating wound to the eye,which has caused the vitreous body to run out. As the result of this, retinal detachment occurred. What retinal layer was tightly adherent to the vascular tunic of the eye and did not detach?
Correct answer	Retinal pigment epithelium
B	Layer of rods and cones
C	Ganglion cell layer
D	Outer nuclear layer
E	Inner nuclear layer
№	6
Topic	Krok 2007-2017
Task	102. An electron micrograph shows a small vessel with endothelial layer but without basement membrane and pericytes; anchoring fibrils are present. Name this vessel:
Correct answer	Lymph capillary
B	Arteriole
C	Venule
D	Sinusoid hemocapillary
E	Visceral hemocapillary
№	7
Topic	Krok 2007-2017
Task	103. Ionizing radiation or vitamin E deficiency affect the cell by increasing lysosome membrane permeability. What are the possible consequences of this pathology?
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
№	8
Topic	Krok 2007-2017
Task	11. In course of a conditional experiment the development of mesenchyma cells was completely inhibited. Development of the following muscular tissue will be disturbed:
Correct answer	Smooth muscular tissue

B	Neural muscular tissue
C	Epidermal muscular tissue
D	Cardiac muscular tissue
E	Skeletal muscular tissue
№	9
Topic	Krok 2007-2017
Task	12. A patient ill with chronic gastritis went for endogastric pH-metry that allowed to reveal decreased acidity of gastric juice. It is indicative of diminished function of the following cells:
Correct answer	Parietal exocrinocytes
B	Chief exocrinocytes
C	Endocrinocytes
D	Cervical cells
E	Accessory cells
№	10
Topic	Krok 2007-2017
Task	13. Ultramicroscopical examination of "dark"hepatocyte population in the cell cytoplasm detected a developed granular endoplasmic reticulum. What function has this organella in these cells?
Correct answer	Synthesis of blood plasma proteins
B	Carbohydrate synthesis
C	Deintoxicative function
D	Bile production
E	Calcium ion depositing
№	11
Topic	Krok 2007-2017
Task	14. An endocrinal gland with parenchyma consisting of epithelium and neural tissue is under morphological examination. Epithelial trabecules have two types of cells: chromophilic and chromophobic. Identify this organ:
Correct answer	Hypophysis
B	Adrenal glands
C	Hypothalamus
D	Thyroid gland
E	Parathyroid gland

№	12
Topic	Krok 2007-2017
Task	15. An electronic microphotograph shows a macrophagic cell with erythrocytes at different stages of differentiation located along its processes. This is the cell of the following organ:
Correct answer	Red bone marrow
B	Thymus
C	Spleen
D	Tonsil
E	Lymph node
№	13
Topic	Krok 2007-2017
Task	16. Examination of a 2-year-old child revealed physical developmental lag, the child often has pneumonias. The child was diagnosed with nonclosure of ductus arteriosus. Haemodynamics disorder was caused by the intercommunication of the following vessels:
Correct answer	Aorta and pulmonary trunk
B	Pulmonary trunk and pulmonary veins
C	Superior cava and aorta
D	Superior cava and pulmonary trunk
E	Aorta and pulmonary veins
№	14
Topic	Krok 2007-2017
Task	17. Histological specimen presents a receptor zone of a sensoepithelial sense organ. Cells of this zone are placed upon the basal membrane and include the following types: external and internal receptor cells, external and internal phalangeal cell, stem cells, external limiting cells and external supporting cell. The described receptor zone belongs to the following sense organ:
Correct answer	Acoustic organ
B	Visual organ
C	Gustatory organ
D	Equilibrium organ
E	Olfactory organ
№	15
Topic	Krok 2007-2017

Task	18. A patient was admitted to the hospital with an asphyxia attack provoked by a spasm of smooth muscles of the respiratory tracts. This attack was mainly caused by alterations in the following parts of the airways:
Correct answer	Small bronchi
B	Median bronchi
C	Large bronchi
D	Terminal bronchioles
E	Respiratory part
№	16
Topic	Krok 2007-2017
Task	19. In a histological specimen parenchyma of an organ is represented by lymphoid tissue that forms lymph nodes; the latter are arranged in a diffuse manner and enclose a central artery. What anatomic formation has such morphological structure?
Correct answer	Spleen
B	Tonsil
C	Lymph node
D	Thymus
E	Red bone marrow
№	17
Topic	Krok 2007-2017
Task	2. Examination of an ovary specimen stained by hematoxylin-eosine revealed a follicle in which follicular epithelium consisted of 1-2 layers of cubic cells. There was also a bright red membrane around the ovocyte. What follicle is it?
Correct answer	Primary
B	Primordial
C	Secondary
D	Mature
E	Atretic
№	18
Topic	Krok 2007-2017
Task	20. A histological specimen of a kidney shows a part of the distal tubule going between the afferent and efferent arteriole. The cells building the tubule wall have dense nuclei; basal membrane is absent. Such structural formation is called:

Correct answer	Macula densa
B	Juxtaglomerular cells
C	Mesangial cells
D	Juxtavascular cells
E	–
№	19
Topic	Krok 2007-2017
Task	21. A histological specimen shows a blood vessel. Its inner coat is composed by endothelium, subendothelium and internal elastic membrane. The middle coat is enriched with smooth myocytes. Such morphological characteristics are typical for the following vessel:
Correct answer	Muscular-type artery
B	Elastic-type artery
C	Capillary
D	Non-muscular vein
E	Muscular-type vein
№	20
Topic	Krok 2007-2017
Task	22. During an experiment the dorsal roots of the spinal cord of an animal have been cut. What changes will be observed in the innervation zone?
Correct answer	Sensitivity loss
B	Loss of motor functions
C	Decrease in muscle tone
D	Increase in muscle tone
E	Sensitivity loss and loss of motor functions
№	21
Topic	Krok 2007-2017
Task	23. While examining the oral cavity a stomatologist revealed inflammation of papillae on the border of the median and posterior third of the back of tongue. What papillae are inflamed?
Correct answer	Papillae vallatae
B	Papillae fungiformes
C	Papillae foliatae
D	Papillae filiformes

E	Papillae conicae
№	22
Topic	Krok 2007-2017
Task	24. In the pubertal period cells of the male sexual glands start producing the male sexual hormone testosterone that is responsible for formation of the secondary sexual characters. What cells of the male sexual glands produce this hormone?
Correct answer	Leidig cells
B	Sustenocytes
C	Sertoli's cells
D	Sustentacular cells
E	Spermatozoa
№	23
Topic	Krok 2007-2017
Task	25. Pyeloureterography X-ray photo showed a renal pelvis with minor calyces only (major calyces were absent). What form of urinary tracts of a kidney was revealed?
Correct answer	Embryonal
B	Fetal
C	Mature
D	Ampullar
E	–
№	24
Topic	Krok 2007-2017
Task	26. In an embryo the process of dorsal mesoderm segmentation and somite formation is disturbed. What part of skin will probably have developmental abnormalities?
Correct answer	Dermis
B	Hair
C	Sebaceous glands
D	Epidermis
E	Perspiratory glands
№	25
Topic	Krok 2007-2017

Task	27. Following exposure to radiation a lot of mutant cells appeared in a patient. Some time later most of them were detected and destroyed by the following
Correct answer	T-lymphocytes-killers
B	Plasmoblasts
C	T-lymphocytes-supressors
D	5-lymphocyte
E	Stem cells
№	26
Topic	Krok 2007-2017
Task	28. A microspecimen of the submandibular salivary gland shows some basketshaped cells concentrated around the acines and excretory ducts. These cells surround bases of the serous cells and are called myoepitheliocytes. These cells relate to the following tissue:
Correct answer	Muscular tissue
B	Epithelial tissue
C	Neural tissue
D	Special connective tissue
E	Loose fibrous connective tissue
№	27
Topic	Krok 2007-2017
Task	29. Histological examination of a 40 year old man’s thymus revealed reduced share of parenchymatous elements, increased share of adipose and loose connective tissue, its enrichment with thymus bodies. The organ’s mass was unchanged. What is this phenomenon called?
Correct answer	Age involution
B	Accidental involution
C	Hypotrophy
D	Dystrophy
E	Atrophy
№	28
Topic	Krok 2007-2017
Task	3. In course of an experiment a big number of stem cells of red bone marrow was in some way destructed. Regeneration of which cell populations in the loose connective tissue will be inhibited?
Correct answer	Of macrophags

B	Of fibroblasts
C	Of pigment cells
D	Of lipocytes
E	Of pericytes
№	29
Topic	Krok 2007-2017
Task	30. Normal, actively dividing cells of human red bone marrow are analyzed. What number of cells' chromosomes is typical for G1 period?
Correct answer	46
B	48
C	47
D	45
E	23
№	30
Topic	Krok 2007-2017
Task	31. A scheme presents an exocrinous gland that has unbranched excretory duct with a terminal part in form of a saccule openining into the duct. How is this gland called according to the morphological classification of exocrinous glands?
Correct answer	Simple unbranched alveolar
B	Compound branched alveolar
C	Simple branched tubular
D	Compound unbranched alveolar
E	Compound unbranched alveolar tubular
№	31
Topic	Krok 2007-2017
Task	32. A female patient underwent liver transplantation. 1,5 month after it her condition became worse because of reaction of transplant rejection. What factor of immune system plays the leading part in this reaction?
Correct answer	T-killers
B	Interleukin-1
C	Natural killers
D	B-lymphocytes
E	T-helpers

№	32
Topic	Krok 2007-2017
Task	33. Electronic microphotography of pulmonary alveole’s wall presents a big cell. Its cytoplasm has a lot of mitochondria, developed Golgi apparatus, osmiophil lamellated corpuscles. What is the main function of this cell?
Correct answer	It produces surfactant
B	It is a component of blood-air barrier
C	It warms the air
D	It purifies the air
E	It absorbs microorganisms
№	33
Topic	Krok 2007-2017
Task	35. A viral infection has damaged cells that form walls of bile capillaries. This stimulated conditions for inflow of bile into the blood of sinusoidal capillaries. What cells are damaged?
Correct answer	Hepatocytes
B	Kupffer’s cells
C	Ito cells
D	Pit-cells
E	Endotheliocytes
№	34
Topic	Krok 2007-2017
Task	36. A histological specimen presents an artery. One of the membranes of its wall has flat cells lying on the basal membrane. What type of cells is it?
Correct answer	Endothelium
B	Mesothelium
C	Smooth myocytes
D	Fibroblasts
E	Macrophages
№	35
Topic	Krok 2007-2017

Task	37. One of sections of central nervous system has layerwise arrangement of neurocytes. Among them there are cells of the following forms: stellate, fusiform, horizontal, pyramidal. What section of central nervous system is this structure typical for?
Correct answer	Cortex of cerebrum
B	Spinal cord
C	Cerebellum
D	Medulla oblongata
E	Hypothalamus
№	36
Topic	Krok 2007-2017
Task	38. Study of fingerprints (dactylography) is used by criminalists for personal identification as well as for diagnostics of genetic abnormalities, particularly Dawn’s disease. What layer of skin determines individuality of fingerprints?
Correct answer	Dermopapillary
B	Horny
C	Reticular
D	Clear (stratum lucidum epidermidis)
E	Basal
№	37
Topic	Krok 2007-2017
Task	39. An infectious disease caused contractive activity of muscles that contract and dilate eye pupil (paralytic state). What functional eye system was damaged?
Correct answer	Accomodative
B	Dioptric
C	Ancillary
D	Photosensory
E	Lacrimal apparatus
№	38
Topic	Krok 2007-2017
Task	4. While studying maximally spiralized chromosomes of human karyotype the process of cell division was stopped in the following phase:
Correct answer	Metaphase

B	Prophase
C	Interphase
D	Anaphase
E	Telophase
№	39
Topic	Krok 2007-2017
Task	40. A female patient presents with endocrine dysfunction of follicular cells of the ovarian follicles resulting from an inflammation. The synthesis of the following hormone will be inhibited:
Correct answer	Estrogen
B	Progesterone
C	Lutropin
D	Follicle stimulating hormone
E	Follistatine
№	40
Topic	Krok 2007-2017
Task	41. An electron microphotography of a fragment of proper gastric gland shows a big irregular round-shaped cell. There are a lot of intracellular tubules and mitochondria in the cytoplasm. Specify these cells:
Correct answer	Parietal cell
B	Principal cell
C	Undifferentiated cell
D	Mucous cell
E	Endocrine cell
№	41
Topic	Krok 2007-2017
Task	42. On an electron micrograph a scientist has identified a structure formed by eight histone proteins and a part of DNA molecule which makes about 1,75 revolutions around the molecules. Which structure has been identified?
Correct answer	Nucleosoma
B	Elemetary fibril
C	Half-chromatid
D	Chromatid
E	Chromosome

№	42
Topic	Krok 2007-2017
Task	43. A histologic specimen shows an organ's parenchyma which is presented by lymphoid tissue making some lymph nodes. The nodes are located diffusively and contain a central artery. What anatomic formation might have such morphological structure?
Correct answer	Spleen
B	Red bone marrow
C	Thymus
D	Tonsil
E	Lymph node
№	43
Topic	Krok 2007-2017
Task	44. During postembryonal haemopoiesis in the red bone marrow the cells of one of the cellular differons demonstrate a gradual decrease in cytoplasmic basophilia as well as an increase in oxyphilia, the nucleus is being forced out. Such morphological changes are typical for the following haemopoiesis type:
Correct answer	Erythropoiesis
B	Lymphopoiesis
C	Neutrophil cytopoiesis
D	Eosinophil cytopoiesis
E	Basophil cytopoiesis
№	44
Topic	Krok 2007-2017
Task	45. A microspecimen of heart shows rectangular cells from 50 to 120 mcm large with central position of nucleus, developed myofibrils. The cells are connected by intercalated discs. These cells are responsible for the following function:
Correct answer	Function of heart contractions
B	Function of impulse conduction
C	Endocrine
D	Protective
E	Regeneratory
№	45
Topic	Krok 2007-2017

Task	46. As a result of a trauma a patient has damaged anterior roots of spinal cord. What structures have been affected?
Correct answer	Axons of motoneurons and axons of neurons of lateral horns
B	Central processes of sensitive neurons of spinal ganglions
C	Peripheral processes of sensitive spinal ganglions
D	Axons of neurons of lateral horns
E	Dendrites of neurons of spinal ganglions
№	46
Topic	Krok 2007-2017
Task	47. During cytoscopy mucous membrane of urinary bladder normally makes folds except for a single triangular area with smooth mucosa. This triangle is located in the following part of urinary bladder:
Correct answer	Bladder floor
B	Bladder cervix
C	Bladder apex
D	Bladder body
E	Bladder isthmus
№	47
Topic	Krok 2007-2017
Task	48. A histological specimen of kidney shows a structure consisting of a glomerulus of fenestrated capillaries and a bilayer epithelial capsule. Specify this structure:
Correct answer	Renal corpuscle
B	Proximal tubule
C	Distal tubule
D	Henle’s loop
E	Receiving tube
№	48
Topic	Krok 2007-2017
Task	49. Study of the biopsy material of an embryo revealed a zone of developmental abnormality in a somite. The zone was located close to the endoderm and the notochord. What formations may have abnormal development in case of pregnancy continuation?
Correct answer	Skeletal tissues
B	Genito-urinary system

C	Skeletal striated muscle tissue
D	Cardiac striated muscle tissue
E	Fibrous connective tissue of skin
№	49
Topic	Krok 2007-2017
Task	5. Golgi complex exports substances from a cell due to the fusion of the membrane saccule with the cell membrane. The saccule contents flows out. What process is it?
Correct answer	Exocytosis
B	Endocytosis
C	Active transport
D	Facilitated diffusion
E	All answers are false
№	50
Topic	Krok 2007-2017
Task	50. A specimen of pia mater includes a vessel whose wall doesn't have the tunica media, the tunica externa is adherent to the surrounding tissues, the intima is composed of a basement membrane and endothelium. What vessel is it?
Correct answer	Nonmuscular vein
B	Muscular vein with underdeveloped muscular elements
C	Muscular artery
D	Arteriole
E	Artery of mixed type
№	51
Topic	Krok 2007-2017
Task	51. A histological specimen of the eyeball shows a biconvex structure connected to the ciliary body by the fibers of the Zinn's zonule and covered with a transparent capsule. Name this structure:
Correct answer	Crystalline lens
B	Vitreous body
C	Ciliary body
D	Cornea
E	Sclera
№	52

Topic	Krok 2007-2017
Task	52. A specimen shows an organ covered with the connective tissue capsule with trabeculae radiating inward the organ. There is also cortex containing some lymph nodules, and medullary cords made of lymphoid cells. What organ is under study?
Correct answer	Lymph node
B	Thymus
C	Spleen
D	Red bone marrow
E	Tonsils
№	53
Topic	Krok 2007-2017
Task	53. The cellular composition of exudate largely depends on the etiological factor of inflammation. What leukocytes are the first to get into the focus of inflammation caused by pyogenic bacteria?
Correct answer	Neutrophil granulocytes
B	Monocytes
C	Myelocytes
D	Eosinophilic granulocytes
E	Basophils
№	54
Topic	Krok 2007-2017
Task	54. Alveolar space of the acinus was invaded by some bacteria which interacted with the surfactant. This led to the activation of the cells that are localized in the alveolar walls and on the surface. What cells are these?
Correct answer	Alveolar macrophages
B	Alveolocytes type I
C	Endothelial cells
D	Clara cells
E	Alveolocytes type II
№	55
Topic	Krok 2007-2017
Task	55. Negative environmental factors have caused the dysfunction of myosatellite cells. What function of the whole muscle fibre is likely to be changed in this case?
Correct answer	Regeneration

B	Contraction
C	Trophism
D	Contractile thermogenesis
E	Relaxation
№	56
Topic	Krok 2007-2017
Task	56. A specimen of a parenchymal organ shows poorly delineated hexagonal lobules surrounding a central vein, and the interlobular connective tissue contains embedded triads (an artery, a vein and an excretory duct). What organ is it?
Correct answer	Liver
B	Pancreas
C	Thymus
D	Spleen
E	Thyroid
№	57
Topic	Krok 2007-2017
Task	57. As a result of a mechanical injury an over 10 cm long portion of a peripheral nerve was damaged. This led to the impairment of the upper limb activity. The patient was offered nerve transplantation. What glial cells will participate in regeneration and provide the trophism of the injured limb?
Correct answer	Schwann cells
B	Fibrous cells
C	Protoplasmic cells
D	Microglia
E	Ependymal cells
№	58
Topic	Krok 2007-2017
Task	58. 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
№	59
Topic	Krok 2007-2017
Task	59. Human skin has a high breaking strength. It is known that the skin consists of epithelial tissue and two kinds of connective tissue. Which of the following tissues provides the skin strength?
Correct answer	Unformed dense connective tissue
B	Stratified squamous epithelium
C	Loose connective tissue
D	Single-layer epithelium
E	Transitional epithelium
№	60
Topic	Krok 2007-2017
Task	6. A sensitive neural ganglion consists of roundish neurocytes with one extension that divides into axon and dendrite at some distance from the perikaryon. What are these cells called?
Correct answer	Pseudounipolar
B	Unipolar
C	Bipolar
D	Multipolar
E	Apolar
№	61
Topic	Krok 2007-2017
Task	60. A 22-year-old female student consulted a physician about fever up to 38oC, weakness, sore throat. Objectively: there is white coating of the tongue. What histological structures of the tongue are involved in the formation of this coating?
Correct answer	Epithelium of the filiform papillae
B	Epithelium of the foliate papillae
C	Epithelium of the fungiform papillae
D	Epithelium of the circumvallate papillae
E	Connective-tissue base of all the lingual papillae
№	62
Topic	Krok 2007-2017

Task	61. A microslide contains the preparation of a gland composed of several secretory saccule-shaped parts that open in the common excretory duct. What gland is it?
Correct answer	Simple branched alveolar gland
B	Compound branched alveolar gland
C	Simple unbranched alveolar gland
D	Compound unbranched alveolar gland
E	Simple branched tubular gland
№	63
Topic	Krok 2007-2017
Task	62. As a result of an injury, the integrity of the anterior spinal cord root was broken. Specify the neurons and their processes that had been damaged:
Correct answer	Axons of motor neurons
B	Motor neuron dendrites
C	Axons of sensory neurons
D	Dendrites of sensory neurons
E	Dendrites of association neurons
№	64
Topic	Krok 2007-2017
Task	63. An electron micrograph shows a cell-to-cell adhesion consisting, in each cell, of an attachment plaque. The intercellular space is filled with electron-dense substance including transmembrane fibrillar structures. Specify this adhesion:
Correct answer	Desmosome
B	Synapse
C	Tight junction
D	Nexus
E	Adherens junction
№	65
Topic	Krok 2007-2017
Task	64. During the histological study of cortical shaft, basophilic cells with developed synthesis organelles can be seen on the bone surface under the layer of fibers. These cells take part in bone tissue regeneration. What shaft layer are they located in?
Correct answer	Periosteum

B	Bone
C	Osteon layer
D	Outer lamellae of compact bone tissue
E	Inner lamellae of compact bone tissue
№	66
Topic	Krok 2007-2017
Task	65. In allergic diseases, a dramatic increase in basophilic leukocyte number in patients' blood is observed. This phenomenon is due to the following basophil function:
Correct answer	Participation of heparin and histamine in metabolism
B	Phagocytosis of microorganisms and small particles
C	Immunoglobulin synthesis
D	Phagocytosis of immune complexes
E	Participation in blood clotting
№	67
Topic	Krok 2007-2017
Task	66. There are cortical and medullary substances separated by connective tissue layer in the endocrine gland specimen. Parenchyma cells make up three zones in cortical substance, with rounded masses in the superficial zone, parallel chords in the middle one, reticular structure of cell chords in the deep one. What gland is it?
Correct answer	Adrenal gland
B	Thyroid gland
C	Pituitary gland
D	Epiphysis
E	Hypothalamus
№	68
Topic	Krok 2007-2017
Task	67. Histological specimen of a 10-day human embryo represents 2 contacting sacs (amniotic and yolk sacs). Specify the structure that separates the amniotic cavity from the yolk sac:
Correct answer	Embryonic shield
B	Amniotic stalk
C	Floor of the amniotic sac
D	Roof of the yolk sac

E	Extraembryonic mesoderm
№	69
Topic	Krok 2007-2017
Task	68. An electron micrograph shows a cell of neural origin. The terminal portion of the cell dendrite has cylindrical shape and consists of 1000 closed membrane disks. What cell is represented by the micrograph?
Correct answer	Rod receptor cell
B	Cone receptor cell
C	Spinal node neuron
D	Neuron of the cerebral cortex
E	Neuron of the anterior horns of the spinal cord
№	70
Topic	Krok 2007-2017
Task	69. A histologic specimen represents an organ with walls comprised of mucous, submucous, fibrous-cartilaginous and adventitial membranes. Epithelium is multirowed and ciliated, muscular layer of mucous membrane is absent, submucous membrane contains serousmucous glands, hyaline cartilage forms open circles. What organ has the described morphological features?
Correct answer	Trachea
B	Tertiary bronchi (segmental bronchi)
C	Secondary bronchi (lobar bronchi)
D	Terminal bronchiole
E	Larynx
№	71
Topic	Krok 2007-2017
Task	7. An embryo displays disturbed process of dorsal mesoderm segmentation and somite formation.What part of skin will have developmental abnormalities?
Correct answer	Derma
B	Hair
C	Sebaceous glands
D	Epidermis
E	Sudoriferous glands
№	72
Topic	Krok 2007-2017

Task	70. Histologic specimen of a kidney demonstrates cells closely adjoined to the renal corpuscle in the distal convoluted tubule.Their basement membrane is extremely thin and has no folds.These cells sense the changes in sodium content of urine and influence renin secretion occurring in juxtaglomerular cells.Name these cells:
Correct answer	Macula densa cells
B	Juxtaglomerular cells
C	Mesangial cells
D	Podocytes
E	Glomerular capillary endothelial cells
№	73
Topic	Krok 2007-2017
Task	71. Atretic bodies and developed yellow body can be observed along with follicles of various orders in an ovary specimen. What stage of ovarian and menstrual cycle is characterized by the described ovary condition?
Correct answer	Premenstrual
B	Menstrual
C	Postmenstrual
D	Regeneration
E	Follicle growth
№	74
Topic	Krok 2007-2017
Task	72. A 12-year-old patient has white non- pigmented spots on the skin. The spots appeared after the patient became 10 years old, and they constantly grow. This spots appeared due to the lack of the following skin cells:
Correct answer	Melanocytes
B	Adipocytes
C	Fibrocytes
D	Plasmocytes
E	Labrocytes
№	75
Topic	Krok 2007-2017

Task	73. Work in a mine is known to cause inhalation of large amounts of coal dust. Inhaled coal dust can be detected in the following pulmonary cells:
Correct answer	Alveolar macrophages
B	Respiratory epithelial cells
C	Secretory epithelial cells
D	Capillary endothelial cells
E	Pericapillary cells
№	76
Topic	Krok 2007-2017
Task	74. Cells of 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
№	77
Topic	Krok 2007-2017
Task	75. A doctor examined a patient, studied the blood analyses, and reached a conclusion, that peripheral immunogenesis organs are affected. What organs are the most likely to be affected?
Correct answer	Tonsils
B	Thymus
C	Kidneys
D	Red bone marrow
E	Yellow bone marrow
№	78
Topic	Krok 2007-2017
Task	76. A microslide presents a tissue with spherical cells, each of them containing a large fat drop covered with thin cytoplasm layer in its center. Nucleus is compressed and situated at the cell periphery. What tissue is it?
Correct answer	A.White adipose tissue
B	Brown adipose tissue
C	Mucous tissue

D	Pigmented tissue
E	Reticular tissue
№	79
Topic	Krok 2007-2017
Task	77. An infant has been diagnosed with microcephaly. 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
№	80
Topic	Krok 2007-2017
Task	78. Histologic preparation stained with orcein demonstrates from 40 to 60 fenestrated elastic membranes within the middle coat of vessel. Name this vessel:
Correct answer	Elastic artery
B	Muscular artery
C	Mixed type artery
D	Muscular vein
E	Nonmuscular vein
№	81
Topic	Krok 2007-2017
Task	79. 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
№	82
Topic	Krok 2007-2017

Task	8. Life cycle of a cell includes the process of DNA autoreduplication. As a result of it monochromatid chromosomes turn into bichromatid ones. What period of cell cycle does this phenomenon fall into?
Correct answer	S
B	G0
C	G1
D	G2
E	M
№	83
Topic	Krok 2007-2017
Task	80. Histological specimen of a hemopoietic organ shows clusters of node-and band- shaped lymphocytes that along with stroma elements compose cortical and medullar substances .Name this organ:
Correct answer	Lymph node
B	Spleen
C	Red bone marrow
D	Thymus
E	Palatine tonsil
№	84
Topic	Krok 2007-2017
Task	81. Histological specimen of an ovary demonstrates a spherical structure composed of large glandular cells containing lutein. What hormone is produced by the cells of this structure?
Correct answer	Progesterone
B	Estrogens
C	Testosterone
D	Corticosterone
E	Aldosterone
№	85
Topic	Krok 2007-2017
Task	82. Parenchyma of an organ is composed of pseudounipolar neurons localized under the capsule of connective tissue. Central place belongs to nerve fibers. Name this organ:
Correct answer	Spinal ganglion
B	Sympathetic ganglion
C	Intramural ganglion

D	Nerve trunk
E	Spinal cord
№	86
Topic	Krok 2007-2017
Task	83. A microslide demonstrates an organ with its wall consisting of three membranes. The inner membrane has tubular glands and undergoes cyclic changes. Name this organ:
Correct answer	Uterus
B	Esophagus
C	Vagina
D	Ureter
E	Urinary bladder
№	87
Topic	Krok 2007-2017
Task	84. 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 stage:
Correct answer	Interphase
B	Prophase
C	Metaphase
D	Anaphase
E	Telophase
№	88
Topic	Krok 2007-2017
Task	85. Histological specimen of the ovary shows large hollow structures. Primary oocyte within these structures is surrounded with transparent membrane and radiating crown and is situated in the cumulus oophorus, the wall is made of follicular cell layer and theca. What ovarian structure can be characterized by these morphological features?
Correct answer	Mature (tertiary) follicle
B	Primordial follicle
C	Primary follicle
D	Corpus luteum
E	Corpus atreticum
№	89

Topic	Krok 2007-2017
Task	86. Histological specimen demonstrates a parenchymal organ with cortical and medullary substances. The cortical substance is composed of bands of epithelial cells with capillary blood vessels between them. The bands form three zones. The medullary substance consists of chromaffin cells and venous sinusoids. What organ can be characterized by these morphological features?
Correct answer	Adrenal gland
B	Kidney
C	Lymph node
D	Thymus
E	Thyroid gland
№	90
Topic	Krok 2007-2017
Task	87. Investigation of an isolated cardiac myocyte determined that it does not generate excitation impulses automatically, which means this cardiac myocyte was obtained from the following cardiac structure:
Correct answer	Ventricles
B	Sinoatrial node
C	Atrioventricular node
D	His’ bundle
E	Purkinje’s fibers
№	91
Topic	Krok 2007-2017
Task	88. Electron micrograph of the kidney shows fenestrated endothelium lying on the basement membrane; the external surface of the membrane has adjacent dendritic epithelial cells. What do these structures form in the kidney?
Correct answer	Filtration barrier
B	Juxtaglomerular apparatus
C	Distal nephron
D	Henle’s loop
E	Proximal nephron
№	92
Topic	Krok 2007-2017

Task	89. A patient with pneumonia has body temperature of 39,2oC. What cells are the main producers of endogenous pyrogen that had caused such temperature rise?
Correct answer	Monocytes
B	Eosinophils
C	Neutrophils
D	Endotheliocytes
E	Fibroblasts
№	93
Topic	Krok 2007-2017
Task	9. A pathological process in bronchi resulted in epithelium desquamation. What cells will regenerate bronchial epithelium?
Correct answer	Basal
B	Intercalary
C	Ciliate
D	Endocrinal
E	Goblet
№	94
Topic	Krok 2007-2017
Task	90. A patient complaining of heartburn has undergone biopsy of the gastric mucosa. In the sample there are numerous cells with oxyphilic cytoplasm in the glandular epithelium. Name these cells:
Correct answer	Exocrine parietal cells
B	Exocrine chief cells
C	Mucous cells
D	Epithelial cells
E	Endocrine cells
№	95
Topic	Krok 2007-2017
Task	91. A person with vitamin A deficiency develops twilight vision disturbance. Name the cells that fulfill this photoreceptor function:
Correct answer	Rod cells
B	Horizontal cells of retina
C	Bipolar neurons

D	Cone cells
E	Ganglionic nerve cells
№	96
Topic	Krok 2007-2017
Task	92. Presented is the biopsy material of an organ consisting of saccule-shaped rounded structures of varying size. Inside these structures there is a gel-like non-cellular substance - colloid; structure walls are composed of one layer of cuboidal cells that lay on the basement membrane. Between the saccules there is connective tissue with vessels. Name this organ:
Correct answer	Thyroid gland
B	Pancreas
C	Parotid gland
D	Thymus
E	Parathyroid gland
№	97
Topic	Krok 2007-2017
Task	93. A histological specimen shows significant amount of mucous connective tissue (Wharton’s jelly), vessels, as well as residual yolk and allantois. Name this organ:
Correct answer	Umbilical cord
B	Esophagus
C	Ureter
D	Urethra
E	Vermiform appendix
№	98
Topic	Krok 2007-2017
Task	94. 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 production and secretion?
Correct answer	Golgi apparatus
B	Mitochondria
C	Ribosomes
D	Centrosomes
E	Lysosomes

№	99
Topic	Krok 2007-2017
Task	95. During the first year of life an infant presents with disturbed process of breast milk curdling. What cells of the proper gastric glands are functionally disturbed?
Correct answer	Main exocrinocytes
B	Parietal exocrinocytes
C	Cervical mucous cells
D	Accessory mucous cells
E	Exocrinocytes
№	100
Topic	Krok 2007-2017
Task	96. X-rayexmination of a57-year-old man indicates local areas of hard bone tissue resorption in some of the patient’s bones. These changes can be associated with increased activity of:
Correct answer	Osteoclasts
B	Chondroblasts
C	Osteocytes
D	Osteoblasts
E	Chondrocytes
№	101
Topic	Krok 2007-2017
Task	97. Regional lymph nodes surrounding an infected wound are enlarged. Histological examination shows increased number of macrophages, lymphocytes, and lymphatic follicles, as well as a large amount of plasma cells, in the cortical layer of the lymph nodes. What process in the lymph nodes is indicated by these histologic changes?
Correct answer	Antigen stimulation
B	Acquired deficiency of lymphoid tissue
C	Congenital deficiency of lymphoid tissue
D	Neoplastic aberration
E	Transplant rejection
№	102
Topic	Krok 2007-2017

Task	98. A microslide of the lung tissue sample taken from a patient with pneumonia shows damage to the cells that carry out respiratory function. What cells of the alveolar wall are damaged?
Correct answer	Type 2 alveolar cells
B	Type1alveolar cells
C	Macrophages
D	Club cells
E	Lymphocytes
№	103
Topic	Krok 2007-2017
Task	99. An electron micrograph of a nephron segment shows cuboidal cells with ciliated lining on their apical surfaces; their basal surfaces have basal striation with mitochondria located between the cytolemma invaginations. Name the described nephron segment:
Correct answer	Proximal tubule
B	Collecting ducts
C	Distal tubule
D	Thin limbs of Henle’s loop
E	Glomerular capsule
№	krok 2018
Topic	endocrine system
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 production and secretion?
Correct answer	Golgi apparatus
B	Mitochondria
C	Ribosomes
D	Centrosomes
E	Lysosomes
№	krok 2018
Topic	blood
Task	Microscopy of the puncture sample obtained from the inflammation focus of the patient with cutaneous abscess revealed numerous blood cells of different types. What cells are the first totransfer from vessels to tissues during inflammation?

Correct answer	Neutrophils
B	Monocytes
C	Basocytes
D	Eosinophils
E	Lymphocytes
№	krok 2018
Topic	stomach
Task	During the first year of life an infant presents with disturbed process of breast milk curdling.What cells of the proper gastric glands are functionally disturbed?
Correct answer	Main exocrinocytes
B	Parietal exocrinocytes
C	Cervical mucous cells
D	Accessory mucous cells
E	Exocrinocytes
№	krok 2018
Topic	: bone tissue
Task	X-ray exmination of a57-year-old man indicates local areas of hard bone tissue resorption in some of the patient’sbones. These changes can be associated with increased activityof:
Correct answer	Osteoclasts
B	Chondroblasts
C	Osteocytes
D	Osteoblasts
E	Chondrocytes
№	krok 2018
Topic	organs of hematopoiesis and immune defense
Task	Histological specimen shows organ parenchyma to consist of lymphoid tissue that forms lymph nodules;the nodules are located diffusely and have a central artery.What anatomical structure has such morphological characteristics?
Correct answer	Spleen
B	Tonsil
C	Lymphnode
D	Thymus

E	Redbonemarrow
№	krok 2018
Topic	respiratory system
Task	A microslide of the lung tissue sample taken from a patient with pneumonia shows damage to the cells that carry out respiratory function.What cells of the alveolar wall are damaged?
Correct answer	Type1alveolar cells
B	Type 2 alveolar cells
C	Macrophages
D	Clubcells
E	Lymphocytes
№	krok 2018
Topic	urine system
Task	An electron micrograph of a nephron segment shows cuboidal cells with ciliated lining on their apical surfaces; their basal surfaces have basal striation with mi- tochondria located between the cytolemma invaginations.Name the described nephron segment:
Correct answer	Proximal tubule
B	Collecting ducts
C	Distal tubule
D	Thinlimbs of Henle'sloop
E	Glomerular capsule
№	krok 2018
Topic	embryology
Task	A specimen of a10-day-old human embryo shows two interconnected sacs (amniotic andyolksacs).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	Amnioticstalk
E	Extraembryonic mesoderm
№	krok 2018
Topic	embryology

Task	A microslide of the skin sample taken from the finger of a child shows that epi- dermis 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	cardiovascular system
Task	An electron micrograph shows a small vessel with endothelial layer but without basement membrane and pericytes; anchoring fibrilsare present.Name this vessel:
Correct answer	Lymphcapillary
B	Arteriole
C	Venule
D	Sinusoidhemocapillary
E	Visceralhemocapillary
№	krok 2018
Topic	nervous system
Task	Parenchyma of an organ is composed of pseudounipolar neurons localized under the capsule of connective tissue.Centra lplace belongs to nerve fibers.Name this organ:
Correct answer	Spinal ganglion
B	Sympathetic ganglion
C	Intramural ganglion
D	Nerve trunk
E	Spinal cord
№	krok 2018
Topic	organ of vision
Task	An 8-year-old girl presents with signs of disturbed twilightvision.This conditionis caused by the deficiency of vitamin:
Correct answer	A
B	E
C	D

D	K
E	F
№	krok 2019
Topic	cytology
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	Nucleic acid synthesis
C	Protein synthesis
D	Intracellular digestion
E	Formation of maturation spindle
№	krok 2019
Topic	: cardiovascular system
Task	A histological specimen demonstrates a vessel with the wall that consists of endothelium, basement membrane, and loose connective tissue. This vessel belongs to the following type:
Correct answer	Non-muscular vein
B	Lymph capillary
C	Muscular vein
D	Artery
E	Hemocapillary
№	krok 2019
Topic	intestine
Task	Some diseases of large intestine lead to the changes in the quantitative ratio between mucosal epithelial cells. What cell types are normally predominant in the cryptal epithelium of the large intestine?
Correct answer	Goblet cells
B	Ciliated columnar epithelial cells
C	Cells with acidophilic granules
D	Poorly differentiated cells
E	Endocrine cells
№	krok 2019
Topic	cytology
Task	Histone protein synthesis is artificially blocked in a cell. What cell structure will be damaged as a result?

Correct answer	Nuclear chromatin
B	Golgi apparatus
C	Cell membrane
D	Nuclear membrane
E	Nucleolus
№	krok 2019
Topic	endocrine system
Task	Domestic accident has resulted in a significant blood loss in the patient, which was accompanied by a drop in blood pressure. What hormones ensure quick restoration of the blood pressure caused by a blood loss?
Correct answer	Adrenaline, vasopressin
B	Reproductive hormones
C	Cortisol
D	Aldosterone
E	Oxytocin
№	krok 2019
Topic	embryology
Task	A histological specimen shows significant amount of mucous connective tissue (Wharton's jelly), vessels, as well as remnants of yolk sac stalk and allantois. Name this organ:
Correct answer	Umbilical cord
B	Urethra
C	Vermiform appendix
D	Esophagus
E	Ureter
№	krok 2019
Topic	blood
Task	An inflammation can be characterized by hemocapillary dilation in the affected area, decreased blood circulation, and increased vessel wall permeability. What cells play the key role in this process?
Correct answer	Tissue basophils
B	Fibroblasts
C	Eosinophils
D	Plasma cells
E	Macrophages

№	krok 2019
Topic	nervous system
Task	Parenchyma of an organ is composed of pseudounipolar neurons localized under the capsule of connective tissue. Central place belongs to nerve fibers. Name this organ:
Correct answer	Spinal ganglion
B	Sympathetic ganglion
C	Nerve trunk
D	Intramural ganglion
E	Spinal cord
№	krok 2019
Topic	bone tissue
Task	A 14-year old girl presents to the emergency department for evaluation of an ''infected leg'.' She states there is no history of trauma but mentions she had a history of sickle cell disease. On physical examination, her upper part of right shin is very painful, red, swollen and hot. Her temperature is 39.2°C.An X-ray shows focal bony lysis and loss of trabecular architecture in the metaphysis of right tibia. Increased activity of which of the following cells is the most likely cause of bone reabsorption in this patient?
Correct answer	Osteoclasts
B	Osteocytes
C	Osteoblasts
D	Chondroblasts
E	Chondrocytes
№	krok 2019
Topic	endocrine system
Task	A 24-year-old man undergoes surgery and during the operation, an organ is excised and sent for histological evaluation. A light microscopic examination reveals the organ encased by thin connective tissue capsule that enters the substance of the lobes to further subdivide the organ into irregular lobular units. Each lobule contains a cluster of follicles filled with colloid. Follicular epithelium consists of low columnar, cuboidal or squamous cells depending on the level of activity of the follicle. Which of the following organs does this tissue most likely belong to?
Correct answer	Thyroid gland
B	Parotid gland
C	Thymus

D	Parathyroid gland
E	Pancreas
№	krok 2019
Topic	cytology
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 place in the cell?
Correct answer	Telophase
B	Anaphase
C	Prophase
D	Metaphase
E	.
№	krok 2019
Topic	organs of hematopoiesis and immune defense
Task	An unidentified surgical specimen is received for histopathologic analysis. A portion of the specimen is cut and stained with hematoxylin and eosin. Under the microscope, you see an organ encapsulated by dense connective tissue that extends to the deeper areas by way of the trabecular extensions. The organ can be subdivided into two regions: a cortex with lymphoid nodules and medulla with medullary cords populated by plasma cells, B-cells and T-cells. Which of the following structures is most likely the origin of this surgical specimen?
Correct answer	Lymph node
B	Tonsils
C	Spleen
D	Thymus
E	Bone marrow
№	krok 2020
Topic	LIVER AND PANCREAS
Task	Proliferation of the connective tissue in the hepatic parenchyma (fibrosis) caused by chronic diseases is often associated with disturbed blood circulation in the classical lobules. What blood flow direction can be observed in these lobules?
Correct answer	From the periphery to the center
B	From the base to the apex

C	Around the lobule
D	From the apex to the base
E	From the center to the periphery
№	krok 2020
Topic	ORGANS OF HEMATOPOIESIS AND IMMUNE DEFENSE
Task	For diagnostic purposes a parenchyma sample of the patient’s blood-forming organ was obtained. The sample contained megakaryocytes. What organ is it?
Correct answer	Red bone marrow
B	Tonsil
C	Lymph node
D	Thymus
E	Spleen
№	krok 2020
Topic	ORGANS OF HEMATOPOIESIS AND IMMUNE DEFENSE
Task	Histological specimen shows parenchyma of an organ that consists of lymphoid tissue that forms lymph nodules; the nodules are located diffusely and have a central artery. What anatomical structure has such morphological characteristics?
Correct answer	Spleen
B	Thymus
C	Lymph node
D	Red bone marrow
E	Tonsil
№	krok 2020
Topic	CARDIOVASCULAR SYSTEM
Task	A histological specimen demonstrates a vessel with the wall that consists of endothelium, basement membrane, and loose connective tissue. What type of vessel is it?
Correct answer	Non-muscular vein
B	Artery
C	Hemocapillary
D	Muscular vein
E	Lymph capillary
№	krok 2020

Topic	CYTOLOGY
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	Peroxisomes
C	Lysosomes
D	Ribosomes
E	Mitochondria
№	krok 2020
Topic	uRINARY SYSTEM
Task	An electronic microphotograph shows a fragment of the renal corpuscle. In the photograph there is a large epithelial cell with numerous appendages. The appendages are attached to the basement membrane of the capillaries. What type of cell is it?
Correct answer	Podocyte
B	Endothelial cell
C	Mesangial cell
D	Smooth muscle cell
E	Juxtavascular cell
№	krok 2020
Topic	embryology
Task	During gastrulation, three germ layers arc being formed (ectoderm, endoderm, and mesoderm). Later they develop into tissues and organs. Ectoderm, in particular, develops into:
Correct answer	Neural tube
B	Intestinal epithelium
C	Skeletal muscles
D	Blood and lymph
E	Hepatic cells
№	krok 2020
Topic	DIGESTIVE SYSTEM
Task	An electronic microphotograph shows a fragment of the proper gastric gland. In the photograph there is a large irregular rounded cell with numerous intracellular canaliculi and mitochondria. Name this type of cell:
Correct answer	Parietal cell

B	Undifferentiated cell
C	Chief cell
D	Foveolar cell
E	Endocrine cell
№	krok 2021
Topic	bone tissue
Task	A worker at a factory that produces vanadium compounds presents with increased ossification caused by high calcium levels in his bone tissues. This condition is likely to be associated with the activity of
Correct answer	Osteoblasts
B	Chondrocyte
C	Osteoclasts
D	Fibrocytes
E	Fibroblasts
№	krok 2021
Topic	embryology
Task	A specimen of a 10-day-old human embryo shows two interconnected sacs (amniotic and yolk sacs). Name the structure located in tHcTpTace where these two sacs connected
Correct answer	Embryonic shield
B	Amniotic stalk
C	Roof of the amniotic sac
D	Extraembryonic mesoderm
E	Floor of the amniotic sac
№	krok 2021
Topic	cardiovascular system
Task	A histological specimen demonstrates a vessel with the wall that consists of endothelium, basement membrane, and loose connective tissueю.TTRlrv&sscl belongs to the following type
Correct answer	Non-muscular vein
B	Lymph capillary
C	Hcmocapillary
D	Muscular vein
E	Artery
№	krok 2021

Topic	immune system
Task	Examination revealed that the patient has an insufficient immunoglobulin count. The likely cause of this finding is a disfunction^) of the following immune system cells
Correct answer	Plasma cells
B	Plasmablasts
C	T-suppressors
D	T-helpers
E	T-killers
№	krok 2021
Topic	immune system
Task	An electron micrograph of the red bone marrow shows a megakaryocyte. Its peripheral part of the cytoplasm permeated by demarcation channels. What is the Tole oLthese"structures
Correct answer	Platelet separation
B	Cell destruction
C	Cell division
D	Increase of the cell surface area
E	Increase of the number of ion channels
№	krok 2021
Topic	respiratory system
Task	Bacteria entered the alveolar space of an acinus. Here they interacted with the surfactant, leading to activation of the cells localized in the alveolar walls and on the alveolar surface. Name these cells
Correct answer	Type II alvcolocytcs
B	Alveolar macrophages
C	Clara’s cells (club cells)
D	Type I alvcolocytcs
E	Endothelial cells
№	krok 2021
Topic	nervous system
Task	One of the parts of the central nervous system has a layered arrangement of neurons, among which there are ^stellate. spindle-shaped, horizontal, and pyramidal cells. This structure corresponds with the following part of the nervous system
Correct answer	A. Cerebral cortex

B	Hypothalamus
C	Mcdulla oblongata
D	Spinal cord
E	Cerebellum
№	krok 2021
Topic	blood
Task	A child was diagnosed with helminths. What changes in the peripheral blood will be observed with this pathology
Correct answer	Eosinophilia
B	Basophilia
C	Leukocytosis
D	Monocytosis
E	_
№	krok 2021
Topic	cytology
Task	The process of tissue respiration is accompanied by oxydalforf of organic compounds and synthesis of macroergic molecules. In what organelles does this process occur
Correct answer	Mitochondria
B	Peroxisomes
C	Ribosomes
D	Golgi apparatus
E	Lysosomes
№	krok 2021
Topic	
Task	A man with acute rhinitis has dry and hyperemic nasal mucosa. What cells of superficial mucosal epithelium normally provide its moisturizing
Correct answer	Goblet cells
B	Brush cells
C	Endocrine cells
D	Short basal cell
E	Tall and short basal cells
№	krok 2021

Topic	connective tissue
Task	After a myocardial infarction, the morphological intactness of the wall was restored in the patient. In this case, regeneration occurred because of the following tissue
Correct answer	Connective tissue
B	Epithelial tissue
C	Cross-striated muscle tissue
D	Smooth muscle tissue
E	Nervous tissue
№	krok 2021
Topic	blood
Task	During analysis a medical laboratory scientist has additionally noted that the blood sample was obtained from a woman. What blood corpuscles have the structural characteristics that allow making such a conclusion
Correct answer	Neutrophilic leukocytes
B	Lymphocytes
C	Basophilic leukocytes
D	Erythrocytes
E	Monocytes
№	krok 2021
Topic	cytology
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 apparatus
D	Nuclear membrane
E	Cell membrane
№	krok 2021
Topic	muscle tissue

Task	Oxygen supply of skeletal muscles during their intensive work is often problematic because of compressed vessels and disrupted blood flow. What supplies muscles with oxygen in this case
Correct answer	Myoglobin
B	Hemoglobin
C	Creatine phosphate
D	Calmodulin
E	Cytochrome
№	krok 2021
Topic	organ of vision
Task	Microslide of an animal retina shows numerous phagosomes in the cells of its outer pigment layer. What function of pigment cells is the most evident in this case
Correct answer	Protective function
B	Activating function
C	Regenerative function
D	Sensitivity
E	Permeability
№	krok 2021
Topic	immune system
Task	A patient with clinical signs of a primary immunodeficiency has functionally disturbed mechanism of antigen-presentation to the immunocompetent cells What cells are likely to have structural defects
Correct answer	T-lymphocytes
B	Fibroblasts
C	Macrophages, monocyte
D	O-lymphocytes
E	B-lymphocytcs

